

This report presents the results of a three-year study commissioned by the European Commission (DG Research) regarding the monitoring, analysis and use of technology transfer and intellectual property regimes in the European Union. This study was organised in the context of the 6<sup>th</sup> Framework Programme for R&D, and was jointly carried out by law firms Mason Hayes+Curran (Dublin) and DLA Piper (Brussels).

The following legal topics are analysed in depth:

- professors' privilege / ownership of publicly-funded research results
- prior user rights
- experimental use exception
- publishing vs. patenting
- legislation applicable to technological know-how
- IPR co-ownership provisions
- IPR provisions applicable in the Community Framework Programmes

In addition, this report presents the outcome of a survey conducted from 2007 until 2009 with respect to IPR awareness and training activities among students in higher education institutions across the EU.

The authors are lawyers specialised in intellectual property, information technology, data protection and telecommunications law.



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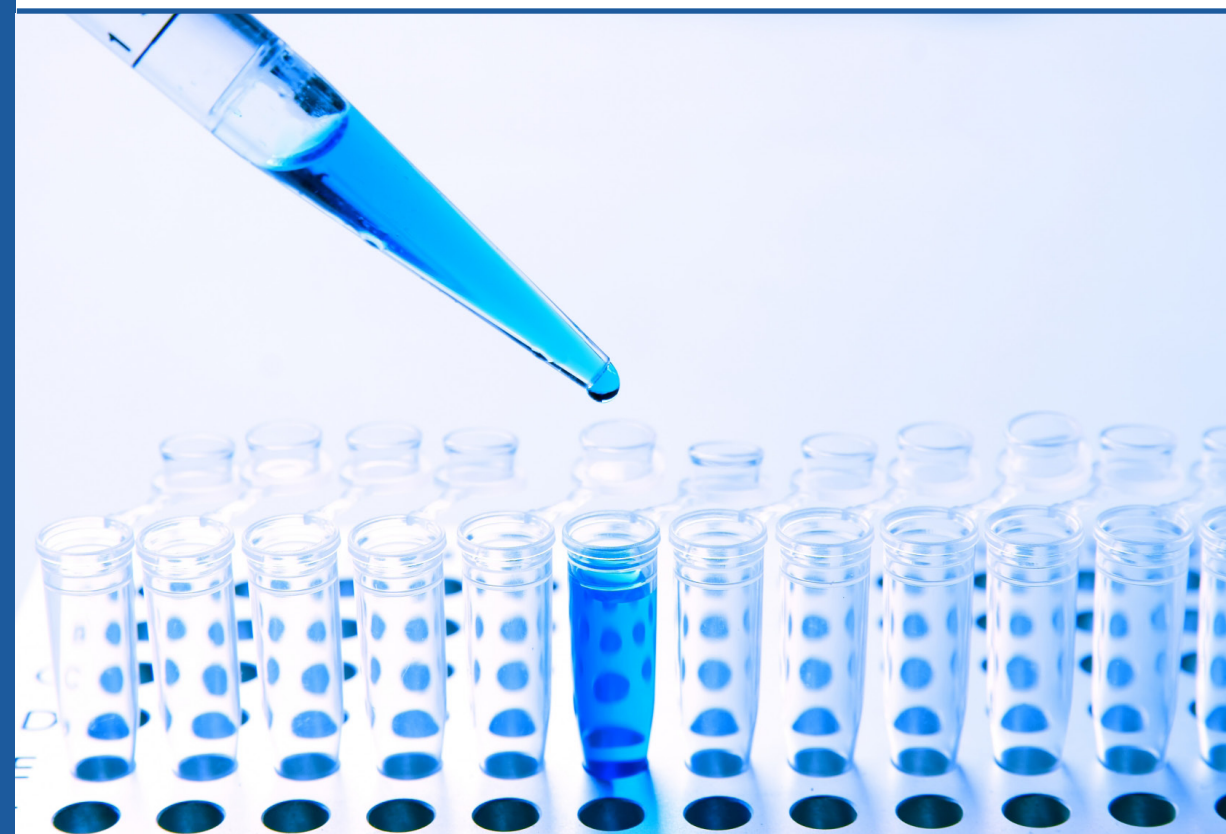
Monitoring and analysis of technology transfer  
and intellectual property regimes and their use  
Results of a study carried out on behalf of the European Commission (DG Research)

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# Monitoring and analysis of technology transfer and intellectual property regimes and their use

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European Commission (DG Research)

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Results of a study carried out on behalf of the European Commission (DG Research)

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European Commission (DG Research)



## Acknowledgements

This report is the result of a study jointly undertaken by law firms DLA Piper UK (Brussels) and Mason Hayes+Curran (Dublin), following the invitation to tender *"Monitoring and analysis of technology transfer and intellectual property regimes and their use"*, issued in 2005 by the Research Directorate General of the European Commission.

As the study depended on legal expertise from twenty-seven countries, a network of National Correspondents was involved throughout the study. These National Correspondents furnished indispensable input to foster the analysis and comparison of the national legislation, case law and legal doctrine.

The authors therefore wish to sincerely thank the following colleagues: Alexander Cizek (Austria), Alexandros Economou and Lina Soteriou Loizidou (Cyprus), Magdalena Hrdlickova (Czech Republic), Michael Goeskjær (Denmark), Pirjo Ant and Viive Kaur (Estonia), Samuli Simojoki (Finland), Carol A.F. Umhoefer and Gregory Tulquois (France), Thomas Jansen and Britta Hinzpeter (Germany), Irene C. Kyriakides and Alexandros Koliiothomas (Greece), Dr. Zoltán Kozma (Hungary), Giacomo Parmigiani (Italy), Robert Kneller (Japan), Ilze Bukaldere (Latvia), Stasys Drazdauskas (Lithuania), Guy Arendt and Véronique Hoffeld and Alain Grosjean (Luxembourg), Dr. Antoine Camilleri (Malta), Peter-Paul Spanjaard (the Netherlands), Marlena Wach and Dagmara Jaskulak (Poland), João Luís Traça (Portugal), Eva Skottke (Slovak Republic), Katarina Prebil (Slovenia), Diego Ramos (Spain), Jan Bryme (Sweden), Simon Levine (UK), and Mark Radcliffe (United States).

The authors also wish to thank the following associations, companies and institutions, which were invited as stakeholders to provide comments and practical feedback on the analysis and proposals prepared by the authors: Agfa, ARCHES, AWSG, Centre de Regulació Genòmica, Charles University, Cyprus University of Technology, the Danish Agency for Science, Technology and Innovation, EARMA, European Private Equity & Venture Capital Association, Fernando Pessoa University UFP, IMIM-Hospital del Mar, the Industrial Property Office of the Slovak Republic, the IPR Helpdesk, Katholieke Universiteit Leuven, Leiden University Research & Innovation Services, Microsoft EMEA, the National Academies, the University College Dublin, the University of Zagreb, Vienna University of Technology and WCTT.

Finally, the authors are particularly grateful to the Commission Project Officers Mr Denis Dambois, Mr David Woolf and Ms Shalini Saxena, who guided the authors throughout the study and provided useful feedback and valuable support.

Brussels - Dublin, August 2009

Prof. Dr. Patrick Van Eecke, Jeanne Kelly, Peter Bolger and Maarten Truyens

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# Chapter 1

## Introduction and overview

### 1. Background to the study

This report presents the findings of the study *"Monitoring and analysis of technology transfer and intellectual property regimes and their use"*, which was organised in the context of the 6<sup>th</sup> Framework Programme for R&D<sup>1</sup>. This programme enabled the Commission to carry out studies or have them carried out through public procurement procedures. The context of the specific programme for research, technological development and demonstration was entitled *"Integrating and strengthening the European Research Area"* <sup>2</sup>.

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<sup>1</sup> Decision No 1513/2002/EC of the European Parliament and of the Council of 27 June 2002 concerning the Sixth Framework Programme of the European Community for research, technological development and demonstration activities, contributing to the creation of the European Research Area and to innovation (2002 to 2006) - Official Journal L 232 on 29.08.2002

<sup>2</sup> Council Decision 2002/834/EC of 30 September 2002 – Official Journal L 294 of 29.10.2002

The period of the study is 2006 to 2009, and deliverables include both written reports on key areas and holding a number of workshops involving experts and stakeholders in European intellectual property ("IP").

The study relates to two objectives of the section *"Coherent development of research and innovation policies"* of this specific programme:

- benchmarking research and innovation policies; and
- improving the regulatory and administrative environment for research and innovation in Europe.

In the Communication *"Towards a European Research Area"*,<sup>3</sup> the Commission had already emphasised the importance of developing effective tools to protect IP (section 3.2). On this basis, a number of actions were launched to investigate specific research-related IPR issues.

The Commission Communication *"Investing in research: an action plan for Europe"*<sup>4</sup> contains a section relating to IP (§ 6.1), stating that:

*"The protection of intellectual assets is important to the competitiveness of most organisations, private or public, and to their attractiveness for investors. In particular, there is a need for properly balanced intellectual property systems, offering suitable incentives to innovate and invest in research, while at the same time ensuring that the diffusion and further development of research results are not stifled. Considerable progress has been achieved in recent years, at international and Community levels, such as the adoption of the unitary Community design right becoming effective in 2003 and the recent political agreement on the creation of the Community patent system. However, there is still scope to make European intellectual property systems more responsive to the rapid evolution of both research processes and specific technological areas. In addition, actions are needed to promote the optimal use of intellectual property rights systems in Europe, with a special emphasis on academic institutions and smaller businesses".*

The following action points had been identified in this action plan in order to address these issues related to intellectual property rights ("IPR"):

- assess specific research-related aspects of IPR law, including the experimental exception, prior user rights, legislation applicable to technological know-how,

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<sup>3</sup> COM (2000)6 of 18.1.2000

<sup>4</sup> COM (2003)226 of 4.6.2003

and IPR co-ownership provisions, with a view to identifying necessary actions where appropriate;

- develop guidelines to help Member States review – and, where appropriate, adapt – their national regimes governing the ownership, licensing and exploitation of IPR resulting from publicly-funded research, with the aim of promoting technology transfer to industry and spin-off creation;
- support EU-wide coordinated IPR awareness and training activities targeting in particular the European research community; and
- ensure that before graduating, every student – especially from science, engineering and business schools – receives basic awareness/training regarding IP and technology transfer.

Also in 2003, the Commission issued a Communication on *"Researchers in the European Research Area: one profession, multiple careers"*<sup>5</sup>. It aims to analyse the different elements that characterise the profession of researcher and defines the various factors which condition the development of researchers' careers at European level<sup>6</sup>. The Communication identifies different cultures regarding, on the one hand, confidentiality of research results and IP protection and, on the other hand, publishing as a difficulty for researchers to move from the public sector to the private sector<sup>7</sup>.

The Commission Communication *"Improving knowledge transfer between research institutions and industry across Europe: embracing open innovation"*<sup>8</sup> adopted in 2007 identified the need to improve knowledge transfer between public research organisations (PROs) and third parties as one of the key elements on the EU's innovation strategy. The Communication noted that given that the rules concerning the ownership of publicly-funded research still vary across the EU, it might be appropriate to revisit the question of a single European ownership model for such research, in the then near future. The Communication represents a starting point for a discussion on a common European framework for knowledge transfer in order to create a *"more level playing fields and a more coherent European landscape for knowledge transfer"*<sup>9</sup>.

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<sup>5</sup> COM(2003) 436 final of 18.07. 2003

<sup>6</sup> At page 3

<sup>7</sup> At page 10

<sup>8</sup> COM(2007) 182 final, SEC 2007, 449, of 04.04.2007

<sup>9</sup> At page 11

Its accompanying complementary voluntary guidelines identified measures which are underway to improve trans-national collaboration and exploitation of research results. One of such measures being examined by some Member States is the introduction of an accreditation scheme for knowledge transfer professionals<sup>10</sup>, with the aim of increasing the mobility of such professionals across the EU. The guidelines are expressed to be a living document, to be complemented by additional work to be undertaken by a related working group.

Further, this topic is also addressed in the Commission's Green Paper entitled *"The European Research Area: New perspectives"*<sup>11</sup>. The Green Paper assesses achievements to date since the March 2000 Lisbon Council endorsed the objective of creating a European Research Area (ERA). It identifies<sup>12</sup> as a "major hindrance" to the creation of an ERA, the *"inconsistent and often inadequate rules and approaches for managing intellectual property rights resulting from public funding"*. It refers to patenting as remaining *"excessively complicated and costly in Europe"*<sup>13</sup> and notes the desirability of ensuring consistent treatment across the EU for R&D specific issues such as joint ownership regimes and the research exception.

In the accompanying document *"Commission Staff Working Document"*<sup>14</sup>, the Commission finds that the enforcement of IP rights is of the utmost importance for European industry, and even for society at large. Serious problems have been identified abroad regarding the enforcement of IP rights owned by European companies. In this respect, several issues need to be considered, including a poor local IPR awareness and limited knowledge of European companies regarding non-European IPR systems<sup>15</sup>.

The Committee of the Regions issued an opinion on *"The European Research Area - New Perspectives"*<sup>16</sup>, where it emphasised the need to create standards and protection rights for IP. The Committee also found that the development of a European charter for the handling of IP from public research and higher education institutes

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<sup>10</sup> OMC-Net Project "Certified trans-national technology transfer manager"

<sup>11</sup> COM(2007) 161 Final, SEC(2007) 412

<sup>12</sup> At page 16

<sup>13</sup> At page 17

<sup>14</sup> SEC (2007) 412/2

<sup>15</sup> At page 63

<sup>16</sup> Opinion of the Committee of the Regions on "The European Research Area - New Perspectives" - Official Journal C 305/25 of 15.12.2007

could make a significant contribution to shaping the European Research Area and to promoting cooperation networks<sup>17</sup>.

Following the 2007 Communication on improving knowledge transfer, the European Council invited the Commission to develop guidance on the management of IP by public research organisations. On 10 April 2008, the Commission issued a Recommendation<sup>18</sup> in which it provides Member States with policy guidelines for the development or updating of national guidelines and frameworks. In addition, the Commission identified practices of public authorities that facilitate the management of IP in knowledge transfer activities by universities and other PROs<sup>19</sup>. Finally, the Commission provides PROs with a *Code of Practice*, in order to improve the way they manage IP and knowledge transfer<sup>20</sup>.

Following the Commission Green Paper *"The European Research Area: New Perspectives"*, the European Parliament issued a Resolution<sup>21</sup> in which it encourages the creation of a single labour market for researchers, the development of world-class research infrastructures, strengthening research institutions and sharing knowledge, the optimisation of research programmes and international cooperation in science in technology.

In a notice dated January 2009, the Council presented its *"2020 Vision for the European Research Area"*<sup>22</sup>. By 2020, the fifth freedom must be established across the ERA: free circulation of researchers, knowledge and technology. The ERA will create significant added value by fostering healthy scientific competition, whilst ensuring an appropriate level of cooperation and coordination<sup>23</sup>.

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<sup>17</sup> At page 25

<sup>18</sup> C(2008) 1329, Commission Recommendation on the management of intellectual property in knowledge transfer activities and Code of Practice for universities and other public research organisations, 10.04.2008

<sup>19</sup> Annex II

<sup>20</sup> Annex I

<sup>21</sup> European Parliament Resolution on the European Research Area: New Perspectives - Official Journal C 68 E/1 of 31.01.2008

<sup>22</sup> Conclusions of the Council on the definition of a "2020 vision for the European research area" - Official Journal C 25/1 of 31.01.2009

<sup>23</sup> At page 3



The objective of this report is to contribute to the implementation of the action points mentioned above, as well as to the wider debate, especially by providing supporting data and analyses, and by further elaborating the guidelines and good practices established by the Commission. It is intended that this information will, in particular, serve as an input to work being carried out by Member States in the framework of the *"Open Method of Coordination"* process.

## 2. Introduction

### 2.1. Contractors

On behalf of the European Commission (DG Research), the law firms **Mason Hayes+Curran** (Dublin) and **DLA Piper UK LLP** (Belgium) jointly carried out a three-year study on technology transfer and IPR regimes, the results of which are compiled in this report. Mr Louis Puts (DLA Piper) and Mr John Kettle (Mason Hayes+Curran) provided legal expert reviews of the study.

### 2.2. Countries covered

The following countries are covered: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, the Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom. The United States and Japan are also covered for comparative purposes. Bulgaria and Romania are outside the scope, as they were not Member States at the time the study was initiated.

### 2.3. Study components

This report aims to foster the development and use of European IP systems from a research policy perspective. It comprises both legal topics and issues in relation to training and awareness, resulting in four different subtasks.

### 2.3.1. Analysis of specific legal issues

As a first subtask of the study, seven specific research-related topics were investigated with a view to contributing to the improvement of the regulatory environment for R&D in Europe and the strengthening of the European Research Area.

These seven topics aimed to analyse the situation in the EU and its impact — both at a national and international level — and to make policy recommendations in order to promote the coherent development and adaptation of IPR regimes to the needs of the European research community. In each individual legal topic studied, it was attempted to balance, on the one hand, the advantages of Europe-wide uniformity with local particularities and, on the other hand, the needs and concerns of academic (public) versus (industrial) private organisations.

The following legal topics were analysed (in order). A concise summary of the findings for each of these topics is set forth in section 4 of this chapter, while the full reports comprise chapters 2 to 8.

- professors' privilege / ownership of publicly-funded research results (chapter 2);
- prior user rights (chapter 3);
- experimental use exception (chapter 4);
- publishing vs. patenting (chapter 5);
- legislation applicable to technological know-how (chapter 6);
- IPR co-ownership provisions (chapter 7); and
- IPR provisions applicable in the Community Framework Programmes (chapter 8).

Our analysis of these topics was corroborated by conducting a questionnaire survey of key users, associations and authorities, as well as by drafting two detailed case studies which could be used for policymaking and training purposes.

### 2.3.2. Analysis of awareness/training issues

As a second subtask of the study, extensive data were collected regarding the introduction of research-related IP issues— including technology transfer (TT) basics — in science, engineering and business school curricula across twenty-five Member States.

The main objectives of this subtask were, in particular, to identify the main types of IPR/TT awareness and training activities actually available, including details such

as their nature (stand-alone courses, simple inclusion of IPR/TT examples or case studies in more general courses, once-off seminars etc.), their duration (number of hours), whether or not they are mandatory for all students and (if not) the percentage of students concerned, the presence or absence of a final examination, etc.

The findings of this subtask have been summarised in section 4.8 of this chapter and are set out in full at chapter 9.

### 2.3.3. Benchmarking of national IP/TT systems

The objective of this task is to identify the most salient features of the IP and technology transfer systems which are relevant to organisations involved in R&D and technology transfer.

This resulted in a set of "national summaries" (one for each Member State within the scope of the study, together with the US and Japan), that highlight the key features of which technology transfer officers from different countries need to be aware. These national summaries are available on the accompanying website.

### 2.3.4. Dissemination

A fourth subtask of the study required the dissemination of the results of the study.

In order to promote the dissemination of the results of the study, and in order to encourage feedback during the finalisation process of each report, a web (internet) portal was set up and maintained at *www.eutechnologytransfer.eu* since March 2007. This website includes each individual element of the study, and, in particular, the set of national summaries together with a "*compare tool*" which can be used to easily compare the legal regimes of different Member States within the scope of this study, the United States and Japan.

## 3. Methodology

### 3.1. Desktop research

The initial source of information related to the legal topics was extensive desktop research for existing materials and studies. To the extent possible, existing reports and studies were consulted and analysed.

### 3.2. Collection of raw data

As not all legal topics covered issues that have been studied in detail before, steps were taken to independently collect new data. This involved the collection of raw data relating to the legal position in each of the countries within the scope of the study in respect of each of the legal topics. These raw data were collected in the initial stages of the study and updated at the end of the study. These raw data were used in the preparation of the reports on each of the legal topics.

For assessing the awareness and the basic skills of the research community regarding IP and technology transfer, we first gathered a list of relevant academic staff-members (preferably deans or vice-deans, but also other academic staff) and their contact information. These contact details were then used to conduct the actual interviews. Eventually, 479 faculties of 223 institutions were interviewed by telephone, but in several cases also by completing a questionnaire by email. The interviews were distributed across all EU Member States within the scope of the study, and across the four target disciplines considered (medicine, chemistry, engineering and business). The raw data obtained from these interviews were then used as inputs for our statistical analysis.

### 3.3. Validation workshops

During the course of the study, draft reports on each legal topic have been validated with the input of experts during the course of validation workshops arranged by the Commission. The comments and feedback received during the workshops and subsequent to them (in correspondence with some of the attendees who volunteered to input further into the study) were then used to amend the individual reports over the period of the study.

The validation workshops were conducted once a year, covered each topic of the study, and were held with stakeholders and representatives from public authorities, industry and national administrations, in conjunction with the Commission. The draft conclusions and recommendations of the legal topics studied were discussed with, and reviewed by, the participants. The views expressed at these validation workshops were reviewed and considered and, where appropriate, changes were made based on the comments and suggestions of the participants as noted in each of the reports.

### 3.4. Questionnaires

In order to assist in the assessment of the impact of the respective regimes, including the collection of new raw data and as part of the validation of our findings, a questionnaire was prepared and sent to over one hundred stakeholders such as key users, associations and authorities with a balance between countries, and between academic and industrial users. The responses to this questionnaire are summarised in each report.

### 3.5. Website

As noted above in respect of the dissemination activities, the website *www.eutechnologytransfer.eu* was developed in order to disseminate our draft reports, to provide access to the study materials during the course of the study including, for example, the national summaries and to obtain feedback from users accessing the website. Valuable feedback was received through the website and has been incorporated in the study.

## 4. Specific legal issues

### 4.1. Professors' privilege / ownership of publicly-funded research results

Chapter 2 of this report discusses the topic of "*professors' privilege*", which is the concept that the results of publicly-funded research created or developed by researchers (professors) are owned by that researcher and not by the institution where the research is carried out.

Since the adoption of the US Bayh-Dole Act in 1980, there has been a general trend to commercialise the results of publicly funded research. This has led to public research institutions (PROs) and higher education institutions (HEIs) being given the task of exploiting publicly funded research results. In turn, this trend has been credited with a dramatic increase in the number of technology transfer offices

(TTOs) worldwide which implement this task on behalf of PROs and HEIs<sup>24</sup>. One key issue common to all jurisdictions is the ownership/exploitation of the IPR in the research results. There has been a distinct move away from professors' privilege towards various systems of institutional ownership (*i.e.*, that results of publicly-funded research are owned by the institution and not the researcher personally).

The results of our survey indicate that there are substantial differences between the various systems of IP ownership applied in the Member States of the EU and, even within Member States, between specific IPRs. Despite the clear trend to move to institutional ownership, Italy and Sweden currently maintain their professors' privilege systems, albeit they are clearly different from each other. The other Member States operate various systems of institutional ownership, which are also substantially different from each other, both on the fundamental issues (what rights vest in the PRO/HEI and how the rights vest in the PRO/HEI) and on the issue of how/if researchers should be compensated for transferring the IP to the PRO/HEI.

As a large number of issues need to be addressed by TTOs in dealing with the transfer of IP in research results to private bodies, the UK, Denmark and Ireland have issued guidance on these issues. These issues include the right to remuneration, taxation implications of IP transfer, and march-in rights for failure to exploit, to name just three.

It also appears from the responses to our survey that institutions in Member States with responsibility for granting public funds for research make the grant subject to conditions which include restrictions on the use of the IP resulting from the research. This may affect how IP from publicly-funded research is applied across the EU.

A large number of disparate IPR ownership systems are in operation in the EU, relating not only to ownership of research results, but also to the IPR regimes in place. Below them sit layers of subsidiary hard law and soft law, including grant policies and university/HEI/PRO policies. The systems are also unduly focused on inventions to the detriment of any value that may arise in respect of other IPR especially in the context of publicly funded research. In our view, this variance is not

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<sup>24</sup> Statement to the U.S. Senate Committee on the Judiciary, by AUTM on the role of federally-funded research in the patent system (including a review of the impact of the Bayh-Dole Act) available at [www.autm.net/aboutTT/SenJudCommStatement\\_102407.pdf](http://www.autm.net/aboutTT/SenJudCommStatement_102407.pdf), citing examples such a rise in University-generated patents from 495 in 1980 to 3278 in 2005, and the forming of more than 5000 companies around university research.

conducive to achieving greater commercialisation of research and it is difficult to escape the conclusion that such asymmetry is at least a potential barrier to research, particularly in its impact on cross-border research.

There is little or no empirical evidence proving that professors' privilege results in better technology transfer to industry, and most evidence is in fact to the contrary. This view is not held by all stakeholders, and the privilege is seen by some as an attractive feature of their legal system, not to be removed without potentially damaging their existing systems. In the absence of other reforms, abolition of professors' privilege alone is unlikely to benefit technology transfer or remove obstacles from cross-border research in the EU. However, taken as part of an overall policy of commercialisation of publicly-funded research, institutional ownership is, in our view, preferable. However, this issue does not exist in a vacuum, and other factors need to be taken into account as well, such as professional IP management, knowledge transfer experts, etc.

While other reports have concluded that no further action is required, we recommend that **harmonisation of IP ownership** be considered. However, more data collection and statistical analysis is needed. Accordingly, using the so-called "*Open Method of Co-ordination*", the introduction of a framework for European IPR ownership systems should be considered and adopted. It should not be overly restrictive of parties' freedom to agree their own terms. Harmonisation measures should not go beyond what is necessary to achieve a common IPR ownership framework. For example, it may not be necessary for each Member States employment laws to deal with employee remuneration for inventions in an identical way.

Furthermore, the merits of a **harmonised approach to remuneration** should be examined. Remuneration is an element of both employment law and IPRs and harmonisation of both these areas has been one of the EU's successes to date. However, the administrative burden (both time and cost) of any such remuneration scheme needs to be considered. Furthermore, it is unclear whether remuneration of researchers is an area which requires harmonisation and it may best be addressed at national level.

Further study should be carried out on the impact of grant regimes, but a prohibition on national territorial restrictions on IPR under grant agreements should be considered (except perhaps in the limited case of use for stimulating economic activity in economically disadvantaged regions). We recommend that Member States which have not already done so, should prepare and publish non-binding codes and

guidance in relation to the IPR issues in technology transfer. In our view, developing and expanding EU-level codes/guidelines would also assist in this process. Model agreements for research should be developed at national level, where these do not already exist.

## 4.2. Prior user rights

A "*prior user right*" for patents is the right of an inventor to use an invention he made, but that is subsequently patented by another person. Prior user rights act as a personal defence against the second inventor and do not invalidate the patent rights of the second inventor.

Our analysis, set out in chapter 3 of this report, shows that prior user rights for **patents** are generally recognised in all Member States, with the exception of Cyprus. They are almost unanimously recognised in the EU as being just and desirable on the grounds of both fairness and efficiency. In the United States, however, prior user rights are regarded as both less desirable (as they are perceived to be an assault on the patent owner's exclusive rights), and less necessary (due to the "first-to-invent" patent system and the possibility of "interference proceedings").

While the qualification criteria for prior user rights seem, at first glance, to be similar across Member States, a more detailed review of the criteria reveals several legal differences across the Member States. In particular, the laws of Belgium, France and Luxembourg accept prior user rights for inventions that are only *possessed* (or even only *conceived of*) and have not yet been actually used, while all other Member States require some type of actual use. Nevertheless, little evidence exists that indicates that prior user rights have a profound practical impact or trigger significant litigation.

As regards **utility models** (*i.e.*, a lower cost, lower threshold, form of patent protection) it was found that, where they are available, their treatment is generally similar or identical to the treatment of patents. Accordingly, prior user rights of utility models follow a legal regime similar to the legal regime applicable to prior user rights in patent law. In light of the limited impact of prior user rights on patents and the reduced availability across Member States, we found that prior user rights for utility models are not a major practical concern at this time, despite the fact that the limitations on the rights of the prior user are currently imprecise and vague.



Finally, also as regards prior user rights for **registered designs**, it was found that several differences exist in the qualification criteria, extent and effects of those prior user rights. However, the level and impact of these differences is relatively minor compared to patents. A material set of differences seems to exist between the Benelux countries and the other Member States.

A limited amount of harmonisation may prove useful. We recommend that discussions are initiated with Cyprus to introduce prior user rights. We also recommend the harmonisation of prior user rights for registered designs, as several Member States do not currently recognise these. However, the need to harmonise the implementation details of prior user rights across Member States should not receive high priority, due to their seemingly limited practical impact.

### 4.3. The experimental use exception

Chapter 4 considers the "*experimental use exception*" (also known as the "*research exception*" or "*research defence*"), which allows third parties to use a protected invention or work for experimental purposes without the consent of the right holder.

The responses which we received from our National Correspondents indicate that there are substantial differences in the national laws of the Member States on this matter. With some exceptions, national laws do not appear to show a clear consistency regarding the application of the exception within different categories of IPRs and across the categories of IPRs.

This can give rise to a level of uncertainty on the applicability of the exception, which may present difficulties for research and investment. It could operate to hinder the effective management of research budgets (particularly for cross-border research projects) and hinder the ability to accurately predict in advance the licence fees which will be payable to rights holders in a given research project.

The existence of dissimilar regimes may also incentivise PROs and private entities to carry out their research on a national basis in Member States with favourable regimes (a type of research-based forum shopping). This may be preferable to some PROs and researchers rather than risking IPR infringement in another Member State.

A contrary argument could be made to the effect that, if this was the case, research might only be carried out in locations where a low number of patents are granted. However, there may be other relevant factors to be considered.

Further, the lack of a common European approach to the experimental exception is not simply theoretical, but can be problematic for borderline cases such as research tools and clinical trials, both of which are key to innovation and research. Research tools are important since they can significantly affect the cost of doing research but a broad experimental use exception could deprive them of any real value at all.

As regards clinical trials, while there has been some case law on this topic — particularly in the superior courts of Germany, the UK, France and the Netherlands — the judgments understandably turn on interpretation of the relevant national law (usually, but not always, patent law). As a result of the existence of different national laws, and differing judicial interpretations of those laws, there is no harmonised or uniform European Union view of the exception as it applies to clinical trials, although significant similarities can be seen.

There have been some surveys conducted, notably by the OECD, in relation to the impact of different regimes. Some users have expressed dissatisfaction with the current system. However, there does not appear to be, as yet, evidence that disparities between Member States' laws are having a significant impact. On the other hand, there is no evidence that the disparity is acting as a barrier to the initiation of research across the EU, or in certain Member States.

The **Community patent**, if introduced, should contain an experimental use exception broadly in line with the Community Patent Convention. Any measure of harmonisation of patent laws in the EU should similarly contain such a provision, so as to harmonise Member State laws on this point and consideration should be given to including a non-exhaustive list of permitted acts.

In relation to **patented research tools**, guidelines should be considered and prepared by the Commission in relation to EU-funded projects, and the same guidelines should be adopted by the Member States in respect of the licensing of patented research tools. However, further evidence of an adverse impact is required before mandatory licensing of patented research tools should be considered (as introduced in Switzerland).

For the moment and in light of the implementation of the regulatory review exception into European law, there does not appear to be an immediate requirement to

clarify the experimental use exception in patent law by legislative amendment in respect of clinical trials. This situation could change with future judgments of the courts of the Member States or better reporting of existing decisions.

There does appear to be the potential for conflict between gene sequence patenting and plant breeders' rights but as yet this issue does not appear to have had an impact in the EU. However, we recommend that an appropriate exception is included in respect of the Community patent and in any harmonisation measures.

### 4.4. Publishing vs. patenting

Chapter 5 of this report assesses the impact of scientific publications and patents on the diffusion of scientific knowledge. While both publishing and patenting disseminate knowledge, they differ fundamentally with respect to the creation of exclusive rights, their extent, duration, cost, and geographical scope of protection. The "*publishing vs. patenting*" question therefore involves a refined, multi-layered answer.

As regards the **speed of dissemination**, it was found that patent law's requirement of absolute novelty forces researchers to delay publication until the patent application has been submitted. While empirical evidence suggests that the publication delay caused by patent submissions is generally not significant, the delay is nevertheless seen as an important issue in some scientific areas. This was also reflected in our questionnaire survey, where correspondents were divided on the subject of whether the publication delays were problematic in practice.

This observation raises the controversial question of whether it would be advisable to introduce a "**general grace period**" in Europe (already adopted by Estonia), whereby the disclosure of an invention before the submission of the patent application does not destroy the novelty of the invention. Such a general grace period would have the advantage of abolishing the publication delays caused by patenting, and at the same time providing a safety net for inadvertent disclosures. It would, however, have the disadvantage of decreasing legal certainty. Despite the reduced legal certainty, we think that a grace period would be useful for cross-border research, provided its conditions are substantially harmonised throughout countries within and outside the EU.

As regards the **quality of information**, significant differences were found between publishing and patenting. While patent specifications are legally required to provide

a level of information that allows a skilled person to reproduce the inventions and the patent claims, the wording used in patents is highly formal, which may cause difficulties for scientific researchers. Peer reviewed scientific publications, on the other hand, tend to provide more information on the invention in order to facilitate cumulative further research.

With respect to the **quantity of research**, some studies suggest that patenting has a *negative* impact on the amount of scientific publications undertaken by researchers. However, the empirical evidence in this regard is inconclusive, as other studies suggest that patenting has a *positive* impact on the amount of publications generated by academic researchers.

Both patents and scientific publications impose **barriers to using the information**. Although patent specifications are published eighteen months after submission, this information cannot be used lawfully without a license before the expiry of the patent. Furthermore, the patent system may block research when basic knowledge is patented, which is facilitated by the increasingly blurred boundaries between basic and applied science. In order to solve this bottleneck, we think it may be useful to ensure that there is a consistent application of the experimental use exception amongst Member States (as further developed in the chapter on the experimental use exception).

Scientific publishing, on the other hand, creates an analogous problem, as the access to scientific journals is controlled by publishing companies, and subscription prices have become increasingly expensive over the last thirty years. The advent of the Internet has, however, given rise to a new publishing model ("*open access*"), which encourages authors and publishers to disseminate scientific knowledge for free. This model has become increasingly popular, although authors still question the long-term viability and reliability of the model. We recommend that this model should be further promoted, both at the European, national and institutional level.

As a conclusion, we are of the opinion that publishing and patenting should be considered as complementary tools with different purposes. Nevertheless, it should be recognised that the publishing activity is inherently more concerned with the dissemination of knowledge, while this is not the primary goal — rather a by-product — of the patenting activity.

#### 4.5. Legislation applicable to technological know-how

Chapter 6 considers the protection afforded to technological know-how in the EU.

Technological know-how is not a term that is often used in the wider context of the protection of confidential information and trade secrets. The scope of protection of technological know-how depends on the extent to which it falls within the specific protection afforded by Member States, either in the context of specific regulations regarding, for example, trade secrets or in the context of unfair competition.

Chapter 6 also considers the extent to which "technological know-how" (the acquisition, protection and exploitation of technology) might be treated differently to "know-how" (*i.e.*, as a subset of "know-how") as such in the Member States.

The National Correspondents have reported divergences between the Member States' laws on these issues.

First, only Austria and Denmark appear to potentially treat technological know-how differently from know-how (in favour of protection in the case of Austria, and against protection in the case of Denmark in respect of "scientific work").

Secondly, most Member States protect technological know-how to the extent that it falls within the local protection of trade secrets, confidential information and business secrets or falls within the ambit of unfair competition laws. These local protections vary by Member State.

Thirdly, no relevant statutory protection was reported for Cyprus or Malta.

Together, these differences could have an impact on cross-border research and generally in the context of intra-EU trade. However, it appears that it is legally recognised practice across the EU for parties to enter into non-disclosure or confidentiality agreements before the disclosure of confidential information such as confidential technological know-how or know-how.

There have been no surveys reported in relation to the impact of different regimes in the EU. Therefore, there does not appear to be, as yet, evidence that disparities between Member States' laws are having a significant practical impact and the common use of non-disclosure agreements may redress any imbalances in Member States' domestic laws. However, these reasons alone do not mean that a common framework for the protection of trade secrets, know-how and technological know-how should not be considered and implemented in the EU.

#### 4.6. IPR co-ownership provisions

Chapter 7 studies the "default" regime which applies to the co-ownership (also called the *"joint ownership"*) of IPR in the absence of specific contractual arrangements. Co-ownership of IPR will often arise in a research context where different legal and natural persons collaborate towards a common goal, but may also arise on a secondary level, when co-owned IPR are transferred from one of the co-owners to third parties (e.g., in case of a sale, or due to the death or re-organisation of one of the co-owners).

With the exception of Denmark, a default regime applies in all EU Member States. Nevertheless, this default regime was found to be strikingly different, on the one hand, as between Member States and, on the other hand, depending on the different types of IPR.

Numerous examples were found which illustrate that Member States clearly take different approaches to similar questions – not only in the field of patent law, but also for the other types of IPR. In fact, based on the data available to us, it is not common to see even two Member States for which the default regimes give approximately the same answers to the various questions of co-ownership for the IP types considered.

Each default regime also creates legal uncertainty of itself, even when the cross-border issues are not taken into account. For example, the laws of several Member States do not provide an answer to all questions triggered by co-ownership, and instead rely on case law, or on general legal principles, to clarify the default regimes. Such reliance on general legislation creates its own share of problems, because the general legal principles rarely take into account the specific issues of intangibles such as IPR. This complexity is further augmented by the fact that relatively few legal cases exist in Member States regarding the subject of co-ownership of IPR.

This creates a considerable amount of legal complexity and uncertainty in a cross-border research context, where several legal regimes may (partially) apply at once. Legal doctrine and National Correspondents therefore unanimously recommend parties to enter into a contract to carefully delineate each party's responsibility, input and ownership, and to anticipate the inherent issues associated with joint ownership, as identified in chapter 7. When no contract is in place, parties will be exposed to a legal labyrinth when a dispute arises – particularly when international elements exist.

Considering these difficulties and uncertainties, we are of the opinion that a harmonised approach for an EU-wide default regime would be useful, for all types of IPR relevant in a research context. However, we do not think that this harmonisation should receive priority, as no default regime – not even a harmonised one – can replace a contract between the co-owners, that takes into account the specific facts and relationship between the parties. A suggestion, put forward by one stakeholder, was for the Commission to develop a standard form "JOMA" (Joint Ownership Management Agreement) and this might be considered within the context of the *Open Method of Coordination* process.

### 4.7. IPR provisions applicable in the Community Framework Programmes

Chapter 8 considers the protection afforded by the IPR provisions applicable in the Framework Programmes ("FPs") of the European Community for research, technological development, and demonstration activities.

The current IPR provisions of the Seventh Framework Programme 2007 – 2013 ("FP7") have evolved, through previous versions in each successive FP, in response to the sometimes competing interests of encouraging participation in research and development, and ensuring that public funding is given only to those projects which allow maximum exploitation of project results.

EC funding requires protection of results capable of industrial or commercial application in return. In order to maximise the potential of EU funds obtained, results generated must be used, by means of either their industrial/commercial exploitation, or further research activities.

While it is necessary to ensure compliance with the highest accountability standards in the protection of IP, it is equally important that administrative burdens on undertakings, research centres and universities who participate in the FPs ("Participants") should be reduced to maximise quality, focused research.

It is important that the IPR provisions of the FPs are regarded favourably by Participants and future Participants, in order that companies and researchers are not deterred from participation in research and development activities. The Royal Swedish Academy of Engineering Sciences, the IVA, in its report on *The Seventh*

*European Framework Programme for Research and Technological Development from a Swedish Perspective*, stated that:

*"there needs to be a more favourable perception of participation in the FPs so that more companies and researchers will become involved ... There are potential benefits to highlight, such as clearly-defined IPR"*<sup>25</sup>.

A diverse range of researchers must feel competent to participate in EU programmes, including smaller institutions and those from newer Member States. Legal documents should not deter Participants due to their complexity. In parallel, simplification, and a possible reduction in the number of IPR provisions, should not result in an inferior level of contractual protection for the very significant spend that R&D involves.

Effective but simple IPR provisions are necessary in order to reconcile these competing interests. The IPR provisions must be flexible, coherent and rational. The extension of the duration of FP7 to seven years necessitated the introduction of sufficient flexibility to allow for any needs which could arise during its implementation to be addressed. The Preliminary Options from the Commission Services in relation to FP7 stated that:

*"the IPR provisions should be as "self-sustaining as possible", i.e. a project must be able to run effectively without (extensive) additional arrangements between the Participants"*.

While the IPR provisions have evolved over time with each FP, the aim of Chapter 8 is to examine the previous and current IPR provisions and their impact, and to identify any necessary measures to streamline further the current IPR provisions.

It appears from our analysis that the IPR provisions as currently drafted are operating as intended, and, have, in the main, been well received by Participants under FP7. The provisions on access rights and transfer of ownership have become less restrictive to Participants with the successive model contracts / general model grant agreements relating to each FP. Entitlements to access rights no longer appear to be as significant a deterrent to Participants in the FPs that they once were. Obligations of prior notice to the Commission for publication and for transfers of ownership

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<sup>25</sup> The Royal Swedish Academy of Engineering Sciences, the IVA, *"The Seventh European Framework Programme for Research and Technological Development from a Swedish Perspective"*, 2006, available at [www.iva.se](http://www.iva.se)



have been loosened. Obligations of prior notice to other Participants, for using or licensing foreground, have also been loosened.

In comparison to previous FPs, the IPR provisions of FP7 are less complex and less extensive. They afford more autonomy and flexibility to Participants involved in FP-funded projects.

We therefore recommend that they should be maintained in their present form. The default regime for joint ownership of foreground should be maintained. Guidelines on the application of the IPR provisions in the FPs should continue to be issued by the Commission in order to promote awareness and understanding of the issues involved. We further recommend that as the commercialisation of research results is the *raison d'être* of the FPs, the importance of use and dissemination should be emphasised through public awareness processes.

### 4.8. Awareness and training issues

Chapter 9 of this report presents the outcome of a survey conducted in 2007 and 2008 with respect to awareness and training activities on IPR/TT in higher education institutions throughout the European Union. It contains a detailed description of the methodology, an analysis of the gathered data and several conclusions.

479 faculties of 223 institutions were interviewed by telephone and email, distributed across all EU Member States and across the four target disciplines (medicine, chemistry, engineering and business). These interviews targeted undergraduate students, graduate students and PhD students.

The data gathered shows that almost 60% of the responding faculties do not provide any form of IPR/TT training for their students. In half of the faculties that do organise training on this subject, the training is not mandatory, and attendance rates are low. As a result, over 80% of students finish their academic career without ever being exposed to the basic principles of IP law. The results for PhD students are very similar: almost 60% of them do not have any IPR/TT-information at their disposal, and hardly any training available for PhD students was reported to be mandatory.

Having analysed the survey data per discipline, there is a strong indication that students in business schools are most likely to be educated about IPR/TT, followed by

engineering and chemistry students. Less than 20% of medical faculties offer such education to their students.

The survey results also differ geographically. Poland, Northern Europe and Ireland are the frontrunners in IPR/TT-education. The results for southern Europe are relatively weak, with only 26% of institutions providing some kind of training for their students.

Several conclusions can be drawn. First, it is clear that action is required to tackle the general lack of awareness among academic personnel and students about the importance of IPR/TT-education. Measures need to be taken to educate researchers about, at least, the basic principles of patent laws, copyright, trade marks, industrial designs, plant breeders' rights, design rights and semiconductor topographies. This lack of awareness was also reported by several interviewees, who declared that training was planned in the near future. The high number of faculties interested in implementing some kind of training in their curriculum suggests that stimulation efforts could prove to be successful. Further, efforts are required to create a level playing field across Europe and mitigate the substantial differences between Member States. Institutions may want to have a look at the measures taken by other institutions that do provide their (PhD) students with the facilities to efficiently protect and commercialise research.

## 5. General trends and conclusions

This section 5 provides a cross-topic overview of the general trends, observations and conclusions we identified throughout the study. Please note that each chapter of the study also offers separate, more detailed, conclusions for the topic covered.

### 5.1. Some uniformity, but only high-level

We found that, for most of the topics studied, there is generally a significant level of superficial or high-level uniformity between Member States' laws. There are clear examples of how Member States offer similar solutions to the same legal issues.

This uniformity is partially due to the common legal tradition between (civil and common law) Member States, the Treaties and Conventions (such as the Berne

Convention<sup>26</sup>, the Paris Convention<sup>27</sup>, TRIPS<sup>28</sup> and UPOV<sup>29</sup>) in the field of IPlaw at the international and European level, as well as the convergences triggered by membership of the European Union.

For example, unlike patents, the **experimental use exception** is harmonised in the EU in respect of registered designs following the EU Designs Directive (98/71/EC). Therefore — although there are some differences in the language used — the form followed by Member States is to provide an exception for *"acts done for experimental purposes"*.

For most topics and subtopics covered, it was in fact possible to subdivide Member States into one or more relatively homogeneous groups that have similar legal rules, at least from a high-level point of view.

For example, for the topic of **professors' privilege**, we could clearly identify two groups of countries. A first group of countries (consisting only of Sweden and Italy) adheres to the principle of professors' privilege, meaning that the researcher becomes the owner of the IPR that result from publicly-funded research. Conversely, a second group of Member States uses institutional ownership as the default ownership position. Within this second group, two subgroups were identified: a first subgroup of Member States that uses a system of pre-emption rights (the first owner is the employee, but the PRO/HEI is entitled to claim the invention), and a second subgroup where the first owner is automatically the employer.

It should be noted, however, that across the topics covered, there was one topic (the **co-ownership default regime**) where no homogenous groups of countries could be ascertained, at least not from a high level. For this topic, it was not possible to find a common *leitmotiv* across Member States. In fact, it was not even possible to find two Member States for which the default regimes give approximately the same answers to the various questions of co-ownership for the IP types considered. The default co-ownership regime was not only strikingly different between Member States, but also between the different types of IPR (patents, utility models, copyright, industrial design rights and trademarks).

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<sup>26</sup> Berne Convention for the Protection of Literary and Artistic Works, 1979

<sup>27</sup> Paris Convention for the Protection of Industrial Property, 1979

<sup>28</sup> Agreement on Trade Related Aspects of Intellectual Property Rights, 1994

<sup>29</sup> International Convention for the Protection of New Varieties of Plants, 1991

## 5.2. Exceptions to the rule

Despite the observation of high-level homogeneity among Member States for most topics covered, it was remarkable that one or more clear "exceptions to the rule" could be found — i.e. one or more Member States that uphold a significantly different position to the position held by the majority of Member States in relation to the topic considered. Interestingly, across the topics, no consistency was found as regards which Member States were substantially different in their approach. In other words, the configuration of the homogenous groups and "the odd Member State out" changed for each topic considered. Contrary to expectations, there was no clear division between common law and civil law countries.

For example, in our study of the **co-ownership default regime**, Denmark was reported to have no default regime at all, while all other Member States do have default — although highly divergent — regimes for most of their IPR. Denmark did not, however, stand out as adopting a different position to the majority of Member States for any of the other topics studied.

Similarly, our study of **prior user rights** found that every Member State recognises prior user rights, although the scope and legal consequences of this right vary considerably. Cyprus, however, does not recognise any prior user rights for patents. Nevertheless, for each of the other topics considered, Cyprus law was found to be more or less in line with other Member States.

As a third example, it can be pointed out that all Member States have an express statutory **experimental use exception** in respect of patents, with the single exception of Austria (which does not have an express statutory experimental use exception but such an exception may apply nonetheless). Among all other Member States that do recognise an experimental use exception, Belgium takes the anomalous position that the experimental use exception expressly permits both experimenting on *and* with the patented invention (which, as noted in Chapter 4, may not be compatible with TRIPS<sup>30</sup>).

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<sup>30</sup> Agreement on Trade Related Aspects of Intellectual Property Rights, signed at GATT in 1994 and administered by the *World Trade Organization* (WTO). The Agreement sets down minimum standards for many forms of IP regulation.

### 5.3. Significant divergences exist at a detailed level of analysis

Despite the existence of high-level similarities and relative homogeneity between Member States, significant divergences were found when the Member State laws were analysed at a detailed level. Such divergences could be found on various levels, for example, disparities in statutory wording or case law.

**Differences in statutory wording** – Throughout the study, we found numerous examples of slightly different wording for otherwise similar rules. It is not always clear whether such different wording actually leads to a different meaning in practice.

The most remarkable example of divergences in wording was found for the topic of **technological know-how**. While the Paris Convention for the Protection of Industrial Property and the TRIPS agreement have triggered a degree of uniformity, there is a wide discrepancy in the actual definition of the concept of technological know-how or 'know-how' more generally. The wording varied, for instance, from *"commercial, manufacturing and technological information"* (Czech Republic) to *"secret information and non-patented inventions"* (Italy), over *"economic, technical and organisational knowledge and experience"* (Hungary) to *"information"* (Lithuania) and *"information regarding a business"* in Sweden, etc.

**Differences in Member States' interpretation of national laws** – Although similarities can be drawn between the laws of some Member States, national courts can take different approaches to interpreting the national laws.

For example, although the statutory treatment of the **experimental use exception** is broadly similar in Germany and the United Kingdom, we found that German courts have taken a more liberal interpretation of the experimental use exception. In the absence of EU-wide harmonisation, Member States may have similar national laws but it is open to the national courts of those Member States to interpret those laws as they see fit.

### 5.4. Result: inherent legal complexity

From a legal perspective, even though Member States' laws often expose superficial similarities, it was found that the actual differences — even when seemingly small — create legal complexity. It appears that parties resort to contractual measures in order to avoid such complexities. There appears to be a common practice of "paper-

ing over the cracks" by putting contracts in place where there is uncertainty as to the legal position resulting from divergences in national laws.

For example, on the issues of the **default regime for IP co-ownership**, even when there are no cross-border issues, it seems that National Correspondents unanimously recommend parties to enter into a contract to carefully delineate each party's responsibility, input and ownership, and to anticipate the inherent issues associated with co-ownership. Such internal legal complexities of each Member State's default regime are then, of course, substantially increased when cross-border issues are factored in.

### 5.5. Limited practical impact?

Throughout the study, and in particular during the validation workshops and the results of our questionnaire survey, we found limited evidence that the differences in the legislation and the ensuing legal complexity have an actual, immediate and practical impact on cross-border research within the EU. This lack of reporting of a practical impact was acknowledged on multiple occasions by stakeholders at validation workshops.

For example, when asked for experience with **prior user rights** during the study's workshop held on 27 March 2007 with various stakeholders, this topic did not trigger considerable discussion or reactions amongst the workshop participants. Only one participant reported having real experience with prior user rights.

As another example, although several surveys have been conducted for the topic of the **experimental use exception** (notably by the OECD), there does not appear to be evidence that the disparities between the Member States laws are having a significant impact.

For those topics for which litigation could be a relevant source of legal information (professors' privilege, protection of know-how and prior user rights), it is remarkable that little or no evidence of litigation was found.

## 6. Recommendations

### 6.1. Harmonisation

As can be seen from the foregoing conclusions, there is a lack of uniformity in the laws applicable in the Member States regarding the legal topics reviewed in this report. In addition to our comments in the specific chapters of this report, it is difficult to escape the conclusion that this lack of uniformity and general divergences in Member States' laws may impede the development of a European Research Area by creating unnecessary obstacles to cross-border research such as:

- additional complexity and uncertainty in conducting cross-border research;
- unnecessary transaction costs and lack of transparency;<sup>31</sup>
- impeding the development of common technology transfer policies and guidelines;
- impeding the free movement of researchers and technology transfer professionals as they may not be familiar with the IP and TT laws of different Member States; and
- impeding the access of SMEs<sup>32</sup> to cross-border research due to a lack of resources to deal with the IP and TT issues.

In light of the lack of uniformity identified in the individual chapters on the legal topics covered by this report, the question arises whether it is recommended to initiate efforts to harmonise the legal topics covered by this report at a European level. We recommend harmonisation for many of the legal topics, recognising the need to increase legal certainty for all stakeholders and reduce the current obstacles of legal fragmentation and interpretation differences among Member States. As noted by Craig and De Burca<sup>33</sup>, highly regarded commentators on EU legal systems, the existence of barriers to intra-community trade created through the use of IPR requires:

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<sup>31</sup> See *Turning Science into Business, Patenting and Licensing at PROs*, OECD Publications, 2004, at page 11 and page 12

<sup>32</sup> Small and Medium Enterprises

<sup>33</sup> P. CRAIG and G. DE BURCA, *EU Law: Text, Cases and Materials*, 3<sup>rd</sup> ed, 2003, page 1119

*"legislative initiatives designed both to harmonise relevant national laws, and also more radically to shift the basic territorial unit for the purpose of intellectual property rights from the State to the EC itself".*

In respect of **professors' privilege**, **prior user rights**, legislation applicable to **technological know-how** and **IPR co-ownership provisions**, we have — to varying degrees — recommended that harmonisation measures be considered, although our report on prior user rights places no priority on this recommendation.

In respect of the **experimental use exception**, however, we recommend that, in the event of harmonisation of patent law generally (including, but not limited to, the Community patent), such harmonisation should similarly contain harmonising provisions on this point. This recommendation is also due to the fact that the experimental use exception is but one part or subset of patent law. Furthermore, there does not appear to be an immediate requirement to specifically harmonise the patent law in respect of clinical trials. In respect of other IPR than patents, harmonisation is recommended to remove the fragmentation in the approach to the experimental use exception which could impede cross-border research. This is also a recommendation in our report on **publishing vs. patenting**.

As noted above, we are of the opinion that certain harmonisation would indeed be welcome in order to foster cross-border research in the EU. Whilst certain gaps in Member States' laws have been identified in our study, none require or justify the intervention of the Commission. In our view, it is only in the specific context of the possibly detrimental effects on cross-border research that the issue becomes one for the Commission to consider and review. In the current state of play, it is difficult, burdensome and costly to manage the legal discrepancies between Member States, even when only a limited number of Member States are involved. In particular for SMEs and universities — that may not have access to in-house lawyers across Europe or for which the cost of external counsel may be prohibitive — we think that harmonisation on some level would be desirable.

Indeed, it was acknowledged in January, 2009, by ProTon Europe that:



*"for a common market to be effective, it must have a single legal system for ownership, protection and management of intellectual property"*<sup>34</sup>

The desirability of harmonising measures was also recognised by participants in the validation workshops on the topic of professors' privilege. Some participants noted that harmonisation would create a very useful "default rule" which parties would be free to contract out of if they felt it desirable. It was also felt that predictable common legal rules would afford a degree of certainty to industry players.

Some participants, at the validation workshop on the topic of IPR co-ownership provisions, felt that the harmonisation of co-ownership provisions was a priority. It was noted that, for many small companies, checking the relevant legal provisions with local lawyers in different Member States was an inhibiting cost-factor<sup>35</sup>. However, other Participants considered harmonisation of IPR co-ownership provisions to be either "not critical at the moment", "not necessary" or "not a priority".

A number of the stakeholders interviewed during the course of our surveys recommended, in relation to the experimental use exception, the wholesale harmonisation of the area. Harmonisation was also favoured by stakeholders interviewed in relation to prior user rights and professors' privilege.

However, an ongoing theme throughout the course of the stakeholder workshops was whether there existed concrete evidence that divergences in legal regimes across Member States *actually* created practical problems in the field. For the most part, no concrete examples of problems caused were reported by participants at stakeholder meetings. Similarly, the surveys carried out through questionnaires with interested stakeholders did not furnish any practical examples of a non-trivial practical impact caused by the legal complexity and the divergences in the laws of the Member States. Thus, there does not appear to be a call to provide the "perfect legal solution" to many of the legal topics studied in order to eliminate any and all national variations in each area. It follows that a proportional harmonisation of the legal framework *only to a certain extent* may be realistic. Some level of harmonisation could be achieved by way of a lighter regulatory touch, *e.g.* by means of soft regulation and the drafting of guidelines and codes of conduct. Such guidelines will

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<sup>34</sup> Proton Europe - Cardiff statement on Innovation through Co-operation, the text of which is available at [http://www.prlog.org/10177214\\_proton\\_europ\\_cardiff\\_statement\\_on\\_innovation\\_through\\_co-operation.html](http://www.prlog.org/10177214_proton_europ_cardiff_statement_on_innovation_through_co-operation.html)

<sup>35</sup> Validation Workshop 15 January 2009, Brussels

help Member States review, and, where appropriate, adapt, their national regimes governing the ownership and exploitation of IP which is the result of publicly-funded research and promote technology transfer to industry. We return to this point in the next section below.

## 6.2. Open Method of Coordination

We are conscious of two issues in particular: (i) that the level of direct and measurable impact of the legal topics discussed in this report is relatively low; and (ii) that the study is conducted in the context of the *Open Method of Coordination* process.

The *Open Method of Coordination* process, as introduced by the European Council of Lisbon in 2000<sup>36</sup>, includes the identification of areas where Community initiatives could reinforce national actions and the development of coordinated initiatives on issues of common interest, such as the fixing of European guidelines and the translation of such guidelines into national and regional policies.

On that basis, the recommendations for harmonisation set forth in this report may, in the alternative, be implemented using the *Open Method of Coordination* process by, for example, the issuing of guidelines and information. Furthermore, we have recommended specific measures to be taken within the context of the *Open Method of Coordination* to facilitate the coordination and development of the legal topics reviewed in this report.

In the context of **professors' privilege**, our report suggests the preparation and development of non-binding codes and guidance in relation to the IPR issues arising in technology transfer and generally in relation to IP issues arising in PROs and HEIs. This process has already commenced with the Commission Recommendation<sup>37</sup> issued on 10 April 2008, in which it provides Member

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<sup>36</sup> At a meeting of the European Council in Lisbon (March 2000) OMC was defined as an instrument. Depending on the areas concerned, the OMC involves so-called "soft law" measures which are binding on the Member States in varying degrees but which never take the form of directives, regulations or decisions.

<sup>37</sup> C(2008)1329, Commission Recommendation on the management of intellectual property in knowledge transfer activities and Code of Practice for universities and other public research organisations, 10 April 2008, see [ec.europa.eu/invest-in-research/pdf/ip\\_recommendation\\_en.pdf](http://ec.europa.eu/invest-in-research/pdf/ip_recommendation_en.pdf)

States with policy guidelines for the development or updating of national guidelines and frameworks; identifies practices of public authorities that facilitate the management of IP in knowledge transfer activities by universities and other PROs<sup>38</sup>; and provides PROs with a Code of Practice, in order to improve the way they manage IP and knowledge transfer.<sup>39</sup> In the survey of interested stakeholders, 73% of respondents either agreed or strongly agreed that non-binding codes of conduct regarding IPR ownership, in Member States that do not already have them, would be useful.

In the context of **prior user rights**, we recommend that discussions are initiated with Cyprus to introduce prior user rights.

In the context of the **experimental use exception**, we suggest that guidelines should be considered and prepared in relation to the licensing of patented research tools arising from publicly funded projects which would inform Member States' policies on this topic (bearing in mind the requirements of TRIPS on this point).

In the context of **patenting vs. publishing**, we recommend the promotion of the use and adoption of "open access" scientific publishing models. Furthermore, we recommend the consideration of the introduction of a common grace period at international level.

It was recommended by Participants at the validation workshop on the topic of **IPR co-ownership provisions**<sup>40</sup> that a set of EU-wide principles of good practice for SMEs and research organisations would be useful guidance in drafting contracts dealing with co-ownership of IP and a far more feasible option than legislative harmonisation of the area.

A common set of principles set out in guidelines and similar measures introduced at EU-level through the *Open Method of Coordination* process may, to some extent, align the diversity between Member States' national applicable laws and provide for some degree of harmonisation.

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<sup>38</sup> Annex II

<sup>39</sup> Annex I

<sup>40</sup> See the comments above at section 4.6 in relation to the development of a JOMA.

## Chapter 2

# Professors' privilege

"In some Member States (such as Sweden), the results of publicly-funded R&D may be owned by the researchers/professors, whereas in most other countries the results belong to the institution (university or public research organisations (PRO)) in which they were developed. While there is a global trend to move to the *"institutional ownership"* regime, the few Member States having a professors' privilege appear to be satisfied with it, in the absence of decisive evidence suggesting the need for a change in their regime.

Accordingly, the objective of this chapter is to investigate the actual pros and cons of the existing regimes (based on their actual impact), in the perspective of promoting the exploitation of publicly-funded R&D results, and also in the perspective of cross-border R&D collaborations or technology transfer activities (between countries having different regimes)."

## 1. Types of intellectual property covered

This chapter discusses professors' privilege with respect to various IPR including, where appropriate, patents, copyright, and industrial designs.

Due to the nature of the subject matter of the chapter and the responses received, there is an emphasis on patents, a matter which is discussed later in this chapter. Furthermore, there have been some EU harmonisation measures in this area. These harmonisation measures do not implement professors' privilege.

Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs harmonises copyright protection of computer programs. Article 2(3) provides that where a computer program is created by an employee in the execution of his duties or following the instructions given by his employer, the employer exclusively shall be entitled to exercise all economic rights in the program so created, unless otherwise provided by contract.

A similar provision is contained in Council Regulation (EC) No 6/2002 of 12 December 2001 on Community designs. Article 14(3) of the Regulation on Community designs provides that where a design is developed by an employee in the execution of his duties or following the instructions given by his employer, the right to a Community design vests in the employer, unless otherwise agreed or specified under national law. This last proviso means that any national law to the contrary will prevail over the Regulation on Community designs but in the absence of a specific national law or agreement to the contrary, Article 14(3) will act as the default ownership provision.

## 2. Structure of this chapter

In section 3, we outline what is meant by the concept of professors' privilege; we identify the key issues involved and present general characteristics of the right where it exists.

In section 4, we examine the current situation in the EU, in systems that either have a professors' privilege or an institutional ownership model (which vary).

In section 5, we discuss the current situation in the US and Japan.

Section 6 looks at the practical impact of the different approaches on national and cross-border research and the results of our survey of relevant stakeholders and the feedback received at the workshop on this topic.

In section 7, we include an analysis of our findings and conclusions.

Finally, in section 8, we set out our recommendations.

### 3. The concept of professors' privilege

#### 3.1. Introduction

*"Professors' privilege"* is the concept that the results of publicly-funded research created or developed by researchers (professors) are owned by that researcher and not the institution where the research is carried out.

Since the adoption of the Bayh-Dole Act by the United States in 1980, and its subsequent success, there has been a general trend internationally to commercialise the results of publicly funded research. This has led to PROs and HEIs being given the task of exploiting publicly funded research results. In turn, this trend has resulted in a dramatic increase in the number of technology transfer offices worldwide which implement this task on behalf of PROs and HEIs.

There are a large number of issues involved in achieving this result. How and in what manner should TTOs be structured? How are links with industry best achieved? What is the best manner in which to incentivise technology transfer?<sup>41</sup>

One element of facilitating technology transfer, and which is common to all jurisdictions, is the ownership of the IP in the research results. In light of this, there has been a distinct move away from professors' privilege towards various systems of institutional ownership in order to facilitate the commercialisation of research results.

##### 3.1.1. Overview and general trends

The IP systems in the EU currently vary between Member States which maintain a system of professors' privilege (inventor ownership) and those which maintain a system of institutional ownership.

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<sup>41</sup> For an overview of some of these issues and the structure of TTOs in the EU, see *Improving institutions for the transfer of technology from science to enterprises*, Expert Group Report BEST PROJECT ITTE 1.11/2002, European Commission 2004

In Member States which apply the same system, it is often the case that only the fundamental principles of the system are the same as in many cases there are significant differences in the ownership and exploitation (technology transfer) of IP from publicly funded research results.

A number of Member States have also enacted specific public research acts addressing issues arising from such research such as IP ownership (*e.g.*, Austria, Denmark, Slovak Republic). In other countries, the principle of institutional ownership arises due to the default IP ownership provisions in that Member State (UK, Ireland, Cyprus) rather than positive legislative action leading towards institutional ownership.

Fig 1. Overview of Ownership Systems in the EU

<b>Professors' privilege:</b> Sweden, Italy
<b>Institutional ownership:</b> Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland <sup>42</sup> , France, Greece, Hungary, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovak Republic, Spain, UK
<b>Public Research Acts:</b> Austria, Belgium, Czech Republic, Denmark, Finland, Portugal, Slovak Republic, Slovenia, Germany

The general trend in the EU is characterised by a movement towards institutional ownership and facilitating technology transfer. In some Member States this has resulted in a shift from professors' privilege to institutional ownership. Notably, in one Member State there has been a shift from institutional ownership to professors' privilege.

Fig 2. Trends in EU Countries 2000-2009

<b>To professors' privilege:</b>	Italy (2001).
<b>From professors' privilege:</b>	Denmark (2000), Germany (2002), Finland (2007) <sup>43</sup> .

<sup>42</sup> Where there is a recently enacted exception for contract-based research, and is limited to patents only.

### 3.1.2. Issues

- **Professors' privilege / institutional ownership** – At the highest level, there is no consistency across the EU in the system of IP ownership applied to the results of publicly funded research. This is outlined in greater detail below.
- **Public research acts** – Some countries have implemented specific acts relating to the ownership of publicly-funded research results. Generally, these acts relate to inventions only. The ownership principles for the remainder of the different types of IPR are left to general labour or IP laws to determine.
- **Remuneration of researchers** – The researcher's right to remuneration varies considerably between Member States and so too the concomitant obligations placed on researchers and on PROs/HEIs.
- **(National) codes of practice** – Some Member States have applied general codes rather than legislation in respect of the development of institutional and collaborative ownership. This is the case, for example, in Ireland, UK and Denmark.
- **Grant systems** – Almost all Member States operate a system of national funding (usually via different agencies with prescribed focus areas) which attach conditions to the results of publicly funded research. These conditions can have national interests at stake and can prescribe onerous conditions to which the grantee must adhere. The grants systems enable Member States to indirectly implement different IP provisions than exist under that Member State's domestic laws. While the laws on State Aid can temper the effect of such grant regimes in some cases, their presence alone in our view may add to the complexity of, and disparity in, the commercialisation of research results.
- **University Systems** – The fact that universities can have their own policies and internal rules about IPR ownership and exploitation means that there is a subsidiary layer of complexity to this topic that is not immediately apparent.

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<sup>43</sup> But the Finnish system is not usually deemed to apply to pure researchers, and therefore assignments to the University are for that reason normally required in Finland. In Finland also, the position on IPR in databases is unclear, and tends to be regulated by contract.



### 3.2. Typical characteristics

The following is an overview of the typical characteristics of professors' privilege and institutional ownership regimes in the EU. A more detailed discussion of which characteristics prevail in the Member States is set out in section 4.

#### 3.2.1. Professors' privilege

As noted above, both Italy and Sweden have professors' privilege. However, beyond the general principle that it is the researcher who owns the rights to publicly funded research results, there are few similarities. A few fundamental distinctions may be drawn.

- **Scope** – The scope of professors' privilege in Italy is arguably wider than in Sweden. In Italy, the privilege applies to all employees of a PRO/HEI and potentially all consultants and third parties involved in the research whereas in Sweden it applies to teachers, postgraduate students and doctoral candidates. In Sweden, professors' privilege applies to copyright (by custom) and Swedish law does not have any further IP ownership rules. In Italy, professors' privilege does not extend to copyright, and other than for inventions, IP ownership is as agreed between the parties.
- **Compensation** – In Italy, the PRO/HEI is entitled to a portion of the profits deriving from the exploitation of the invention. In Sweden, the PRO/HEI is not entitled to any such profits.
- **Patent protection** – In Italy there is a specific obligation on the researcher to patent the invention. In Sweden, the researcher is under no such obligation.
- **Derogations** – In Italy, if the researcher does not industrially exploit the invention within 5 years, the HEI/PRO is entitled to a royalty free, non-exclusive right to exploit the invention; and if the research is wholly or partly privately financed then the PRO/HEI owns the invention. There are no equivalent provisions under Swedish law.

#### 3.2.2. Institutional ownership

At a high level of abstraction, there are two main systems of institutional ownership in the EU, a system of pre-emption rights where the first owner is the employee but the PRO/HEI is entitled to claim the invention and a system of automatic ownership where the first owner is automatically the employer not the researcher.

- **Pre-emption rights** – Under this principle the researcher is the first owner of the invention but the PRO or HEI has the right to "claim" the invention most usually within a specified period. In the event that the invention is not claimed within the specified period then generally the right to the invention reverts to the inventor (employee). In addition, in most of these pre-emption rights systems, the employer must pay some form of remuneration to the employee inventor as compensation for transferring the right to patent the invention to the employer. Examples of this system include Austria, Finland, Germany, Hungary and Lithuania.
- **Automatic ownership** – Under this principle the PRO/HEI is the first owner of the IPR. They are not usually any reversion rights to the employee inventor and whether the employee inventor is entitled to compensation for transferring the invention varies by Member State. Examples of this system include Latvia, France, U.K., Estonia and Ireland.

Belgium operates a hybrid system which has features of both systems. Fundamentally, the rights to an invention automatically vest in the research institution. Therefore, it is properly viewed as an institutional ownership country. However, unlike other automatic ownership countries and similar to pre-emption right countries, the rights to an invention may revert to the inventor if, for instance, the research results have not been commercialised, within a reasonable time and without legitimate reason (being at least three years from the date of notification).

## 4. The current situation in the EU

### 4.1. Professors' privilege

Currently, professors' privilege is law in Sweden and Italy. Sweden has had a long-standing tradition of professors' privilege whereas Italy changed to a system of professors' privilege in 2001.

While this concept is found in Swedish and Italian law, the framework within which it operates, and its scope and extent, is not the same in both laws and there are some fundamental differences which are worth noting (see Fig. 3).

Fig 3. Overview of professors' privilege: Italy/Sweden

ITALY	SWEDEN
<b>Applies to</b> all employees and may extend to professionals involved in a research project even if they are in the position of consultants or third parties not directly employed by the sponsoring institution	<b>Applies to</b> all teachers, postgraduate students and doctoral candidates without distinction
<b>Researcher entitled to</b> rights deriving from any patentable inventions	<b>Researcher entitled to</b> all rights in patentable inventions
In respect of <b>other IPR</b> , a general principle provides that the issue of exploitation rights in works created under a contractual relationship are governed by the relevant contract	In respect of <b>copyright</b> , professors' privilege operates as custom not statute but there are exceptions. There are no other laws in Sweden which deal with this professors' privilege concept in the context of <b>other IPR</b> .
<b>University/public entity entitled to</b> a portion of the profits deriving from the exploitation of the invention	No equivalent provision
<b>University/public entity can</b> autonomously establish the consideration for granting a third party licence to use the invention	No equivalent provision
<b>Inventor entitled to</b> at least 50% of the profits deriving from the exploitation of the invention. If the university/public entity does not determine the amount due for a third party licence, the inventor is entitled to 70% of the profits deriving from the exploitation of the invention	No equivalent provision
Where rights vest in the researcher, the <b>researcher must</b> file for patent protection at his/her own expense and inform the University/public entity accordingly	No equivalent provision

<p><b>Derogations to the concept:</b></p> <ul style="list-style-type: none"> <li>▪ <b>If an assignment</b> is entered into to the university/public entity (which is then required to apply to patent the invention) and the university/public entity usually agrees to pay a percentage of profits to the researcher</li> <li>▪ <b>If the researcher or his/her successors or assignees do not begin the industrial exploitation of the invention within 5 years</b> of the grant of the patent, the university/public entity that employed the researcher at the time of the making of the invention is entitled to a royalty free, non-exclusive right to exploit the invention or to grant third parties the right to do so</li> <li>▪ <b>If research is financed wholly or partly by private entities</b> or is carried out within specific research projects financed by public entities different from the one by which the researcher is employed then the university/public entity is the owner of the rights deriving from the inventions</li> </ul>	<p>No equivalent provisions</p>
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Other than as mentioned above, Sweden does not apply professors' privilege to other IPRs and there are no other default IPR ownership provisions (except for trade marks).

The system of professors' privilege has been reviewed on a number of occasions in Sweden. In 1996, a public committee concluded that the concept should not be changed<sup>44</sup>. In 1998, a parliamentary committee reached the opposite conclusion, namely that ownership should vest in the employer. However, it did not recom-

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<sup>44</sup> SOU 1996:70 NYFOR

mend the abolition of professors' privilege as such but rather co-operation on the commercialisation of research results<sup>45</sup>.

More recently an Inquiry (SOU 2005:95) was asked to clarify the legal consequences of abolishing professors' privilege (Terms of Reference 2004:106).

A fundamental tenet of the Inquiry was that conducting research and education should not be disrupted by any changes in the law. Proposal 1 (see Fig. 4) does not propose any change in ownership rules but rather facilitates the reporting, and therefore the possible transfer, of inventions to the HEI. While Proposal 2 (see Fig. 4) preserves researcher ownership subject to a new entitlement of the employer to take over the invention, the employer is only entitled to do so if the employee has not reserved the right to publish information about the invention.

Another feature of the Inquiry is that any new system of transferring inventions should not be less favourable to researchers than the current system. Therefore, Proposal 2 includes rights for researchers to receive both a set fee and 30% of the commercialised value of the invention.

**Fig. 4 - Recommendations of the Swedish Inquiry (2005)**

### General

- Introduction of a new obligation on HEIs to promote the utilisation of research results generated at HEIs and entitle HEIs to make commercial use of research results by such means as acquisitions, sales, licenses and patents.

### Proposal 1 (Mandatory Reporting Alternative)

- Mandatory obligation on teachers and other employees with research duties at HEIs to report patentable inventions to their employer, if these inventions are attributable to the research activities conducted at the HEI in question. Even without march-in or take-over rights (a statutory right to take over inventions) in favour of the HEI, the HEI and the employee may naturally enter into an agreement that the HEI is to take over the rights to an invention in whole or in part.

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<sup>45</sup> See STI Outlook 2002 – Country Response To Policy Questionnaire: SWEDEN ([www.oecd.org/dataoecd/59/54/2762717.pdf](http://www.oecd.org/dataoecd/59/54/2762717.pdf))

### Proposal 2 (The Takeover Alternative)

- Assuming abolition of professors' privilege, a new Act entitling the employer, in return for compensation, to acquire all rights to reported inventions associated with the employee's employment.
- Mandatory reporting of patentable inventions by employees.
- The compensation would include a standard amount paid out when the HEI takes over (€2,500) plus reasonable compensation. Reasonable compensation should amount to at least 30% of the HEI's receipts in the event of commercialisation.
- The employer's right to acquire an invention is conditional on the employee not reserving the right to publish information about the invention.
- Except for the employee's right to compensation, the provisions of the law may be set aside by contract.
- If the HEI makes use of its right to acquire an invention, the HEI will then also be required to take effective measures to protect the invention including applying for patent protection if this has not yet been done. If the HEI does not take effective measures for utilisation, the employee has the right to recover the invention, or if the HEI has sold the rights, the right to compensation for the damaged incurred.

In relation to Proposal 2, the Inquiry concluded that it is not reasonable to build up the organisation for evaluation and marketing required for competitive and professional commercialisation without an exclusive right to acquire reported inventions.

Italy adopted professors' privilege in 2001 in order to encourage the patenting of existing research and, partly at least, on the basis that many inventions remained unexploited due to bureaucracy in university administrations. The law has been criticised for placing responsibility of exploiting the invention, and the cost of patenting, on researchers who may not have the necessary expertise or funds to do so.

Conversely, Germany abolished professors' privilege in 2002 primarily with a view to the commercialisation of research results. The right to this privilege was not used and German research facilities only contributed 4% of the total of patent applica-

tions. Results indicate that the initial implementation of the new system has been successful<sup>46</sup>.

4.2. Institutional ownership

As outlined in section 3, there are two primary systems of institutional ownership in operation in the EU in respect of employee inventions. The common element between these two systems is the principle of ownership of IPR/research results by the relevant institution or employer; however, the two systems may be distinguished as follows:

**Pre-emption rights:** (See Section 4.2.1 for an explanation)

**Automatic ownership:** Under this principle the PRO/HEI is automatically the first owner of the IPR which is usually subject to fewer conditions and few if any obligations towards the inventor. Examples of this system include Latvia, France, United Kingdom, Poland, Estonia and Ireland.

Belgium operates a hybrid system which has features of both systems. Fundamentally, the rights to an invention automatically vest in the university. Therefore, it is properly viewed as an institutional ownership country. However, unlike other automatic ownership countries and similar to pre-emption right countries, the rights to an invention may revert to the inventor if, for instance the research results have not been commercialised, within a reasonable time and without legitimate reason (being at least three years from the date of notification).

Fig. 5 Overview of Member States (institutional ownership) laws

<b>Pre-Emption Rights:</b> Austria, Czech Republic, Denmark, Finland, Germany, Greece (dependent inventions), Hungary, Lithuania.
<b>Automatic Ownership:</b> Belgium, Cyprus, Estonia, France, Greece (service inventions), Ireland, Latvia, Luxembourg, Malta, Netherlands, Poland, Portugal (joint ownership), Slovak Republic, Slovenia, UK, Spain

<sup>46</sup> Report on the Abolition of the German Professors Privilege: Overview of changes and challenges. Report prepared by PVA-MV Ag for Vinnova, the Swedish Agency for Innovation Systems

There is a general trend towards legislation which implements the system of institutional ownership, especially in countries where this is done under Public Research Acts (see Fig. 1), and is limited to patentable inventions only. Often, ownership of other IPR are either not expressly dealt with (sometimes not at all) or ownership of such IPR falls to be decided under general principles of labour law or IPR laws (which can lead to a different result). There is evidence of a general bias in the public research/IPR systems towards attributing value to patents only rather than other IPR such as utility models, copyright and industrial designs (although copyright ownership in particular tends to be viewed as a right of the researcher) in this context.

**Fig. 6 Overview of scope of public research/institutions acts**

<b>Austria:</b>	Inventions only
<b>Belgium:</b>	All IPR except copyright and trade marks
<b>Czech Republic:</b>	The relevant Act does not deal with specific forms of IPR. The Act relates to activity (research and development) as to systematic creative work. Therefore, the results can be in the form of a patent or utility model.
<b>Denmark:</b>	Inventions/utility patents only
<b>Finland:</b>	Inventions (patents) only
Default IPR provisions then apply.	

#### 4.2.1. Pre-emption rights

In Austria, a PRO will have a pre-emption right over its employees' inventions and the same applies to HEIs. However, the situation is less clear in respect of copyright where no principle of *cessio legis* applies (although this is considered possible by some commentators).

The Czech Republic has unusual provisions relating to copyright. In the Czech Republic, an employer can only assign the exercise of the economic rights in a copyright work to a third person with the employee's consent unless it occurs during the



sale of the undertaking or part of it. If the employer dies or there is no successor, then the copyright reverts to the author. Finally, an employee has the right to request a licence to use the work if not utilised or utilised inadequately by the employer.

In Denmark, the public research law applies only to patentable inventions or registrable utility models made by employees of institutions specified in the Danish Act on Inventions at Public Research Institutions<sup>47</sup>. This is similar in scope (in terms of inventions covered) to the regime in Germany which excludes the Max Planck Society and the Fraunhofer Society although the German Act (Employee's Invention Act 1957, as amended<sup>48</sup>) generally applies to all employees in private employment or public service, civil servants and the German Armed Forces with specific rules for professors.

The position regarding inventions in Lithuania is quite broad and, similar to the situation in France and Greece, an employer is entitled to claim inventions made by using the experience accumulated by an enterprise, institution or organisation or its technologies or equipment. The economic rights in a copyright work made by an employee vest in the employer but only for a period of five years (or indefinitely in the case of computer programs).

The legal positions in Finland and Germany are similar.

Finnish law makes a fundamental distinction in the Act on Universities (369/2006) between "*contract research*" and "*open research*". Contract research is research which is regarded as a chargeable performance under the Act on Criteria for Charges Payable to the State (150/1992, as amended) or the institution has agreed on the full or partial transfer of rights to a party that is not an academic institution, or if the institution has otherwise agreed, the implementation of the research with such third party funding or otherwise participating in the research project. In respect of inventions made as part of contract research, institutions have a right to acquire them.

Open research means research where: (i) there is no outside participation; (ii) outside participants are funding a project but only stipulations concerning publication of research results are agreed on; or (iii) although otherwise fulfilling the character-

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<sup>47</sup> These are the university under the Danish Ministry of Research and Information Technology, the government research institution, the public hospital, or the health research institution under the county authorities or the Copenhagen Hospital Corporation (section 6).

<sup>48</sup> Section 42

istics of contract research, it has been specifically agreed with the participating third parties that the research will be treated as open research. For open research, the institution is only entitled to acquire the rights if the inventor intends not to utilise the invention and has not published it.

Conceptually, this is quite different to other "pre-emption" right countries as the fundamental right to exploit open research lies with the inventor and is similar to the German law on this point. While most of the other relevant Member States do acknowledge that different terms may be agreed for 'contract research', this exemption does not apply. This new Finnish system (introduced on 1 January 2007) may perhaps be best described as a system of *qualified* professors' privilege.

Furthermore, some institutions are not covered by the Act on Universities such as the VTT Technical Research Centre of Finland. For these institutions, the Employee Inventions Act will apply (657/1967 as amended) which recognises employer ownership of inventions. For other IPR, there are no default provisions (such as copyright (except computer programs and databases), utility models, industrial designs and plant breeders' rights).

In Germany, the distinction is made between "service inventions" which are those made during the term of employment resulting from the employee's activities or which are significantly based on the experience or activities of the business or public service and "free inventions" which are all other inventions. The employer may claim a service invention (in full or in part by making a claim in writing to use the invention within the time periods set out in the legislation) but a free invention is owned by the employee (subject to a non-exclusive licence to the employer if it expresses a wish (in writing) to commercialise the invention). The approach in Germany has been criticised for creating a bureaucratic system which can often result in uncertainty rather than the certainty that was sought for both the employer and the employee.

University employees are granted specific rights including a right to use the invention non-exclusively for the purpose of teaching or academic research in Germany. This is similar to the situation in Belgium.

Similar to the distinction made under Finnish and German law, in Greece separate provisions apply depending on whether an invention is a "*service invention*", which is automatically owned by the employer, or, a "*dependent invention*", which is owned by the employee, unless taken up by the employer. In that sense, Greece could be clas-

sified under either system depending on whether the invention is a service invention or a dependent invention.

Under the Greek system, a "*dependent invention*" is an invention made by an employee with the use of materials, means or information of the enterprise in which he/she is employed. The employer has four months from notification of the invention by the employee in which to notify the employee whether it is interested in jointly filing the application. If it does not do so, the rights then belong to the employee alone. If the election is taken up by the employer, the commercial value is shared 40% to the employer and 60% to the employee. The same system applies to industrial designs and a similar system applies in respect of semiconductor topography rights. Copyright will normally vest in the employer "*to the extent necessary to perform his duties under the contract of employment*". The Spanish system is similar to that of Greece.

In Hungary, a distinction is made between a "*service invention*", which is an invention created by a person who has an obligation under his/her employment to develop solutions that fall within the sphere of the invention and an "*employee invention*", which is an invention created by a person, who is not required to do so under his/her employment contract, however, the exploitation of such invention falls within the sphere of activities of his/her employer. The inventor must report the service and/or employee invention immediately upon its creation. The employer must then declare within 90 days whether it wishes to claim the service invention or whether it wishes to exploit the employee invention. The inventor may freely dispose of the service invention if the employer consents thereto or if the employer fails to make the above declaration within 90 days. In the case of employee inventions, the inventor is entitled to claim the patent free of the exploitation right of the employer, if the employer consents thereto, or if the employer fails to make the above declaration within 90 days. These rules also apply to utility models, industrial designs and plant breeders' rights.

### Reversions

The circumstances of reversion of rights to employee inventors vary across the EU. The most common scenario is typified by Austria, where the rights revert to the inventor author if they are not claimed within three months. However, in Belgium they may revert if the research results have not been commercialised, within a reasonable time and without legitimate reason (being at least three years from the date of notification), and then the researcher may claim the rights. Furthermore, in Bel-

gium if the patent formalities are not complied with within six months then the research results revert to the researcher.

With the exception of Belgium, the periods of reversion in the EU tend to vary between two and six months across the EU.

Reversion of rights is another area of material variance between Member States. Local laws frequently provide for the reversion of rights in inventions to the researcher in certain circumstances. These include situations where there is a failure to "claim" the rights to the invention by the PRO/HEI or the PRO/HEI fails to apply for patent protection for the invention. This reflects the underlying tension between incentivising researchers and commercialising IPR. It seems that there is an uneasy balance between the protection of the investment of public funds, the objective that an invention achieves open market value and the guarantee of academic freedom and the right to publish of researchers.

**Fig. 7 Reversion of inventions to researchers**

<b>Austria:</b>	3 months from notification
<b>Czech Republic:</b>	3 months from notification
<b>Denmark:</b>	2 months from notification
<b>Finland:</b>	6 months from notification
<b>Germany:</b>	4 months from notification (or 2 months in case of restricted use (37 para 2 and § 8, para 1, no.3))
<b>Greece:</b>	4 months from notification (dependent inventions only)
<b>Hungary:</b>	90 days from notification
<b>Lithuania:</b>	4 months from notification

#### **4.2.2. Automatic institutional ownership**

The common law countries of the EU (Cyprus, Ireland and the UK) operate a substantially similar system of automatic employer ownership. With some exceptions, such as plant breeders' rights in Ireland and Cyprus, all IPR made by an employee in the course of employment are owned by the employer including inventions. In the UK and Ireland, generally commissioned works will be owned by the researcher,

not the commissioning party. In Cyprus, commissioned works are generally owned by the commissioning party.

In Estonia, default employer ownership applies in respect of most IPR except utility models which vest in the author (unless agreed otherwise by contract). In relation to works created in the public service, the economic rights transfer to the State. However, in Latvia, an employee will usually be the first owner of copyright and industrial designs (except in respect of computer programs and databases) subject to an agreement to the contrary. The legal relations between the employer and employee with regard to inventions created during employment, as well as regulation of additional remuneration for the creation and utilisation of an invention created during employment, are determined by the collective agreement or employment contract. All other inventions of the employee belong to the employee him/herself. In relation to inventions, the employer will usually be the first owner of the invention, but if an invention has been made in an enterprise which performs scientific research, design or other creative activities on the basis of a contract with a funding party financing the said activities, the right to a patent is determined by the provisions of the contract (Section 5, Part 7 of the Patent Law). Lithuanian law takes the same approach. Certain inventions commissioned by the Latvian State relating to sovereignty or security belong both to the State and the contractor (Section 6 of the Patent Law).

France has the unusual provision that the economic rights in copyright works made by civil servants in the course of their employment will automatically vest in the French State if that work was created in the context of their duties or upon instructions from superiors. There is a threshold that such vesting must be *"strictly necessary to the performance of the public service in question"*. The scope of inventions belonging to the employer is also wider than in other countries including (i) inventions in a field to that of the employer or (ii) inventions in relation to which the employee used the employer's intellectual or material resources. The situation is similar under the patent laws of Luxembourg (*Loi portant modification du régime des brevets d'invention*, 20 July 1992) which includes inventions made in the field of the company's activities or by knowing or using the firm's techniques, specific means or data put at the disposal of the employee by the firm. Conversely, copyright will usually be owned by the employee except in the case of computer programs.

Under Dutch law, the first owner of IPR made by an employee will be the employer. In the case of patents, Article 12, Section 5 of the Patents Act 1995 ex-

pressly applies this principle to inventions created by professors/researchers working for a university or research institutes.

Portugal is exceptional in that it operates a system of joint ownership. Decree-Law No. 124/99 on the regime for the Careers for Public Researchers sets out the rules applicable to those who work for public research departments and laboratories as well as other entities that carry out technological research and development and employ scientific researchers.

Under Article 59, any inventions and designs and models which may result from public research are jointly owned by the institution for which the researcher was working and the researcher or research team. Profits from the exploitation of the invention are shared 50/50 and this right cannot be waived in advance. If the research is partly funded by a third party, then another arrangement may be agreed contractually.

In the case of university professors, the situation is unclear and it appears that the provisions of IPR ownership set out in law will apply, which generally provide for employer ownership. Again, the applicable German law has specific rules in relation to professors, lecturers and university assistants (section 42(1)).

In the Slovak Republic, the R&D Act (Act No. 172/2005 Coll. On Organisation of State on of Research and Development) provides that if a project is funded by the State only, the project solutions (*riešenia projektu*) will be owned by the grantee of the funds unless the grant agreement or IP laws state otherwise. Where there has been mixed funding from private and public sources, IP ownership will be in accordance with the grant agreement.

In Slovenia, the results of State funded research will be public (Article 2(4) Research and Development Act No 22/2006) subject to applicable IP laws. The general position under Slovenian law is that the employer will be the first owner of IPR made by an employee in the course of employment, subject to agreement to the contrary.

In Belgium the HEI's right to exploit the invention is without prejudice to the use of the results for education and academic purposes. This rule is somewhat less strict than the absolute veto suggested by the Swedish Inquiry. In Belgium, a researcher is entitled to patent the invention in countries not covered by the university patent strategy.

In Poland, the first owner of the IPR created by an employee in the course of their employment is the employer unless the employment agreement states otherwise. This exception only applies to employees and does not apply to consultants, contractors or other third parties.

### 4.3. Remuneration of researchers

One of the questions National Correspondents were asked was whether, under the law of their Member State, an employee was entitled to remuneration (under statute or otherwise) for the assignment of an invention to an institution.

The answers we received reveal that there are considerable disparities across the Member States surveyed on this point. While it is difficult to distil the different approaches into coherent patterns, the main divisions are as follows:

- Member States in which **no right** to remuneration exists at law;
- Member States in which a right to remuneration exists and is clearly **defined**;
- Member States in which a right to remuneration exists and is **not** clearly **defined**;
- Member States in which an additional right to remuneration exists where the employer owns the IPR;
- nature of the Institution distinctions; and
- U.K. model.

Within the above initial categories (which will be dealt with more fully in turn below), there are arguably further distinctions one can make. Some Member States allow a researcher to "*contract out*" of the right to remuneration where it exists at all. Others (e.g. Finland) do not allow this, but rather treat the right as an inalienable one. Some Member States give a flat-rate bonus to researchers based on a percentage of the profits from exploitation (Germany's law on this has been described by one commentator as "*rather elaborate*"<sup>49</sup> (when compared with other industrialised countries) and Sweden has a proposal for such a law).

Further, some Member States make a distinction between those employees who are "*employed to invent*" (and who are not entitled to remuneration as of right) and those who are not so employed and are by contrast, entitled in principle to remuneration.

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<sup>49</sup> MEIER, SCHUBERT and JAENICHEN in "Employees Invention Remuneration-Money (f)or Nothing?, Vossius and Partners.

(Slovenia applies such a distinction). Further, there are distinctions on how remuneration is dealt with across the jurisdictions, divided along IPR type (patents, utility models, plant breeders' rights, etc). Those IPR-type differences cut across both categories at points 3 and 4 above.

We will deal with the six principal classifications in turn to highlight key features of the different systems that exist.

#### 4.3.1. Member States in which no right to remuneration exists at law

These include Ireland (however, such an obligation can be negotiated between the parties by contract), Lithuania, Luxembourg, Poland and Cyprus. Luxembourg only has the right to remuneration for patents but not for other IPR. The policy reasons behind this are unclear. Certainly, it is easier to statistically analyse patent results due to their public nature. However, it ignores the importance of other IPR including, perhaps unfairly, copyright, which is key to ICT innovation. It perhaps reflects the traditional scientific emphasis of university research and is worthy of closer examination.

In Sweden, there appears to be no such automatic right to remuneration at law but it may exist by custom in the case of copyright.

#### 4.3.2. Countries in which a right to remuneration exists, and is clearly defined

Based on the responses received, Slovenia has a uniquely detailed legal regime on the remuneration of employee inventions. Because of its novelty it is worth examining the Slovenian model of remuneration in more detail.

First, a distinction is made in Slovenian law between so called "*direct work*" and "*indirect work*" inventions. Direct work inventions are those made by an employee, *inter alia*, in the course of executing his duties, or following a special request of his employer. Indirect work inventions, on the other hand, are those which he assigns to his employer during his employment or within six months of his employment ending. Into this category fall inventions which result from the employee's experience at that employer's workplace, or using that employer's assets as some of the "main contributions" to the creativity of the invention. How an employee is remunerated depends on which category a given invention falls into.



In Portugal, which has a regime of joint ownership, royalties and profits are divided on a 50:50 basis between scientific researchers and the institutions which employ them. However, it is not clear whether this right extends to university professors, but it appears it might not, and that more general principles of IP ownership apply to them instead. The right to the 50% split cannot be waived by the researcher/research team in advance.

By contrast, in Germany, the statutory bonus scheme set out in the Employee Inventions Act, 2002 (which abolished the former professors' privilege regime) does not restrict remuneration based on the employee's status. Professors, lecturers, and technical staff all are beneficiaries of the right.

Interestingly, Germany does not deduct patent costs (which can of course be substantial) in arriving at the figure from which the one-third bonus for inventors is calculated. Some commentators have questioned the merit of this approach given that the result may be that there is only risk for the institution and only reward (i.e. no loss) for the inventor as a result<sup>50</sup>. While it is unclear what the origin of the one third rule is, it is a feature found in Swiss law also. It has been commented<sup>51</sup> that it may represent one third for the inventor, one third for the institution, and one third for the research laboratory.

Some commentators have noted that the level of administrative "red tape" which is included in the German system is a major disadvantage. Several commentators have pointed out that it can be too cumbersome and time-consuming for SMEs to apply<sup>52</sup>.

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<sup>50</sup> SELLENTHIN, *"Who should own university research? -an exploration study of the impact of patent rights regimes in Sweden and Germany on the incentives to patent search results"* [2004] Institutet Foer Tillvaxtpolitiska studer, at page 44

<sup>51</sup> In CHARDONNES, *University Technology Transfer Practices in Switzerland*, LES's Les Nouvelles, June 2006 Special Edition on University Technology Transfer, at page 60

<sup>52</sup> HEATH, "The Remuneration of Employees in Europe and Japan", *cnpq.br.servicos/propriedadeintelectuel/palestra\_chris.doc* and the German Association for Industrial Property and Copyright of 23 February 2000, available at [www.grur.de/seiten/themen/stellungnahmen](http://www.grur.de/seiten/themen/stellungnahmen).

#### 4.3.3. Member States in which the right exists in principle, but its precise application is left to the parties, or other authorities to determine.

Many Member States, including the Netherlands, Czech Republic, Hungary and Malta, fall into this category. For example, while Dutch law acknowledges a right to "remuneration" in the case of patents, there is no further description as to whether that right prescribes equitable, reasonable, just, or any other qualifier to the term "remuneration". It does not prescribe what criteria the institute should use to arrive at the compensation figure. It is only when the employee's salary does not adequately compensate him for the invention, that additional compensation is payable. Further, the courts there assume adequate compensation exists, unless the contrary is demonstrated.

The policy behind the national rules that fall into this grouping may well be to allow a degree of flexibility to institutions to freely negotiate such sums with their employees, without the possibility of a third party, (*e.g.*, courts) substituting its views on what those sums should be, except in extreme cases of abuse by employers.

#### 4.3.4. Rights to additional remuneration in regimes where employer owns IPR.

There are regimes in which the default position is employer ownership of employment IPR, but there is nonetheless a right to further remuneration for the employee where an invention relates to his duties. In France for example, Section L.611-7 of the IPC and Section L.133-5 of the Labour Code require such "additional compensation" to be paid to an employee. The amount is set by the applicable collective bargaining agreement, or the employment contract. The payment is treated as a bonus, and in the case of the university professor/government employee consists in a share of the revenues generated by the invention. Where the employer seeks an assignment of or a grant of rights to an invention, the employee gets a sum equal to the exact value of that invention.

The test in France for deciding whether or not an invention "*relates to (an employee's) employment*" is whether its creation was initiated by the employer. In other words, was it either the purpose of the employment relationship, or did it result from an express request of the employer? If an invention cannot be so characterised, the default ownership is that of the employee. What is unusual about French law in this respect is that even where the employee owns the IPR under the above formulation, the employer can seek an assignment of the IPR to it under certain prescribed cir-

cumstances. Section L6.11-7.2 of the IPC sets out two instances where these "assignment rights" for the employer arise. One is where the invention relates to the field of the employer, the other is where the employee used the intellectual or material resources of his employer to create the invention.

### 4.3.5. Nature of the institution distinctions

It is a feature of Swedish, Finnish and French law to distinguish ownership rights depending on whether the place of research is a public or private university or other HEI. The OECD<sup>53</sup> also notes this distinction, and attributes it (at least in part) to the autonomous nature of many universities from central government. Indeed, the European Commission has noted<sup>54</sup> that private research *"finances more than half and carries out more than two thirds of European research and technological development activities"*. It results in a dual system in those member states which follow it, so that remuneration is a right for those in the public sector, and not for those in the private sector. Making a distinction in remuneration rights based on the public or private nature of the institution (and not simply on the source of its funding) is arguably an outmoded approach in the context of increasing involvement of private enterprise in public research. It also shifts the focus from the subject matter and quality of the research being undertaken to one of the legal nature of the research institution (which can often be historical and of little relevance to the research).

### 4.3.6. UK model

The system in the U.K. is unusual in that it contemplates an employee remuneration right, but not automatically, and in exceptional circumstances only. According to Section 39 et. seq. of the Patents Act 1977 an invention created by an employee is owned by the employer if made in the course of that employee's normal duties or duties specifically assigned to him. The compensation right arises where a court may award *"additional compensation"* in cases in which a patented invention is, *inter alia*, of *"outstanding benefit"* to the employer. In practice not frequently invoked due to its high burden of proof on the employee, and the necessity to litigate to claim the right.

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<sup>53</sup> In its survey "Turning Science into Business: Patenting and Licensing at Public Research Institutions", 2003/4 at page 23

<sup>54</sup> In its Communication from the Commission to the Council, The European Parliament, and the Economic and Social Committee of the Regions: "Towards a European Research Area", Com (2000)6 of 18 January 2000, at page 6

The U.K. model has been litigated and therefore we can comment in more detail on how its courts have in the past interpreted the section. This has been done in a way which decreases the scope for its use further and is therefore noteworthy. An example can be found in the *GEC Avionics*<sup>55</sup> case, in which the Court found that the burden of proof rested (in initial stages) with the employee. In another case<sup>56</sup>, an employee's claim for remuneration failed on the basis that the actual benefit attributable to the patent was not more than 0.01% of the employer's turnover, and the future benefit or potential upside of the patent's existence was not taken into account.

In the UK, the recent judgment of the Court of Appeal in *Liffe Administration* touches exactly on this point<sup>57</sup>. The case is noteworthy because it is the first UK appellate court decision on the relevant section (S.39) of the Patents Act, 1977. Liffe runs the London Futures Exchange and Dr Pinkava (a manager there) devised a system which enabled the electronic trading of certain financial instruments. Upon being advised that he owned the inventions, Dr Pinkava filed for US patent protection for them. Subsequently, his employment was terminated and Liffe claimed to be entitled to the patent applications under Section 39. In the High Court, the judge had focussed on the initial duties of the employee as stated in the employment contract, but on appeal, the Court of Appeal made it clear that this was too limited an approach, that employment duties can evolve over time in one's employment. The Court held that the patent applications concerned belonged to Liffe as the inventions had been made in the course of the employee's normal duties. In other words, one must look not just at what is provided in the employment contract, but the actual activities of the employee in his day-to-day work. In this case, the employee's duties had evolved over time to include the credit swap patent that was the subject of the dispute. The rarity of cases on this provision may demonstrate that such issues are comparatively rare. Alternatively (and perhaps this is more likely), employees have traditionally found such cases difficult to bring. Interestingly, the judgment of the court reveals that before the relationship of the parties broke down, the parties had been in disagreement about Dr Pinkava's right of remuneration for the underlying invention. The case (which included a dissenting judgment on the meaning of one of the sub-clauses of Section 39 (1)) illustrates

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<sup>55</sup> *GEC Avionics Ltd's Patent* [1992] RPC 107

<sup>56</sup> *In British Steel Plc's Patent* [1992] RPC 117

<sup>57</sup> *Liffe Management and Management v Pavel Pinkava and De Novo Markets Limited*, [2007] EWCA CIV 217, 15 March 2007.

how a lack of a common EU approach on these matters can give rise to expensive litigation on what arguably should be uncontroversial legal principles of ownership and remuneration.

In a more recent UK decision, *Kelly and Chui v. GE Healthcare Limited*<sup>58</sup>, two employees were awarded compensation of UK£1.5 million (representing a royalty of 3%) under Section 39 of the Patents Act 1977 for a patented invention which was of outstanding benefit to the employer in respect of an invention for a radioactive imaging agent. This may indicate a change in the approach of the UK courts which, to date, had refused to make any awards under the Patent Act, 1977.

See Fig. 8 for an overview of the variety of approaches taken in the countries surveyed.

Fig. 8 Remuneration Rights

Country	Does national law provide a remuneration right?	Comments
Austria	Yes	Limited to patents.
Belgium	Yes	
Cyprus	Yes	Limited to patents.
Czech Republic	Yes	Patents, industrial designs & copyright.
Denmark	Yes	
Estonia	Yes	Copyright.
Finland	Yes	Inalienable.
France	Yes	
Germany	Yes	If the results are assigned to employer.
Greece	Yes	Patents and integrated circuits.
Hungary	No	
Ireland	No	Can be agreed by contract.
Italy	Yes	
Latvia	No	
Lithuania	Yes	Patents: employment but not where origi-

<sup>58</sup> High Court, Mr. Justice Floyd, 11 February 2009

		nal contract was "to invent" or where the employee was given extra payment for those duties.
Luxembourg	No	In the case of patents a right to an "equitable part of the realised profit" exists.
Malta	Yes	
Netherlands	Yes	Patents and in some circumstances plant varieties.
Poland	Yes	
Portugal	Scientific Researchers: yes University Professors: no	
Slovak Republic	No	
Slovenia	Yes	Very specific and detailed provisions of statute law.
Spain	Yes	
Sweden	No	One exception may copyright (by custom)
U.K.	Yes	Patents
U.S.	Yes	Public Research

#### 4.4. Codes / guidelines and similar measures

##### 4.4.1. Overview

Voluntary codes of practice/guidelines on IPR ownership and exploitation have an important role to play in protecting the results of research. In the recent (draft) EU consultation<sup>59</sup>, a majority of respondents answered that guidelines ought to be created to address issues such as the balance between patenting and publishing and developing a PRO policy on links with industry generally. The OECD has noted that the experience of its member countries was that while legislation might be necessary to create *"the incentive for PROs to protect and commercialise IP"*, new laws were not the only measure which could be taken and that general guidelines and codes of

<sup>59</sup> Draft report on the outcomes of the public consultation on transnational research co-operation and knowledge transfer between public research organisations and industry M1-FM/DD (D 2006)

practice on IPR ownership and management had a role to play to foster greater transparency and coherence in the area<sup>60</sup>.

Currently these codes work in parallel with one another, and with the pre-existing legal regime in each Member State. By their nature, parties are free to use them or not, but they provide a useful source of potential common ground between contracting parties in collaborative research, wherever they may be located within the EU.

#### 4.4.2. Supranational codes

##### a. *Responsible Partnering*<sup>61</sup>

A joint initiative of the European Commission, EIRMA, EUA, EARTO and ProTon, this is intended to assist both PROs and private companies to improve the effectiveness of their collaborative research. The code highlights the need for a sustainable approach, in other words, it acknowledges that relationships in which the fruits of research are inequitably allocated between the parties, are less likely to be durable. A longer term view of the collaborative research process is facilitated by such an approach. Two main principles are contained in the Code, (1) there should be maximum beneficial use of public research, and (2) that there should be responsible use of that research. Following from those two core principles, ten guidelines follow. These include the adoption of processes which will enable the parties to establish what their own respective expectations are. One of the principles is the need for parties to share equitably in the benefits of research results as well as having clarity of IPR ownership.

##### b. *The EICTA 2004 Interoperability White Papers*<sup>62</sup>

This Code is aimed at encouraging (technical)<sup>63</sup> information-related interoperability for products and services being used by multiple parties. It is not related to re-

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<sup>60</sup> "Turning Science into Business; Patenting and Licensing at Public Research Institutions" 2003/4.

<sup>61</sup> Joining forces in a world of open innovation, a guide to better practices in collaborative research between science and industry.

<sup>62</sup> EICTA, 21 June 2004 and EICTA White Paper on Standardisation and Interoperability, November 2006.

<sup>63</sup> In networks, systems, devices, applications and components

search specifically but has a more general application to promote and reward innovation, and might be described as a technical sectoral code for that reason. The code introduces actions and principles to achieve that aim. The White Papers note the tension between IP protection (which rewards the innovator) and the adoption of a common (perhaps non-proprietary) standard for the public goal of better interoperability. It notes too that such tensions can and have been "*managed in a generally successful manner*" by the development of so-called "*open standards*".

c. *Commission Recommendation on IP management in KT activities and Code of Practice for universities and other public research organisations*<sup>64</sup>

This was published in Spring 2008, and is aimed at developing guidance on the management of IP by PROs in the form of a recommendation to the Member States. Central to the recommendation is the idea that steps be taken to improve the coherence of IPR regimes as regards the ownership of IP, in such as a way as to facilitate cross-border research. The recommendation suggests using the recommendations themselves as the basis for national legislation or guidelines on IPR management.

#### 4.4.3. National codes

Ireland, the UK and Denmark have introduced non-binding codes to assist in technology transfer and dealing with IPR ownership.

a. *Ireland*

The Advisory Council for Science, Technology and Innovation (ACSTI) has produced two complementary codes which are described below.

- "*National Code of Practice for Managing Intellectual Property from Publicly Funded Research*" is non-binding and may be adapted for local use by a public research organisation, which includes, for example, government funded research laboratories and agencies, hospital laboratories and third level institutions. One of its key principles is that ownership of such research be vested in the PRO, backed by published ownership policies and written agreements<sup>65</sup>. It suggests that conflicts of interests should be managed and resolved and good practice guidelines

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<sup>64</sup> C(2008)1329, 10 April 2008

<sup>65</sup> Entered into by all participants in the research, regardless of their title and status (whether students, technicians, visiting academics or not).



(e.g. keeping adequate laboratory notebooks to assist in IP protection) should be put in place. It encourages PROs to develop a policy on incentives to research (equity and royalty sharing are examples but it encourages a broad approach to the issue not restricted to those two options). It also includes a sample invention disclosure form, and includes a user-friendly guide to IPR.

- *"National Code of Practice for Managing and Commercialising Intellectual Property from Public-Private Collaborative Research"* was published. Like the Code above it is non-binding and provides guidelines and a framework for opening negotiations between parties based on best practice.

It states that ownership and access to results of public-private collaborative research should be negotiated on a project by project basis based on three key factors: financial input, intellectual input and capacity to exploit.

It also addresses the need to discuss how disputes between the parties are to be dealt with. It is explicitly aimed at maximising Ireland's attractiveness for foreign direct investment in research and development by promoting a common IP management approach.

Whilst the codes are non-binding, it should be borne in mind that compliance with their main terms is a pre-condition to obtaining a grant from one of the major sources of funding for scientific research in Ireland, Science Foundation Ireland. Effectively therefore, while the codes are not binding, there is a strong financial incentive to using them under the grant conditions laid down by funding agencies. Another of the core elements of Science Foundation Ireland's terms and conditions is that there be attractive incentivisation and financial return for the research project's principal investigator and the research team<sup>66</sup>.

### *b. UK*

The UK has published significant non-binding guidance to industry in relation to IP ownership and managing IP. In particular, UK initiatives have included:

- Guide to Managing Intellectual Property<sup>67</sup>
- The Lambert Review and Agreements<sup>68</sup>

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<sup>66</sup> SFI Terms and Conditions of Research Grants (August 2006 Edition) available at [www.sfi.ie](http://www.sfi.ie)

<sup>67</sup> [www.ipo.gov.uk/managingipoverview.pdf](http://www.ipo.gov.uk/managingipoverview.pdf)

<sup>68</sup> [www.innovation.gov.uk/lambertagreements](http://www.innovation.gov.uk/lambertagreements)

- The Baker Report<sup>69</sup>

*The Lambert Review and Agreements*

The 2004 Lambert Review of Business-University Collaborations came up with a number of key recommendations on ways to promote greater links between industry and universities. One of these was that a number of interested parties, including the UK's Department of Trade and Industry, Association for University and Industry Links ("Auril") and industry stakeholders, develop a set of model agreements to be used in collaborative research projects. These would be used on a voluntary basis as a suite of model contracts by universities and industry. A decision guide and guidance notes were also developed to help parties decide which of the five main Lambert Agreements (or a combination of them) best suited the particular scenario with which the university or company sponsor was dealing.

There were five such agreements developed:

- **Model Agreement 1** – the **University owns** the IP in the research results and grants a *non-exclusive licence* for the company sponsor to use the results in a specified field and/or a territory.
- **Model Agreement 2** – the **University owns** the IP in the research results and it then licenses the company sponsor to use the results in a specified field and/or territory, and the company sponsor has a right to negotiate to acquire an *exclusive licence* in relation to certain results;
- **Model Agreement 3** – the **University owns** the IP in the research results and licenses the company sponsor to use the results in a specified field and/or territory and the company sponsor has a right to negotiate to take an *assignment* of the IPRs in some of the results;
- **Model Agreement 4** – the **company sponsor owns** the IP in the research results, but some rights are reserved to allow the University to use the results for *academic purposes* (including academic publication) on certain conditions (to protect the confidentiality of the company sponsor's data and so as not to jeopardise the possibility of the company sponsor obtaining patent protection if available for the results); and
- **Model Agreement 5** – the **company sponsor owns** the IP in the research results, and the University has no right to publish the results.

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<sup>69</sup> [www.hm-treasury.gov.uk/ent\\_sme\\_baker.htm](http://www.hm-treasury.gov.uk/ent_sme_baker.htm)

c. *Denmark*

The Confederation of Danish Industries and the Danish Rectors' Conference "*Contacts, contracts and codices, research co-operation between universities and companies*" is non-binding and sets out useful information and guidance on the interaction between universities and companies. The Code includes guidance on co-financed research, sale of self-funded research, sponsored research, commissioned research, consulting services, Ph.D studies and IPR. It addresses, in a user-friendly manner, how to decide payment models, valuations, distribution rights and the management of the parties expectations of what the results will be in any given project.

d. *Germany*

Standard agreements on collaborative research exist in examples such as the Berliner Verträge, the Hamburger and Düsseldorfer Verträge, Verträge des BMWi<sup>70</sup>.

e. *EU Initiatives*

In 2004, DG Research published a working paper entitled "*Towards European Guidelines*" in this field<sup>71</sup>. It set out a number of recommendations which could be used as a basis for the development of EU guidelines. It highlighted the need for harmonisation and convergence of ownership regimes at an EU level. It includes some useful starting points for research collaborators to consider as minimum principles.

The CREST Report<sup>72</sup> repeated the need for guidelines at an EU level to assist PROs/HEIs and industry to "*work out dispassionately what contractual arrangements for IPR ownership will be appropriate for their needs*". The CREST Decision Guide included in their report is not dependent on any particular IP system and is a useful complement to using a code of practice.

In 2008, the European Commission published its previously mentioned Recommendation on IP in KT activities and code of practice for universities and other PROs. This encourages PROs to establish and publicise policies and procedures for

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<sup>70</sup> Cited (amongst others) by CREST OMC Expert Group Report on IP (Cycle 2) 1 September 2006 at [ec.europa.eu/invest-in-research/coordination/coordination01\\_en.htm](http://ec.europa.eu/invest-in-research/coordination/coordination01_en.htm)

<sup>71</sup> Expert Group Report: "Management of intellectual property in publicly-funded research organisations: Towards European Guidelines", WP EUR 20915 EN

<sup>72</sup> 2nd Cycle, September 2006

the management of IP in line with the code of conduct included in that recommendation.

#### 4.4.4. Model contracts

Some countries have put in place model contractual provisions such as Lambert to help potential contracting parties reach agreement on IPR and reduce that agreement to writing. In this regard, the CREST Group notes that achieving model agreements, which could have a pan-European application, might not be possible (as the agreements would perhaps be too complicated to be of practical use). Instead, it prefers the use of such model agreements (examples are set out below) at a *national* level. International organisations such as the Association of University Technology Managers ("AUTM") have also included similar model agreements<sup>73</sup> from various universities on their website. There are also widely available precedent agreements services.

In addition, model agreements have been developed in Germany at the German Ministry of Economics in 2007. These includes an Agreement on Contract Research (assignment variant), Agreement on Contract Research (licence variant), Agreement on Research Cooperation and an Agreement for Work and Services<sup>74</sup>.

In our view, there is already a wealth of information and assistance available to PROs/HEIs on this issue. Encouraging the regular updating of *existing* materials and their wider *dissemination* among the research communities will be the key to maximising the use of the resources which already exist.

#### 4.5. Grant systems

While the Member States surveyed provided some information in relation to grant regimes, the information available does not demonstrate any regional patterns in grant practice. In our view, the grant regimes constitute a parallel IP regime to that of statute law and case law. The conditions laid down in grant agreements (and the penalties which can be triggered by breaching them) mean that under the contract laws of many Member States, ownership and exploitation of research IPR is subject

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<sup>73</sup> [www.autm.net/aboutTT/aboutTT\\_policies.cfm](http://www.autm.net/aboutTT/aboutTT_policies.cfm) (also includes sample IPR policies for PROs/HEIs)

<sup>74</sup> <http://www.patentserver.de/Patentserver/Navigation/Patentpolitik/kooperation-wissenschaft-wirtschaft,did=241928.html>

or may be made subject to another layer of regulation. In some instances, countries required the results of research to be commercialised (or remain) in one Member State alone, (and not on a cross border basis), which in our view runs contrary to the concept of a European Research Area in which cross-border, multi-jurisdictional research projects would be encouraged for scale. Whilst outside the scope of this chapter, this area is worthy of separate examination. At a minimum, it may present a barrier to cross-border collaboration and may hinder free movement of intellectual capital.

### 4.6. University/ HEI/PRO policies

HEI policies sit alongside legal regimes on IP matters and may have an impact on the resulting ownership, protection and exploitation of IP in a given campus. This may give rise to inter-institutional differences within jurisdictions which would not be evident from an analysis of the legal regime alone. For example, Cambridge University has, through its company Cambridge Enterprise Limited, adopted a policy to the effect that the university itself has the initial right to apply for patents for academic inventions, and that copyright in software created there belongs in the first instance to the academic, unless it has been created as a result of sponsored research<sup>75</sup>. Other IPRs belong generally in the first instance to the staff member concerned. The policy goes on to provide for a more favourable reward system to incentivise the academics involved.

## 5. The current situation in the United States and Japan

### 5.1. United States

#### 5.1.1. Overview

The United States is considered by some to have the most developed technology transfer system in the world. Rightly or wrongly, this is often attributed to the in-

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<sup>75</sup> Presentation by Teri Willey, Chief Executive, Cambridge Enterprise Limited to the ASTP Conference at Heidelberg, 31 May 2007 ([www.astp.net](http://www.astp.net), see full text of presentation at restricted member's area).

crease in patenting by universities in the US since the introduction of the Bayh-Dole Act 1980<sup>76</sup>.

Bayh-Dole obliges royalty sharing and continuing reinvestment in research. Its success has been widely credited with a global diffusion of its core principles and policies into non-U.S. laws, with mixed results. Of course much depends on the institutional and cultural contexts onto which these laws have been grafted. Indeed its reach has been so great that some commentators have voiced concern about the over-commercialisation of research and the downstream "overreaching" of University TTOs into second and third generation technologies which were "descended" from publicly funded research projects. The European Economic Policy Committee<sup>77</sup> noted that the EU was *"far from reaching problems in this area"*.

### 5.1.2. Position on professors' privilege

There is no system of professors' privilege in the US.

Before Bayh-Dole, the US Federal Government<sup>78</sup> retained ownership of all patents granted using government funding. The perception pre-Bayh-Dole was that such technologies were under-utilised. Bayh-Dole was part of a wider series of changes in IP law in the US<sup>79</sup>. Bayh-Dole effectively replaced what has been described as a "web" of Institutional Patent Agreements ("IPAs") which had been negotiated between various federal agencies and individual universities<sup>80</sup>. Therefore its impact as a catalyst to growth in university innovation must be assessed in that context. It was not simply a change in the *ownership* regime that was grafted onto a uniform policy; there had been *no* uniformity before its introduction.

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<sup>76</sup> The University and Small Business Patent and Procedure Act, from now on called the Bayh-Dole Act.

<sup>77</sup> In its Report on Research and Development, 2002

<sup>78</sup> In this section referred to as the Federal Government

<sup>79</sup> Including for example the including the establishment of a specific court of final appeals in patent cases, the CAFC.

<sup>80</sup> MOWERY and SPAMAT, "The Bayh-Dole Act of 1980 and University-Industry Technology Transfer - a model for other OECD Governments?", 2005, *Journal of Technology Transfer*, p. 115.

## Professors' privilege

### *a. Patents*

As noted above, universities, non-profit institutions and small businesses are entitled to elect to retain the patent rights to inventions arising from federal research grants. After such election, the university is responsible to file patent applications at the university's expense. If the university fails to elect to file a patent on the invention, the ownership of the invention reverts to the Federal Government. In addition, the Federal Government retains rights to enforce diligent commercial development of inventions and take ownership of the patent (march-in rights). Even if the university elects to retain a patent, the Federal Government receives a royalty-free, non-exclusive license to use federally funded inventions throughout the world for Federal Government purposes.

In general, the inventor-employee owns his invention even if his invention was conceived or reduced to practice in the course of his employment. However, most U.S. employers have written agreements requiring the employee to assign ownership rights in the invention to their employer. Even without such a provision, the employer may own the invention under an implied-in-fact contract if the employee was "*hired to invent something or solve a particular problem.*" Unsurprisingly, given the importance of patent income to many universities, most U.S. universities have long-standing policies relating to the ownership (and share of revenues from) patents.

### *b. Copyright*

Works produced by contractors under Federal Government contracts are protected under U.S. Copyright Law<sup>81</sup> although works developed by employees of the Federal Government in the course of their employment are excluded from that protection. Copyright works are not governed by the Bayh-Dole Act. The ownership of the copyright depends on the type of contractual instrument between the contractor and the Federal Government, *e.g.* a procurement contract, grant or cooperative agreement.

The default rule under the Copyright Act of 1976 is that the author owns the copyright in the work that he creates. However, an exception to this rule is for employees: their employer will own copyrights which are prepared by a regular employee within the scope of his employment under the work for hire doctrine. The determination of whether an individual is an employee or not is based on the common law doctrine of agency.

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<sup>81</sup> See *Schnapper v. Foley*, 667 F.2d 102 (D.C. Cir. 1981), cert. denied, 455 U.S. 948 (1982)

c. *State Law Funded Research*

This section of this chapter is based on the regulations for research sponsored by the Federal Government, because the Federal Government provides most of research funding in the US<sup>82</sup>. Some of the other fifty states also fund research. Although many states use the Federal Government regulations as the basis for their own regulations, the state regulations vary by state and by program.

## 5.2. Japan

### 5.2.1. Overview

Professors' privilege existed in Japanese national universities until April, 2004. The regime has now changed following a number of significant legislative reforms, and other measures which are detailed below.

### 5.2.2. Position on professors' privilege

From the immediate post-war years to 1978, there was a presumption<sup>83</sup> that all inventions arising in national universities were owned by the nation. However, as in the United States, beginning in the 1970s, private sector interest in university R&D increased, and there was pressure for flexibility concerning IPRs covering university inventions. This was especially so because national ownership implied either no patenting right at all (dedication to the public) or else a licensing right on a non-exclusive basis only.

The compromise that emerged in the form of an important 1978 administrative guidance document was that professors' privilege would apply to inventions made either using corporate donations (un-tied charitable gifts to support a particular professor's research) or using a standard capitation allowance for R&D that every national university faculty member received. The guidance document gave this right not only to professors, but to all national university faculty including assistants (*joshus*). Because of administrative barriers to contractual sponsored research, dona-

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<sup>82</sup> For example, a recent California report noted that the State of California only provides about \$300 million in annual research funding in contrast to \$15 billion in annual research funding in California from the Federal Government

<sup>83</sup> based upon the National Properties Law



tions were the main form of corporate support for university R&D between 1978 and 2004.

This system was easily manipulated. Taking into account the levels of various sources of funding, roughly half of all inventions should have been owned by the nation. But because neither university researchers nor the companies with which they collaborated wanted inventions to be managed by the central government bureaucracies tasked with this function (which were obligated to license non-exclusively), almost all inventions with commercial potential were attributed to donations. The faculty inventors would then transfer their rights (often without any contractual agreement) to the companies that gave them donations. This wholesale conveyance of IP rights (which often arose at least in part from government funding) was the *quid pro quo* for receiving donations and, along with placement of students following graduation, underpinned often close informal relationships between companies and inventive faculty. University administrations tolerated this evasion of the formal technology transfer system.

### 5.2.3. Recent reforms

This system began to change with the enactment of the 1998 Law to Promote the Transfer of University Technologies (also known as the TTO Law) that authorised the formation of government subsidised technology licensing offices associated with universities and legitimised the contractual transfer of faculty inventions to companies. The reforms continued with the 2000 Law to Strengthen Industrial Technology that streamlined procedures for contractual sponsored research (providing a viable alternative to donations as a means for companies to fund university research) and also permitted university faculty to consult for and even manage companies. The 2004 University Incorporation Law gave national universities independent administrative status. Since then, universities can require their faculty to assign inventions to the universities.

The 1999 Law of Special Measures to Revive Industry (also known as the Japanese Bayh-Dole law), allowed individual government ministries to let contractors and grant recipients retain ownership of inventions funded by those ministries. By 2004, most ministries had agreed to let universities retain control over the inventions they funded, and the Japanese Ministry of Education, Science, Technology Sports and Culture (MEXT) issued an advisory document urging national universities to assert ownership over inventions that might have commercial potential in 2002.

Most Japanese universities have now issued internal regulations to the effect that universities should have the right to own inventions funded by non-government sources so long as they were made using university facilities. However, most universities do not assert ownership over inventions by corporate researchers engaged in joint research in university laboratories. Also, it appears that most universities permit graduate students to retain ownership over their inventions. Many universities impose upon themselves an obligation to decide whether they will apply for a patent within a fairly short time period (often only one month) after receiving an invention disclosure. If, after this period, and they have not decided to file an application, barring special agreement with the inventor, the universities will let the inventor retain rights. So in effect, the current system appears to be a hybrid, including elements of mixed university and individual inventor ownership.

Before the recent reforms it was perceived that large companies were generally in favour of maintaining the professors' privilege system. It is interesting to note that any advantage that a system of university ownership might offer to start-ups (by clarifying IP rights and providing an alternative to direct pass-through of inventions to existing, usually large, companies) was rarely mentioned in the advisory reports, nor was the success of US universities in this area.

#### 5.2.4. Current Japanese practice

In general, universities license, but do not assign their rights to companies. However, as described by Kneller and outlined below, co-ownership as a result of contractual joint research or co-inventorship, has become the dominant mechanism of technology transfer in Japan.

To our National Correspondent's knowledge, no Government Research Institute (GRI) or other PRO have a professors' privilege system of ownership. It seems probable a majority of ministries authorise their GRIs to manage their own IP and to so retain license revenue. However, some GRIs, for example, some of the major laboratories of the Ministry of Health, Labour and Welfare, still do not have this authority and inventions are managed by bureaus within those ministries.

#### 5.2.5. Japanese position on remuneration

Under article 35(3) of Japan's Patent Law, an employee *"shall have the right to receive reasonable value"* if she or he transfers his or her invention to their employer.

### 5.2.6. The Japanese grants regime

The response received from the National Correspondent indicated that he was not aware of specific government documents recommending against assignment of university IPR in research results. However, he further stated that universities can assign, if they take the view that is necessary. The fact that they rarely do so suggests that government funding agencies do discourage this. But in fact, the issue is largely moot due to the prevalence of joint ownership which still exists in Japanese law in this area.

## 6. Practical impact

### 6.1. Existing surveys

The OECD surveyed national laws on the ownership and exploitation of IP at universities and other PROs in 2004<sup>84</sup>. It noted that there was concern in the European Union that different national laws on this subject might create barriers to international collaborative research. It concluded that greater compatibility, if not actual harmonisation, of such national rules and policies had the potential to improve technology transfer by reducing transaction costs and increasing transparency<sup>85</sup>. It is noteworthy that it also concluded that in most OECD countries some form of legislative action had been necessary to stimulate the transfer of publicly-funded research.

The OECD concluded that the granting of ownership to the research institution, along with a share in the benefits going to researchers/inventors had emerged as "common practice" in a number of countries. That is borne out by reports received from our National Correspondents as part of the study.

In relation to the impact of professors' privilege in Sweden, universities have not been covered by the general law on employee inventions in the private sector. Co-operation between industry and academia there has involved individual professors, and often it has been informally based on long term mutual co-operation and trust,

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<sup>84</sup> Turning Science into Business, Patenting and Licensing at PROs, *OECD Publications*, 2004

<sup>85</sup> At pages 11 and 12.

over decades. It involves major companies who familiar with the system and do not perceive it to be an obstacle to innovation (admittedly a new entrant might not take a similar view). The model as it exists is regarded by many as working well in its context, especially in *"small homogenous countries, where flexible cooperation based on trust relations is possible"*<sup>86</sup>.

At a January 2005 roundtable discussion on the topic held at Tokai University, there was a slim majority of participants who were against the professors' privilege<sup>87</sup>. There, it was noted that those who were in favour of the privilege argued that it was good for the innovative process because personal (economic) interest was "a good drive".

## 6.2. Workshop

A workshop of key stakeholders invited by the European Commission was held to discuss the initial findings in this chapter<sup>88</sup>. The Contractors received valuable feedback both at the workshop itself, and in subsequent correspondence with the participants.

A participant in the workshop on this topic took the view that professors' privilege in Sweden was limited in its practical application to senior researchers. In addition, they noted that variant contracts were almost always used there where there was public funding involved, effectively meaning that while the default legal system might on paper show professors' privilege might be an issue, in practice it is "worked around" in Sweden as a matter of contract. The participant also noted that the model in Nordic countries works well and that there may not be an appetite for harmonisation as a result.

This view was not shared by all participants, one of whom expressed the view that harmonisation would create a very useful "default rule" which parties would be free to contract out of if they felt it desirable, and said that this would have the benefit of saving companies unnecessary costs incurred through familiarising themselves and

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<sup>86</sup> Professor Niklas Bruun, IPR University Centre, University of Helsinki in his conference paper "Innovation Policy and IPR, Co-operation between Industry and Academia", 6-8 September 2006.

<sup>87</sup> A Global Model for Commercialisation of Academic Research - a Roundtable Discussion hosted by Tokai University, January 1-February 1 2005

<sup>88</sup> Held at Brussels in March 2007

navigating complex and differing systems. It is also necessary to be aware of the local "work-arounds" and gaining such knowledge is neither automatic, nor free in all cases.

A number of participants from industry referred to the fact that "industry hates uncertainty" and were of the view that industrial players were less concerned about the exact ownership of inventions and were more concerned about having predictable legal rules which would give them certainty.

A compromise measure was discussed at the workshop was the possible harmonisation of certain core ownership and remuneration provisions, at a high level, (perhaps through a framework directive). This would increase predictability and certainty on some fundamental issues, while allowing divergent systems to co-exist on others.

### 6.3. Current survey

In response to our questionnaire survey, 68% of respondents indicated that they had not encountered difficulties due to professors' privilege in research, whereas only 32% indicated that they had encountered such difficulties. In reply to this question, one respondent noted that the difficulties encountered by its organisation due to professors' privilege resulted from *"unclear contractual situations"*. Another respondent's perception was that the effect of professors' privilege is that the ownership or commercialisation of IP cannot be guaranteed.

One respondent indicated the analogous situation which exists in its Member State whereby, pursuant to the copyright law and case law of that Member State, the copyright in scientific publications by scientists were owned by the scientists themselves.

A further respondent noted that when the IP belongs to the researcher, the employing institution cannot guarantee that the research results will be transferred to industry at market conditions in accordance with the law relating to state aid and competition law. Furthermore, the existence of professors' privilege results in a risk that researchers are in a position to transfer the IP to their own company without the knowledge of the employing institution. The respondent noted that companies would be required to negotiate and conclude individual contracts with each researcher and doctoral student in a joint RTD-project in order to acquire the IP generated during the project.

47% of respondents agreed that there should be a harmonised EU-wide system of researcher remuneration and 16% strongly agreed (63% in total) whereas 16% of the respondents disagreed and 5% strongly disagreed (21% in total). The remaining 16% did not express an opinion.

73% of respondents either agreed or strongly agreed that non-binding codes of conduct regarding IRP ownership would be useful, whereas 11% disagreed and the remaining 16% did not express an opinion.

Regarding our recommendation for a framework for commercial IP ownership system in the EU, 63% of respondents either agreed (42%) or strongly agreed (21%), whereas 10% either disagreed (5%) and strongly disagreed (5%) with the remaining 26% not expressing an opinion.

## 7. Analysis and conclusions

### 7.1. Analysis of the relative merits of the different regimes

We set out below some of the main perceived merits and demerits of the varying regimes in the context of promoting the exploitation of publicly-funded research results. In some cases, the arguments for and against professors' privilege are unavoidably linked with the larger policy question of how best to promote technology transfer within PROs and HEIs and the creation of greater links with industry for this purpose.

The lack of a consistent approach to the issue of employee remuneration is self-evident. Disparity of approaches to employee remuneration, and the complexity of national laws in this area mean that in any cross-border collaboration, cognisance must be taken of significant differences in national laws in this area. In a recent (draft) European Commission report, approximately half of survey respondents cited IPR ownership issues as being among *"the most problematic issues affecting trans-national collaboration"*<sup>89</sup>. While the resultant costs, including legal costs incurred by the parties in informing themselves about such laws, can be reduced by

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<sup>89</sup> Draft DG Research Report on the outcomes of the "Public Consultation on transnational research cooperation and knowledge transfer between public research organisations and industry", 1 September 2006, M1/FM-DD D (2006) at page 15

the use of contract tool kits such as those prepared for the Crest OMC Expert Group on Intellectual Property<sup>90</sup>, the differences in ownership regimes remain as a barrier to collaboration and must be worked around. Further, the very different basic legal concepts such as employment rights and default ownership rules mean that the use of such toolkits overlays a complex and not uniform base. This places a real limitation on the extent to which such toolkits can be put to use.

### 7.1.1. Professors' privilege systems

#### a. *Incentivisation of Researchers*

Ownership of inventions is a financial incentive for researchers. The salary structures and career paths in PROs and HEIs are often rigid. Performance-related bonuses and other incentives, where they exist at all, are recent measures. As a result, a system of professors' privilege may be regarded by some researchers as a "bonus" incentive outside their normal package. It could also be a motivating factor in a non-pecuniary sense in giving the researcher and his team a more active role in the commercialisation process, and rewarding individual effort. This view has been expressed by one commentator emphasising the potential of professors' privilege as a comparative advantage:

*"The teacher's exemption should be promoted as a competitive advantage to attract innovation. In my view, it is even positive that similar regulations are getting rare in the world. The message should be; "if you are smart and invent things -come to Sweden and profit from your research. If not - stay where you are".<sup>91</sup>*

#### b. *Encouragement of frontier research*

The professors' privilege system may promote greater academic freedom. If researchers have a greater stake in their research results, it may be that they will pursue atypical areas of research which are interesting to them personally. As a result

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<sup>90</sup> Report of the CREST OMC Expert Group on Intellectual Property (2nd Cycle) "Cross-border collaboration between publicly funded research organisations and industry and technology transfer training", 1 September 2006 at page 39

<sup>91</sup> Professor Ulf LANDEGREN, Uppsala University in "Abolition of the Teacher's exemption-consequences and position of the Swedish Biotechnology Industry", SwedenBio, Stockholm, July 2005 at page 3

they may achieve innovations in areas which are not as immediately commercially remunerative, and so may not benefit from as much funding.

In the absence of competition for funds and pressure to exploit inventions, PROs and HEIs may invest time and resources in research which is not necessarily commercially valuable but which benefits society nonetheless. This approach<sup>92</sup> also preserves traditional academic norms and acknowledges academic freedom, which is a fundamental principle of those norms and which is often cited as a reason not to abolish professors' privilege.

In a purely competitive environment where there is intense competition for funds and a corresponding focus on funding from technology transfer and/or private funding, there will be a tendency to focus research efforts in areas of potentially high return (to the detriment of areas of research perceived to be potentially less lucrative) and acceptance of terms from private funding that require research results to be kept private against traditional academic norms<sup>93</sup>.

*c. Lack of Resources to Commercialise*

Researchers do not necessarily have the expertise, knowledge, business acumen, commercial contacts, financial resources to commercialise, or interest in commercialising, their inventions<sup>94</sup>. Therefore, they may not be best placed to be the first owners of their inventions or to realise commercial benefit from them (either to their own benefit or in the benefit of the PRO/HEI).

One report found that *"since most professors have little interest in commercialising their rights, or naively presume that discovery should somehow automatically produce rewards, relatively little use was made of these rights"*<sup>95</sup>.

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<sup>92</sup> *Research and Innovation Issues in University-Industry Relations* Background Information Documents prepared by the SMEs Division of WIPO, para. 22; Cf fn 7.

<sup>93</sup> *Demand vs. Supply Driven Innovations: US and Swedish Experiences in Academic Entrepreneurship* (GOLDFARB, HENREKSON, ROSENBERG), SIEPR Discussion Paper No. 00-35, Stanford Institute for Economic Policy Research.

<sup>94</sup> CALLAN and CERVANTES "Managing Intellectual Property Rights from Public Research", Part V Institutions in "Intellectual Property and Innovation in the Knowledge-Based Economy" General Editor Jonathan D. Putnam [strategis.ic.gc.ca/epic/site/ippd-dppi.nsf/en/ip01237e.html](http://strategis.ic.gc.ca/epic/site/ippd-dppi.nsf/en/ip01237e.html)

<sup>95</sup> According to Etzkowitz, Asplund and Norman (2000) quoted in *Demand vs. Supply Driven Innovations: US and Swedish Experiences in Academic Entrepreneurship* (GOLDFARB,



### *d. Little benefit to departments*

Under a pure system of professors' privilege, the IPR vest solely in the researcher. There is no benefit to the department in which the researcher works. Academics outside areas where research can give rise to commercialisation do not share in the reward and so a relatively small pool of people may be the direct beneficiaries of the right, not the wider scientific community.

### *e. Lack of incentivisation: researcher retention*

In a professors' privilege regime, PROs/HEIs are unlikely to encourage links between researchers and industry due to the risk that researchers may move in response to rewards offered by industry.

## 7.1.2. Institutional ownership systems

### *a. Facilitates technology transfer and competition*

A "bottom up" approach, namely facilitating institutional ownership, will incentivise PROs and HEIs to develop technology transfer capabilities. This achieves policy aims in its own right and, as in the U.S., this may create a competitive environment in which the policies of universities will adapt to reflect demand for valued services. Therefore, policies will evolve to keep and attract researchers, *e.g.* leaves of absence<sup>96</sup>.

On the other hand, professors' privilege does not create any incentive either for the researcher, or for the PRO/HEI if it is state owned or not in a competitive environment. Therefore, it does not necessarily follow that the transfer of IP will have the desired effect<sup>97</sup>.

A clear regime gives certainty on ownership, which is crucial for much-needed early-stage investment in campus companies.

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HENREKSON, ROSENBERG), SIEPR Discussion Paper No. 00-35, Stanford Institute for Economic Policy Research.

<sup>96</sup> *Demand vs. Supply Driven Innovations: US and Swedish Experiences in Academic Entrepreneurship* (GOLDFARB, HENREKSON, ROSENBERG), SIEPR Discussion Paper No. 00-35, Stanford Institute for Economic Policy Research.

<sup>97</sup> *Ibid.*

*b. Lack of incentives to develop infrastructure*

Without automatic ownership falling to the institution, PROs/HEIs have little to no incentive to invest in infrastructure for patenting and commercialisation. It could be argued that the abolition of professors' privilege would provide incentives for the PRO/HEI to build up its infrastructure and to be more active in commercialisation<sup>98</sup>.

*c. Simplification of process/better record keeping*

Institutional ownership permits the creation of TTOs with responsibility for technology transfer. TTOs may centralise and simplify technology transfer procedures. Establishing responsibility in this way leaves researchers to focus on research activities<sup>99</sup>. Institutional ownership may also encourage central or better record keeping by researchers by implementing appropriate procedures, although we have not seen evidence that professors' privilege regimes have been deficient in this area.

*d. Awareness of technology transfer*

An advantage of TTOs and institutional ownership is that they may increase awareness of technology transfer amongst researchers and the benefits of commercialisation of research<sup>100</sup>.

*e. Mobility of researchers may make it more difficult to protect IPR*

The freedom of researchers to move to other PROs/HEIs make professors' privilege a complicating factor in protecting IPR.

## 7.2. Conclusions

It could be argued that the existence of differing IPR ownership regimes in some Member States simply does not matter in that they tend to be default rules. In other

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<sup>98</sup> SELLENTHIN, *"Who should own university research? – an exploration study of the impact of patent rights regimes in Sweden and Germany on the incentives to patent search results"* [2004] Institutet Foer Tillvaxtpolitiska studer, at p. 55.

<sup>99</sup> *Research and Innovation Issues in University-Industry Relations* Background Information Documents prepared by the SMEs Division of WIPO, para. 16.

<sup>100</sup> *Research and Innovation Issues in University-Industry Relations* Background Information Documents prepared by the SMEs Division of WIPO, para. 17.

words, parties can contract out of the rule should they wish. We take the view that this argument is not convincing as it ignores the deterrent effect of the very existence of that default rule or, more precisely, the existence of many varied default rules across the EU. Further, it is not straightforward to determine the scope and extent of these default rules, and so for researchers, or other users of the system, not experienced in or knowledgeable about IPR, it is in our view worth examining whether separate and diverse regimes should be retained in the Member States.

As between pre-emption rights and automatic ownership, we have a strong preference for automatic ownership because it creates a bank of IP; the former does not. Furthermore, an automatic right of reversion does necessarily benefit the researcher and if it does, it should arguably be available to a wider group of beneficiaries.

The existence of professors' privilege (and variant IPR ownership regimes) acts, in our view, as a potential barrier to cross-border research collaboration, and its removal by harmonisation needs to be considered. Some argue that the abolition of professors' privilege is not needed since it is a default rule (where it exists) and can be contracted out of in many cases. However such a stance fails to take, in our view, adequate account of the potential barrier nature of the mere presence of the law. A recent Swedish report<sup>101</sup> concluded that harmonisation in this area was desirable, given the tendency of IPR to overlap so that an *"object of intellectual creativity could be covered by several divergent and perhaps conflicting rights"*. It went on to add that divergent national and international rules and employers' and employees' rights created uncertainty, especially when companies acted across borders. The report recommended that the work begun on this topic in that report be continued (including examining the issue of remuneration) before it would be possible to harmonise employer's rights to employee inventions.

**Patents** – As noted above in relation to public research acts, inventions have tended to be emphasised in actions taken to date. Whilst patents tend to be a key mechanism for protecting knowledge<sup>102</sup>, this should not be to the detriment of other IPR which can be of significant value, especially to SMEs<sup>103</sup>. There is evidence of a gen-

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<sup>101</sup> *Intellectual Property Law and Ownership in Employment Relationships*, page 97 et seq in the book entitled *IT Law for IT Professionals* (ed. Sjöberg Magnusson), Studentlitteratur, Lund 2005, page 7

<sup>102</sup> See *Patents and Innovation: Trends and Policy Challenges*, OECD 2004

<sup>103</sup> See *Intellectual Property (IP) Rights and Innovation in Small and Medium-Sized Enterprises*, WIPO

eral bias in the public research/IPR systems towards attributing value to patents only rather than other IPR such as utility models, copyright and industrial designs (although copyright ownership in particular tends to be viewed as a right of the researcher) in this context. Any codes of practice or harmonisation of the legal regimes should be as broad as possible to ensure the results are as useful as possible.

**Commercialisation** – Only some countries place a specific obligation on PROs/HEIs to commercialise research results and most Member States do not require the researcher to notify the PRO/HEI of inventions. The structures in place that we have seen tend to reflect a precarious, and often artificial, balance between the "stick" and the "carrot" approach to incentivising researchers.

**Pre-Emption Rights v Automatic Ownership** – One effect of the pre-emption system is that unless claimed by the employer, invention rights will vest in employees. In terms of a university, for example, this means that instead of building up a body of IP which can be re-utilised for academic and commercialisation purposes, the entitlement to re-utilise these IPR is lost.

**Definition of Employee** – A significant issue that arises in almost all Member States in the context of research is whether a particular researcher is an employee of the relevant PRO or HEI. This is a question of fact and law. If they are not, then the IPR may not be owned by the PRO/HEI unless it is a commissioned work in Cyprus or falls within certain exceptions in the UK and Ireland. This can have important consequences for ownership of IPR as otherwise an assignment of the IPR will be required to ensure that the rights vest in the PRO or HEI.

The impact of such different systems can not be examined in isolation, and cognisance should be taken of the impact of funding and other national regimes on research. For example, in Germany, the change of law in 2002 was accompanied by the establishment of a patent and commercialisation office in each Federal State (*Länder*). These are known as the PMA (Patent Marketing Agencies). Collectively, these PMAs form the Technologieallianz e.V.<sup>104</sup> which is a single national network representing over 200 research institutes.

An issue arising under each system is a lack of clear and exhaustive default systems of IPR ownership where specific provisions do not apply. This is an issue specifically for the proper organisation and understanding of who owns publicly funded research (where it is not an invention) and for ownership of IPR generally. In rela-

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<sup>104</sup> [www.technologieallianz.de](http://www.technologieallianz.de)

tion to achieving a European Research Area and implementing the Lisbon Strategy<sup>105</sup> and the Barcelona objective<sup>106</sup>, and, in particular, the purpose of furthering the knowledge and effectiveness of PROs/HEIs in the context of technology transfer and knowledge of other Member States IPR systems, there seems to us be a clear benefit in harmonising the fundamental principles applied in each Member State in order to secure greater compatibility of the systems. This would assist in the building of co-operation, sharing of expertise in technology transfer, reducing transaction costs and would likely encourage cross-border research activities. This conclusion was also reached by the OECD Survey *"Turning Science into Business; Patenting and Licensing at Public Research Institutions"* 2003. Gower, in his Review of Intellectual Property in 2006, refers to the desirability of greater international IP coherence, especially at a European level<sup>107</sup>.

EURAB, the European Research Area Advisory Board now ERAB, in its final report of May 2007 recommended that there ought to be greater harmonisation of guidelines and practices across Europe regarding the ownership and exploitation of IPRs arising from collaborative research<sup>108</sup>.

The OECD Economic Survey on the European Economic Area<sup>109</sup> used three separate indicators of measuring innovation and the diffusion of new technologies. These were:

- investment in knowledge as a percentage of GDP;
- numbers of researchers per thousand employed; and
- share of countries in triadic patent families<sup>110</sup>.

Using every one of these indicators, there was no correlation between the existence or otherwise of a professors' privilege system, (or the variant forms of institutional ownership) and a country's positioning relative to other countries, or to the European average position. On the contrary, Sweden outperformed most other Euro-

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<sup>105</sup> Lisbon European Council Conclusions March 2000.

<sup>106</sup> COM (2003) 226 "Investing in research: an action plan for Europe".

<sup>107</sup> [www.hm-treasury.gov.uk/media/6/E/pbr06\\_gowers\\_report\\_755.pdf](http://www.hm-treasury.gov.uk/media/6/E/pbr06_gowers_report_755.pdf) at p. 124

<sup>108</sup> EURAB 07/2007: Research Management in the Area, May 2007.

<sup>109</sup> 2004, "Regions at work".

<sup>110</sup> That is, patents which have been filed in the EPO, USPTO and JPTO, which are usually considered to be high-value patents as only such patents would justify the cost of multiple applications.

pean countries under each of the indications used by the OECD. The latest available European Innovation Scorecard<sup>111</sup> produced a similar result, but the strength of academic research has not resulted in a high scoring for Sweden in the commercialisation of that research, nor in short-term economic growth<sup>112 113</sup>.

Accordingly, using the Open Method of Co-ordination, the introduction of a framework for European research systems should be considered and adopted. It should not be overly restrictive of parties' freedom to agree their own terms, but should incorporate the advantages of the systems described above. The issues arising in relation to IP ownership should also be considered in the context of the IP regime in the EU generally.

## 8. Recommendations

A large number of disparate IPR ownership systems are in operation in the EU. These systems relate not only to ownership of research results but also generally to the IPR regimes in place. Below them, sit layers of subsidiary hard law and soft law, including grant policies and University /HEI/PRO policies. The systems are also unduly focused on inventions to the detriment of any value that may arise in respect of other IPR especially in the context of publicly funded research.

In our view this variance is not conducive to achieving greater commercialisation of research and it is difficult to escape the conclusion that such asymmetry is at least a potential barrier to research, particularly in its impact on cross-border research.

There is little to no evidence that professors' privilege results in better technology transfer to industry and most evidence is to the contrary, namely that institutional ownership provides the better framework for this. This view is not held by all stakeholders, and the privilege is seen by some as an attractive feature of their legal system, not to be removed without potentially damaging their existing systems.

In the absence of other reforms, the abolition of professors' privilege alone is unlikely to benefit technology transfer or remove obstacles from cross-border research

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<sup>111</sup> Commissioned by the European Commission

<sup>112</sup> This phenomenon has sometimes been termed the "*Swedish paradox*".

<sup>113</sup> T. ANDERSSON, "The Paradox of the Innovation System: Leader in Europe?," in P. LAREDO and F. SACHWALD (eds.), *Le Système Français d'Innovation dans l'Economie Mondiale: Enjeux et priorités*, Infi, Paris, 2005.

in the EU. However, taken as part of an overall policy of commercialisation of publicly-funded research, institutional ownership is, in our view, preferable as a system of ownership. However, the issue of ownership does not exist in a vacuum and other factors need to be taken into account in assessing the merits of any system, and these are beyond the scope of this chapter. These include the availability and use of professional IP management, knowledge transfer experts etc. to assess optimum exploitation.

While other reports have concluded that no further action is required, we recommend that harmonisation of IP ownership be considered.

Accordingly, using the Open Method of Co-ordination, the introduction of a framework for European IPR ownership systems should be considered and adopted. It should not be overly restrictive of parties' freedom to agree their own terms, but should incorporate the advantages of the systems described above. Harmonisation measures should not go beyond what is necessary to achieve a common framework for IPR ownership and not all related provisions need to be harmonised, for example it may not be necessary for each Member State's employment laws to deal with employee remuneration for inventions in an identical way.

The merits of a harmonised approach of remuneration should be examined. Remuneration is an element of both employment law and IPR and harmonisation of both these areas has been one of the EU's successes to date. However, the administrative burden (both time and cost) of any such remuneration scheme needs to be considered. However, it is unclear whether remuneration of researchers is an area which requires harmonisation and it may best be addressed at national level.

Further study should be carried out on the impact of grant regimes but a prohibition on national territorial restrictions on use or ownership of IPR under grant agreements should be considered (except perhaps in the limited case of use for stimulating economic activity in economically disadvantaged regions).

Member States which have not already done so should prepare and publish non-binding codes and guidance in relation to the IPR issues in technology transfer and generally in relation to IP issues arising in PROs/HEIs. In our view, developing and expanding EU-level codes/guidelines would assist in this process. Model agreements for research should be developed at national level.

## Chapter 3

# Prior user rights

"While some Member States have included in their IP law a *"prior user right"* or *"prior user defence"*, such rights are not available in the whole EU, and do usually not apply (or not to the same extent) to all categories of IPR. Moreover, where they are available, they often have different scopes and are subject to differing applicable conditions. This results in a lack of uniformity which may be detrimental to companies and organisations operating at an EU level."

This chapter discusses prior user rights with respect to patents, utility models, registered designs and semiconductor topography rights. (No prior user rights were reported for copyright, unregistered designs, database rights and plant breeders' rights). Trademarks are subject to specific prior user rights, which were harmonised by the First Trade Mark Directive, but which are not further discussed in this chapter.



## 1. Structure of this chapter

In section 2, the nature and characteristics of typical prior user rights are considered. Section 3 then reviews prior user rights under the existing laws of the Member States. Section 4 provides an overview of the law as it stands in the United States and Japan for comparative purposes. In section 5, we provide an assessment of the practical impact of prior user rights<sup>114</sup>, followed in section 6 by an analysis of our legal findings and the results of our survey of relevant stakeholders.

## 2. The concept of prior user rights

### 2.1. Introduction

#### 2.1.1. Patents and utility models

In the case of patents and utility models, a prior user right can be defined as a non-transferable personal right of a prior inventor to use an invention that is patented by another person, but was not publicly disclosed by the prior user. Prior user rights act as a defence against the patentee and do not invalidate the patent (*i.e.*, they do not destroy the required novelty of a patent).

In a first-to-file patent system<sup>115</sup>, as used in most countries, prior user rights mitigate the effects of the strict criteria of the first filing, and thereby introduce fairness for a prior inventor, whilst maintaining an incentive to patent (and therefore publish) inventions. Prior user rights are therefore almost unanimously recognised as just and desirable in a first-to-file system on the grounds of both fairness and efficiency<sup>116</sup>. The fairness introduced by prior user rights can even be considered as key to the very existence and balance of a first-to-file system. By virtue of prior user rights, first-to-file systems can combine the advantages of procedural certainty of

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<sup>114</sup> Interviews of relevant stakeholders were conducted during the course of this study.

<sup>115</sup> In a first-to-file system, the right to a patent is granted to the first person to file a patent application for protection of that invention, regardless of the date of the actual invention.

<sup>116</sup> S. STROBEL, "Fourth biennial patent system major problems conference; prior user rights: introductory comments", *IDEA (the Journal of Law and Technology)*, 1994, note 14, page 208

the filing date with some fairness for earlier inventors. Hence, prior user rights can temper the sometimes inequitable shortcomings of a first-to-file system<sup>117</sup>.

On the contrary, in a first-to-invent patent system, as used in the United States<sup>118</sup> and the Philippines, the actual first inventor will be the inventor entitled to a patent, even if another person files a patent application before the first inventor<sup>119</sup>. Through so-called "*interference proceedings*", the actual first inventor can claim the patent registered by another person. Some of the advantages that may be rendered by prior user rights to the first inventor are thus implicitly embedded in the very concept of a first-to-invent system, so that the general perception is that there is a reduced need for prior user rights. Some commentators have argued that indeed the U.S. system tolerated and tacitly accepted the notion of prior use rights in practice<sup>120</sup>.

While the debate between the first-to-file and first-to-invent systems is long-running and beyond the scope of this chapter, it should be noted that prior user rights lie at the borderline between both systems. Prior user rights are particularly commented on and criticised by U.S. writers, due to the reduced need for prior user rights in the U.S. patent system and the stigmatisation of trade secrets as socially reprehensible<sup>121</sup>. On the contrary, in the EU, prior user rights exist in all Member States (except Cyprus) and seem to be accepted as such, although the underlying conditions differ between Member States. Consequently, legal commentaries and case law on prior user rights are quite limited in the EU.

The possibility of adopting prior user rights is also recognised in international instruments such as the GATT<sup>122</sup> and NAFTA treaties<sup>123</sup>.

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<sup>117</sup> F. A. UBEL, "Who's on first? The Trade Secret Prior User or a Subsequent Patentee", *Journal of the Patent and Trademark Office Society*, 1994, note 16, pages 433-35.

<sup>118</sup> It should be noted that the United States may convert to a first-to-file system in the near future, as set out in section 4.1.1.d below.

<sup>119</sup> Provided, however, that the first inventor is diligent in reducing the application to practice

<sup>120</sup> K. HARRIEL, "Prior User Rights in a First-to-Invent System: Why Not?", *Journal of Law and Technology*, 1996, page 3.

<sup>121</sup> S. STROBEL, *o.c.*, page 208

<sup>122</sup> Article 30 of GATT (including TRIPS) reads as follows: "*Members may provide limited exceptions to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the*

### 2.1.2. Registered designs and topography rights

With respect to designs, the same principles apply *mutatis mutandis* to the prior, non-registered design of a designer. Hence, prior users of registered designs are granted a personal defence against another person who has subsequently registered the design. The same holds true for topography rights.

## 2.2. Typical characteristics

The following typical characteristics of prior user rights can generally be found in countries which recognise prior user rights. The reader is referred to section 3 for a more detailed discussion of the specific characteristics that are found in each Member State.

**Prior use** – The first requirement of prior user rights obviously relates to a certain type of prior use of the invention or design. Some Member States demand effective *use*, while it is sufficient in other Member States to merely *possess* the invention. The reference date is the date on which the patent or design is filed by the patentee or right holder; if a priority date is recognised, then the priority date will be the reference date. Unlike Italy (which requires use *within one year* preceding the reference date)<sup>124</sup> and the United States (which requires use *at least one year* before the reference date)<sup>125</sup>, the prior use is usually not limited to a certain period before the reference date.

**Preparatory acts** – In addition to recognising possession or (commercial) use of the invention / design before the reference date, most countries also acknowledge preparatory acts as triggering a prior user right. Moreover, several Member States ex-

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*legitimate interests of the patent owner, taking account of the legitimate interests of third parties."* Prior user rights are thus permitted, but not required by this article (K. MAGRI, "International Aspects of Trade Secrets Law").

<sup>123</sup> Similar to GATT, article 1709 §6 reads as follows: "A Party may provide limited exceptions to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking into account the legitimate interests of other persons."

<sup>124</sup> No prior user right will be accorded for a use of the invention that took place outside this period of 12 months (see Section 68, paragraph 3, of the Italian Code of Industrial Property).

<sup>125</sup> The scope of prior user rights in the United States is very limited: see section 4.1.1.b below.

plicitly require *serious and effective* preparatory acts to have been undertaken. Even if such additional requirements with respect to preparatory acts are not explicitly foreseen in legislation, case law sometimes seems to arrive at the same result.

**Geographical limitations** – Several Member States require the prior use – or preparatory acts – to have taken place within their territory. Some National Correspondents indicated that such geographical limitation may be void in light of the internal market principles of the European Union. Moreover, the geographical limitation can cause conflicts with the novelty requirement of patents and/or utility models, whereby a worldwide standard is applied.

**Secrecy** – Prior user rights depend on – and are only relevant in relation to – a valid patent. When the prior user would have publicly revealed the invention or design prior to the reference date, the prior invention or design generally would constitute prior art, which would destroy the novelty required for a patent, and thus forfeit the possibility to register a patent or design. Hence, the existence of a prior user right assumes that the prior invention / design was kept secret.

**Defence** – Prior user rights act as a defence against the patentee or right holder, and allow the prior user to use the patent / design holder's IPR. Prior user rights can therefore only be considered "rights" in relation to the patent / design holder. In most cases, the prior user cannot enforce any rights against third parties, so that he cannot himself prohibit third parties from using the invention or design.

**Personal** – The rights granted to a prior user are personal, and cannot be licensed to third parties. In most countries, prior user rights can only be transferred to other third parties together with the entire company. In some cases, legislation also explicitly foresees transfer together with a part of a company.

**Good faith** – Case law and/or legislation of most Member States require the prior user to have acted in good faith when creating the invention or design. Good faith will not exist when the invention was (in)directly conceived based on the ideas of the patentee, which can, for example, be the case when the knowledge required for the invention was disclosed through a former employee of the patentee.

**Claimable** – Prior user rights do not come into existence until a third party registers a patent / design that relates to the same invention / design. Hence, prior user rights will only become relevant and will only receive visibility when the prior user defends his position vis-à-vis the patentee or right holder. However, certain Member States allow a prior user to claim an acknowledgement of the prior user right

from the patentee or right holder. In case the latter does not grant the right, the prior user can, in some Member States, bring an action before a court to have his prior user rights legally recognised.

### 3. The current situation in the EU

#### 3.1. Patents

##### 3.1.1. Overview

Except for Cyprus, all Member States investigated in this report recognise prior user rights in patent law. While the essential elements of prior user rights (*i.e.*, the use of an invention before the filing, and the continued use free of charge afterwards) are identical for all Member States, the actual implementation of the right differs between the Member States. These minor differences are to be expected, since no harmonising legislation has yet been adopted for prior user rights<sup>126</sup>.

##### 3.1.2. Implementation differences

###### *a. Prior use*

The one area where there seems to be most variation between Member States, is the conditions for prior use. Member States can essentially be divided into two main categories as regards the conditions for prior use:

- **1. Use** – Most Member States refer to the *use* of the invention before the filing date / priority date as the most essential requirement for prior user rights. Within this main category, several variations can be identified. It is question-

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<sup>126</sup> The WIPO efforts did not result in enforceable legislation — for example, the draft article 308 (*"Privilege of Prior User"*) submitted by the International Bureau to the Committee of Experts on the Harmonisation of Certain Provisions in Laws for the Protection of Invention (1989) and the draft Article 20 of the Basic Proposal for the draft Patent Law Treaty. See Paris Union, Diplomatic Conference for the Conclusion of a Treaty Supplementing the Paris Convention as far as Patents are Concerned, The Hague, June 3-7, 1991: Draft Treaty, (1991) 30 Industrial Property 118 at 127.

able whether these variations lead to actual practical differences across these Member States.

- **Mere use** – The laws of Austria<sup>127</sup>, the Czech Republic, Estonia<sup>128</sup>, Germany, Greece, Ireland<sup>129</sup>, Lithuania, Poland, Portugal, the Slovak Republic, Slovenia, Spain and the United Kingdom merely require the prior user to have "used" or "exploited" the invention before the filing date / priority date. For Austria, it was reported that "use" includes acts such as commercial reproduction, introduction, sales, etc. — effectively requiring both an objective aspect (*use*) and subjective aspect (*serious will to use*).
- **Commercial use** – Denmark<sup>130</sup>, Finland<sup>131</sup>, Hungary and Sweden<sup>132</sup> require the prior user to have "commercially" used the invention before the filing date or priority date.
- **Use in the company** – Italy requires the use to be "in" the same business (within twelve months preceding the patent filing).
- **Use for the company** – Malta requires the use to be "for" the company of the prior user.
- **Use in or for the company** – Latvia and the Netherlands<sup>133</sup> require use "in or for" the company of the prior user.

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<sup>127</sup> Austria also requires "*possession*", which means that a prior user can only invoke his rights if, at the moment of application for registration of a patent, he already had full and encompassing knowledge of the invention.

<sup>128</sup> Estonia requires "*use for industrial application*".

<sup>129</sup> The criterion for both Ireland and the United Kingdom is to have performed acts which would constitute an infringement of the patent, if it were in force. It is assumed that this condition approximates "*mere use*".

<sup>130</sup> Danish legislation does not contain a definition of the term "*commercially*". However, this term is referred to in many Danish laws, and as such is a so-called "*legal standard*", intended to differentiate such activity from a mere private or personal use.

<sup>131</sup> As is the case for several other Member States, the Finnish Patents Act (and its preparatory works) do not provide any definition as to the meaning of "commercially". However, according to Finnish case-law, the one-time use of the invention within the sphere of business activities has been found to suffice.

<sup>132</sup> Under Swedish law, "*commercially*" can mean, *inter alia*, (i) making, offering, putting on the market or using a product protected by a patent or importing or possessing such product for these purposes; (ii) using a process which is protected by the patent, or offering the process for use in Sweden; (iii) offering, putting on the market, or using products made by a process protected by the patent or importing or possessing the product for these purposes.

- **2. Possession** – In contrast with the requirement of "use" of the invention, patent legislation in Belgium, France and Luxembourg<sup>134</sup> refers to the "possession" of the invention prior to the filing date or the date of priority. According to French and Belgian legal doctrine, it is even sufficient that the owner has *perceived* the idea of the invention: he need not have actually used the invention<sup>135</sup>.

Interestingly, France introduced a system in 1914 for this reason – the so-called "*enveloppe Soleau*" – whereby a letter is sent to the National Industrial Property Institute, which proves the date and the subject-matter of the invention, so that evidence is secured, without the knowledge required for of the invention being circulated and without the production being started. A similar system also exists in Belgium (iDepot, see [www.idepot.be](http://www.idepot.be)). Both systems are quite widely used and well regarded.

Compared to the requirement of "use", the mere "possession" of the (underlying idea) of the invention obviously lowers the bar to invoke a prior user right. It remains to be seen, however, whether this semantic difference also results in a practi-

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<sup>133</sup> Dutch patent legislation actually refers to "produce or apply". For the sake of clarity, we assume this approximates the use.

<sup>134</sup> Austrian law also requires possession, but this is not the only criterion (also prior use and good faith).

<sup>135</sup> L. OSTERBORG, "Towards a Harmonised Prior User Right Within a Common Market System", 12 *Int'l Rev. Indus. Prop. & Copyright* 447, page 452.

This view is also supported in France by old case law (Tribunal de Grande Instance Seine, 16 January 1962, Annales 1963.400; Tribunal de Grande Instance Paris, 2 July 1976, Dossier Brevets 1977.4.1), recent case law ("*the owner must master the creation and reproduction of the invention considered*": Paris, 7 November 1996, Annales, 67, page 53) and legal doctrine (F. POLLAUD-DULIAN, *Droit de la propriété industrielle*, 1999, page 235: "... *without it being necessary to establish the existence of any act of exploitation, besides the precise knowledge of the invention*"; J. FOYER and M. VIVANT, *Le droit des brevets*, 1991, page 319: "*Several first-class authors, including Roubier, have considered that one must also have started to exploit the invention (...), this opinion is also found in some case law. We think, however, that such adds an additional requirement to the law.*").

As for Belgium, recent case law adheres to the same principle: "*Anyone who has a practical and complete knowledge of the invention, so that he was capable to commence commercialisation at the moment the patent was granted (...) can call upon the right of prior use.*" (Rechtbank Eerste Aangleg Gent, 24 April 2006). The same applies to recent legal doctrine: "*Prior personal possession of a patent refers to the case where a person ('the owner') had a practical, complete and good faith knowledge of the invention, so that he could commence the exploitation (...).*" (M. BUYDENS, *Droit des brevets d'invention et protection du savoir-faire*, 1999)

cal difference in case law compared to the other Member States. French legal doctrine and case law do not seem to be unanimous in this regard. According to some commentators<sup>136</sup>, there is relatively little practical difference between prior possession and prior use, because preparatory acts are usually also considered and the threshold requirements of personal possession are rather high in practice.

*b. Preparatory acts*

With the exception of Italy, Belgium, Luxembourg and France, every Member State allows preparatory acts to also qualify as prior use. As those preparatory acts constitute a further relaxation of the criteria to uphold a prior user right, almost all<sup>137</sup> Member States require substantial proof for these preparatory acts. As for Belgium, Luxembourg and France, it seems logical, in light of the *possession* criterion, to not additionally insist on preparatory acts having been made by the "second inventor" as the threshold for accepting possession of an invention is even lower than the threshold for accepting preparatory acts.

Legislation in those Member States that allow for preparatory acts, uses wording such as "*effective and serious preparations*" (Hungary, Ireland, Lithuania, Portugal, United Kingdom), "*verifiable preparations directly aimed at the use of the invention*" (Slovak Republic), "*substantial preparations for commercial use*" (Denmark and Sweden) and "*substantial preparations for exploitation*" (Poland). Such wording is almost identical across those Member States.

*c. Geographical limitation*

The majority of Member States require the use, possession or preparatory acts to have taken place on their territory: acts outside the territory do not qualify for the emergence of a prior user right. Exceptions include the Czech Republic, Italy, Lithuania and Luxembourg, where there is no geographical limitation.

*d. Good faith*

Most Member States also require the use or possession of the invention (or the preparatory acts) to be done in good faith. While legislation in the Czech Republic, Germany, Italy and Luxembourg does not explicitly impose a good faith require-

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<sup>136</sup> F-K. BEIER, (1987), IIC, 312; as cited in J.U. NEUKOM, "A prior use right for the community patent convention", *EIPR*, 1990, 12(5), 165-169

<sup>137</sup> The exceptions are the Czech Republic and Slovenia



ment, it can be assumed with some certainty that courts will not permit inventors acting in bad faith to successfully claim a prior user right. This assumption is already explicitly confirmed in German case law<sup>138</sup>.

Interestingly, the Estonian National Correspondent reported that Estonian law upholds a negative criterion: the required absence of bad faith. According to Estonian patent law, the use of an invention is in bad faith if the inventor knew, or should have known, that the invention for which he claims a prior user right, was intended to be filed as a patent.

### *e. Rights conferred upon the prior user*

The prior user receives a right to continue using the invention, or to effectively start using the invention (the latter for preparatory acts)<sup>139</sup>. The question arises as to what extent this right can be exercised. Can the prior user alter his production process and/or also create different products based on the positive (affirmative) right he has received?

Belgium, the Czech Republic, France, Greece, Luxembourg, the Netherlands and the Slovak Republic place **no explicit limits** on the extent of the prior user right<sup>140</sup>. Dutch legal doctrine<sup>141</sup> explicitly states that the prior user is not bound by the form or the extent of the prior production.

The laws of Ireland, Lithuania, Malta and the United Kingdom do not explicitly limit the extent of the prior user right, but only allow the prior user to continue to do "*such [prior] acts*". Due to the limiting word "*such*", the extent of the prior user rights is **implicitly limited** to the acts done before the filing date or the priority date of the patent. Legal doctrine of the United Kingdom provides, for example, that

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<sup>138</sup> C. HEATH, *o.c.*, page 214: "*German courts also require good faith use*". This is confirmed by case law: Bundesgerichtshof, BGH GRUR 1964, 673; dissenting opinion, however, in KOHLER, "*Handbuch des deutschen Patentrechts*", Mannheim, 1900, 471.

<sup>139</sup> In the Czech Republic and in the Slovak Republic, however, the wording of the prior user right is expressed in a *negative* way: the patent is said to have "*no effect against the prior user*"

<sup>140</sup> i.e. no limits in addition to the limit of the personal use of the prior user right, as discussed below.

<sup>141</sup> L. WICHERS HOETH, *Kort begrip van het intellectuele eigendomsrecht*, 2000, page 50

while a prior user may not expand into other products, the prior user is not confined to making things which are absolutely identical<sup>142</sup>.

Austria, Denmark, Estonia, Finland, Germany, Hungary, Italy, Latvia, Poland, Spain and Sweden **explicitly limit** the extent of the prior user right: the use may not exceed the scope or extent of the prior (commercial) use (Germany, Hungary, Italy, Latvia, Poland and Spain<sup>143</sup>), must retain the same general nature (Estonia and Sweden), or must maintain the general nature (Finland).

*f. Claimable*

Austria, the Czech Republic, Estonia, Lithuania and the Slovak Republic explicitly allow a prior user to obtain from the patentee a confirmation of the prior user right. If the patentee is unwilling to provide such confirmation, it can be obtained through court proceedings<sup>144</sup>. No explicit right to claim prior user rights was reported for the other Member States.

*g. Transfer*

The laws of all Member States consider the prior user right as a personal right, which is limited to the prior user himself and which prohibits licensing by the prior user. Hence, all Member States provide that the prior user right can only be transferred together with the company.

National Correspondents from France, Lithuania and the Slovak Republic indicated that the prior user right can also be transferred together with a *business entity*. Obviously, this provides a prior user with more flexibility to transfer his rights. It is not clear to what extent the laws of the other Member States allow transfer together with a business entity.

Interestingly, Ireland and the United Kingdom allow a prior user in a partnership to authorise his partners to perform the acts performed before the filing / priority date of the invention.

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<sup>142</sup> W. CORNISH and D. LLEWELYN, *Intellectual property: patents, copyright, trade marks and allied rights*, 2003, page 255

<sup>143</sup> Spanish legislation also holds that the use must be "*to meet the reasonable needs of their enterprises*".

<sup>144</sup> It is unclear whether Austrian law explicitly provides for the court proceedings possibility.

*b. Period limitation*

Italy limits the period for which prior user activities are recognised to acts committed within twelve months before the filing date of the patent. While a similar limitation exists in the United States with respect to the first inventor defence (see below), no such limitation was found in Member States other than Italy.

**3.1.3. Lack of litigation**

Very few cases involving prior user rights are brought to court: in Europe according to a 1981 study<sup>145</sup>, there were only four cases involving prior user rights in France during the 1960s and 1970s. There were no cases in England or Italy (where prior user rights are recognised since 1977 and 1979, respectively), and only a few cases each year in the Netherlands. A limited survey across correspondents also indicates that the impact of prior user rights on patent litigation seems to be low.

The source of this lack of litigation regarding prior user rights should be further investigated. Possible explanations could be that<sup>146</sup>:

- patentees and prior users resolve conflicts through amicable solutions, instead of going to court;
- few parties qualify as prior users, or lack the evidence to prove the prior use<sup>147</sup>; or
- defendants may be unaware of their prior user rights.

**3.1.4. Community patent<sup>148</sup>**

Article 12 of the proposal for a Regulation on the Community Patent states that:

*1. A Community patent may not be invoked against a person who, in good faith and for business purposes, had used the invention in the Community or had made effective and serious preparations for such use before the filing date or, where priority has been claimed, the priority date of the application on the basis of which the patent is granted (hereinafter referred to as "the prior user"); the prior user*

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<sup>145</sup> L. OSTERBORG, *o.c.*, page 456

<sup>146</sup> K.M. KUPFERSCHMID, *o.c.*, page 224-226

<sup>147</sup> L. OSTERBORG, *o.c.*, pages 461-462

<sup>148</sup> Please note that, as the Community patent proposal has not been adopted, we have not dealt with it in detail and simply used it here for comparative purposes.

*shall have the right, for business purposes, to continue the use in question or to use the invention as planned during the preparations.*

*2. The right of the prior user may not be transferred either during the user's life-time or following his death other than with the user's undertaking or that part of the undertaking in which the use or the preparations for use took place.*

The proposed treatment of prior user rights creates a mix of the typical characteristics of a prior user right: use for business purposes (or effective and serious preparations), good faith, continued use limited to the scope of the prior use and transfer together with (part of) an undertaking.

The proposal therefore most closely aligns with current legislation in Finland, Malta, Latvia and Sweden.

### 3.2. Summary of this section

While the qualification criteria for prior user rights seem, at first glance, to be similar across the EU, several differences exist which may hamper the European internal market. The most notable differences are:

- Several possible criteria exist as to which type of "use" is required: (commercial) use, use *within* the company, use *for* a company, or mere possession / conception of the idea. As the threshold towards acceptance is significantly lowered in case the possession / "conception of the idea" criterion is upheld, harmonisation is recommended.
- The majority of Member States only recognise prior user rights for actions performed on their own territory. This limitation may be contrary to the internal market principles of the EU Treaty.
- The limitations on the rights of the prior user – e.g. the degree of permissible improvements or modifications to the invention<sup>149</sup> – are often imprecise and vague and differ between Member States.
- Italy limits the period for which prior user activities are recognised to acts committed within twelve months before the filing date. No such limitation exists for other Member States.

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<sup>149</sup> See also J.U. NEUKOM, *o.c.*

## Prior user rights

However, the extent to which prior user rights are used in practice and the frequency of, and reasons for, litigation relating to such rights, should be further investigated. A preliminary examination seems to indicate that prior user rights do not have a profound practical impact and do not result in significant levels of litigation.

	Use or possession	Preparatory acts	Geographical limitation	Good faith required	Effect or right	Claimable	Transfer
<b>Austria</b>	comm. use	required acts for exploitation	■	■	use	■	business entity
<b>Belgium</b>	possession	/	■	■	use		company
<b>Cyprus</b>	<i>N/A: no prior user rights</i>						
<b>Czech Republic</b>	use	prep.	/	/	patent has no effect	■	company
<b>Denmark</b>	comm. use	substantial remedies for comm. use	■	■	retain its general character		company
<b>Estonia</b>	use	serious prep.	■	■	retain the same general nature	■	company

	Use or possession	Preparatory acts	Geographical limitation	Good faith required	Effect or right	Claimable	Transfer
<b>Finland</b>	comm. use	substantial prep. for comm. use	■	■	maintain general nature		business
<b>France</b>	possession	/	■	■	use		(part of) company
<b>Germany</b>	use	serious prep.	■	(■)	not exceed prior use scope		business
<b>Greece</b>	use	necessary prep.	■	■	use		business
<b>Hungary</b>	comm. use	effective and serious prep.	■	■	not exceed prior use extent		business
<b>Ireland</b>	use	effective & serious prep.	■	■	continue prior use		company & partners
<b>Italy</b>	use in company	/			not exceed prior use scope		company
<b>Latvia</b>	use in / for company	necessary material prep.	■	■	not exceed prior use scope		company

## Prior user rights

	Use or possession	Preparatory acts	Geographical limitation	Good faith required	Effect or right	Claimable	Transfer
Lithuania	use	effective / serious prep.		■	continue prior use	■	(part of) company
Luxembourg	possession	/			use		company
Malta	use for company	effective & serious prep.	■	■	continue prior use		company or business
Netherlands	use in / for company	started exec. intention to use	■	■	use		company
Poland	use	substantial prep.	■	■	not exceed prior use extent		company
Portugal	use	effective & serious prep.	■	■	continue or begin use		company
Slovak Republic	use	prep. directly aimed at use	■	■	use		(part of) company
Slovenia	use	prep.	■	■	patent has no effect		company or business

	Use or possession	Preparatory acts	Geographical limitation	Good faith required	Effect or right	Claimable	Transfer
Spain	use	serious & effective prep	■	■	continue or use		business
Sweden	comm. use	substantial prep. for comm. use	■	■	retain the same general nature		business
UK	use	effective & serious prep.	■	■	continue prior use		company & partners

### 3.3. Utility models

#### 3.3.1. Introduction

A "utility model" – also called a "*utility certificate*", "*short term patent*", "*petty patent*" or "*utility model certificate*" – is a registered right that provides an exclusive protection for a technical invention. It resembles a patent, in that a utility model must possess novelty and must involve an "*inventive step*", although the patentability requirements are less stringent.

Typically, utility models are granted without a prior search for novelty and inventiveness, which allows for a faster and cheaper registration process compared to patents. Although the protection offered by utility models is less secure than the protection offered by patents, utility models have become popular in several Member



States due to their low cost and quick and simple registration<sup>150</sup>. Some Member States<sup>151</sup> require the invention of a utility model to be embodied in a three dimensional form.

Not all Member States protect utility models: Cyprus, Latvia, Lithuania, Luxembourg, Malta, Netherlands<sup>152</sup>, Sweden and the United Kingdom do not recognise them.

Belgium and France do not have utility models as such – *i.e.*, patents with lowered patentability requirements – but do have a short-term patent<sup>153</sup> that shares some features with typical patents. The treatment of these short-term patents is similar to that of patents, with the only differences being the short duration of the protection (six years), and the absence of a required novelty search. The requirements of novelty and inventiveness in these Member States remain, however, identical to those of patents, so that they really are to be considered as patents.

In 1997, the European Commission introduced a proposal for a Directive to harmonise utility models across Member States<sup>154</sup>. Despite an amended proposal in 1999<sup>155</sup> and consultations organised by the Commission, the proposal has not advanced.

### 3.3.2. Current situation

In Austria, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Poland, Portugal, Slovenia and Spain, the legal analysis of utility models is very similar to the legal analysis of patents. The few differences that exist, generally concern the relaxed qualification criteria (*e.g.*, a less restrictive inventive step requirement) or, also, a shorter duration of protection<sup>156</sup>.

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<sup>150</sup> Commission Green Paper: *"The Protection of Utility Models in the Single Market"*, COM (95) 370 final, 19 July 1995.

<sup>151</sup> *e.g.*, Greece, Spain, Portugal, Italy and Finland

<sup>152</sup> Short-term patents were recognised by Dutch law up to 5 June 2008.

<sup>153</sup> Called *"certificat d'utilité"* and *"brevet de courte durée"*

<sup>154</sup> OJ C 235 of July 27, 1998, page 26

<sup>155</sup> OJ C248 of August 29, 2000, page 56

<sup>156</sup> *e.g.*, ten years in Ireland

In all the above countries, the analysis of prior user rights for utility models was reported to be identical to the analysis of prior user rights for patents. The reader is referred to sections 3.1 and 3.2.

Only in the Slovak Republic, small differences exist for prior user rights on utility models, when compared with patents<sup>157</sup>: good faith is not explicitly required for prior users of utility models, while good faith is effectively required for patents. In addition, there is no restriction to the territory of the Slovak Republic.

### 3.4. Summary of this section

Utility models are not available in all Member States. Where they are available, their legal treatment is similar or identical to the treatment of patents. Accordingly, prior user rights follow a legal regime similar to the legal regime applicable to prior user rights in patent law.

In light of the limited impact of prior user rights on patents and the reduced availability of utility models across Member States, it can be assumed that prior user rights for utility models are not a major practical concern at this moment. Hence, the major discrepancy between "*prior use*" and "*prior possession*" is less pronounced for utility models. As is the case with patents, the limitations on the rights of the prior user are currently imprecise and vague, and, may therefore benefit from harmonisation.

	Use or possession	Preparatory acts	Geographical limitation	Good faith required	Effect or right	Claimable	Transfer
Austria	comm. use	required acts for exploitation	■	■	use	■	business entity
Belgium	<i>No utility models (but recognition of short-term patents)</i>						
Cyprus	<i>N/A: utility models are not recognised</i>						

<sup>157</sup> Due to the introduction of the new Patent Act (Act No. 435/2001 Coll.)

## Prior user rights

	Use or possession	Preparatory acts	Geographical limitation	Good faith required	Effect or right	Claimable	Transfer
Czech Republic	use	prep.	/	/	patent has no effect	■	company
Denmark	comm. use	substantial remedies for comm. use		■	not exceed prior use scope		company
Estonia	use	serious prep.	■	■	retain the same general nature	■	company
Finland	comm. use	substantial prep. for comm. use	■	■	maintain general nature		business
France	<i>No utility models (but recognition of short-term patents)</i>						
Germany	use	serious prep.	■	(■)	not exceed prior use scope		business
Greece	use	necessary prep.	■	■	use		business
Hungary	commercial use	effective and serious prep.	■	■	not exceed prior use extent		business
Ireland	use	effective & serious prep.	■	■	continue prior use		company & partners
Italy	use in company	/			not exceed prior use scope		

	Use or possession	Preparatory acts	Geographical limitation	Good faith required	Effect or right	Claimable	Transfer
<b>Latvia</b>	<i>N/A: utility models are not recognised</i>						
<b>Lithuania</b>	<i>N/A: utility models are not recognised</i>						
<b>Luxemburg</b>	<i>N/A: utility models are not recognised</i>						
<b>Malta</b>	<i>N/A: utility models are not recognised</i>						
<b>Netherlands</b>	<i>N/A: utility models are not recognised</i>						
<b>Poland</b>	use	substantial prep.	■	■	not exceed prior use extent		company
<b>Portugal</b>	use	effective & serious prep.	■	■	continue prior use		Company
<b>Slovak Republic</b>	use	prep. directly aimed at use	/	/	use		(part of) company
<b>Slovenia</b>	use	prep.	■	■	patent has no effect		company or business
<b>Spain</b>	use	serious & effective prep		■	use		business
<b>Sweden</b>	<i>N/A: utility models are not recognised</i>						
<b>UK</b>	<i>N/A: utility models are not recognised</i>						

### 3.5. Registered designs

#### 3.5.1. Overview

The laws regulating registered designs have been harmonised by Directive 98/71/EC<sup>158</sup> <sup>159</sup>. This Directive does not, however, contain provisions regarding prior user rights, with the exception of a transitional provision<sup>160</sup>.

Except for Cyprus, Denmark, France, Italy, Malta, Portugal<sup>161</sup> and Sweden, all Member States acknowledge a prior user right for registered designs. As will be discussed below (3.5.3), the legal treatment of this right often resembles the treatment of patents and utility models, although several differences exist.

#### 3.5.2. Rights similar to prior user rights

##### *a. Denmark and Sweden*

While Denmark and Sweden do not recognise *as such* prior user rights for registered designs, both countries have a type of prior user right that resembles aspects of a typical prior user right.

In both countries, a person who is denied a design registration, but who has in good faith (prepared to) use the design in Denmark / Sweden, is entitled to continue the commenced or planned use in return for an equitable payment. The design should, however, retain its usual character.

In Sweden, there is also a related right for someone who has initiated exploitation of a design at a time when the protected design was elapsed, while the protected design is later on revived.

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<sup>158</sup> Directive 98/71/EC of the European Parliament and of the Council of 13 October 1998 on the legal protection of designs

<sup>159</sup> The legal treatment of registered designs is uniform for Belgium, Luxembourg and the Netherlands, due to the Benelux Convention on Designs (1966), replaced by the Benelux Convention on Intellectual Property (2005).

<sup>160</sup> Article 12.2: the rights conferred by the design right cannot be invoked to prevent continuation of acts that (i) began before the entry into force of the implementation of the Directive; and (ii) could not be prevented before the entry into force of the implementation of the Directive.

<sup>161</sup> repealed by the Portuguese Decree-Law 143/2008 of 25 July 2008

*b. United Kingdom*

In the United Kingdom, Section 7A.6 of the Registered Design Regulations 2001 provides that no infringement proceedings can be taken for acts committed before the date on which the certificate of registration of the design is granted. While this provision offers protection for acts committed before the grant of the design, it does not allow continued use after the grant of the design. Therefore, Section 7A.6 does not provide a typical prior user right.

### 3.5.3. National differences

*a. Prior use*

In contrast with the "prior use" criterion for patents, most Member States that recognise prior user rights for registered designs, require prior "use" or "exploitation" of the design. No mere "possession" was reported, as was the case for patents.

However, Belgium, Luxembourg and the Netherlands require the prior user to have actually *manufactured* a product based on the registered design or model<sup>162</sup>.

*b. Preparatory acts*

All Member States that recognise prior user rights for registered designs, also take into account preparatory acts performed by the purported prior user. As is the case with preparatory acts for patents, several Member States require substantial proof of these preparatory acts.

Consequently, wording such as "*serious [and effective] preparations for use*" (Czech Republic, Estonia, Germany, Hungary, Ireland, Latvia, Spain), "*substantial steps to use*" (Finland), "*substantial preparations*" (Poland), "*directly aimed at using*" (Slovak Republic), "*necessary preparations*" (Austria, Greece), or "*started to execute the intention to manufacture*" (Belgium, Luxembourg and the Netherlands) was found.

However, no specific requirements for preparatory acts were reported for Lithuania and Slovenia.

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<sup>162</sup> except if preparatory acts can be invoked, see below at section 3.5.3.e

*c. Geographical limitation*

Estonia, Finland, Germany, Hungary, Ireland, Poland, the Slovak Republic, Slovenia and Spain require the (preparation for) prior use to have taken place in their territory.

Belgium, Luxembourg and the Netherlands extend the scope to acts done in the Benelux area (instead of the individual territories of Belgium, Luxembourg and the Netherlands) due to the Benelux Convention on Intellectual Property.

Austria, the Czech Republic, Latvia and Lithuania do not include a geographical limitation.

*d. Good faith*

Good faith is explicitly required in Austria, Estonia, Finland<sup>163</sup>, Germany, Hungary, Latvia, Lithuania, Poland, the Slovak Republic, Slovenia and Spain.

Belgium and the Netherlands do not explicitly include a good faith requirement. A good faith requirement is, however, perhaps implicitly present in the requirement that the prior user must not have copied the design from the right holder in order to qualify for a prior user right. This would, for example, be the case in common law jurisdictions in cases where the equitable jurisdiction of a court is being invoked. In Ireland and the UK, for example, this would be the case if either party was raising a prior use argument in an application for injunctive relief.

While other Member States do not explicitly require good faith, this requirement is implicitly assumed<sup>164</sup>. For other Member States, it can be assumed that courts will prevent designers acting in bad faith from acquiring a prior user right.

*e. Rights conferred upon the prior user*

As for the rights conferred upon the prior user of a registered design, two different types were found:

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<sup>163</sup> Finnish legislation does not explicitly set forth a good faith requirement for registered designs. However, section 6 of the Finnish Registered Designs Act requires that the prior use did not entail a manifest abuse with respect to the applicant for registration or to his predecessor in title. According to the preparatory works, examples of manifest abuse include theft and abuse of trust.

<sup>164</sup> For example for the Czech Republic, Greece and Luxembourg

- Most Member States allow the prior user to **continue to use the design**. While some of these Member States limit the further use (Austria<sup>165</sup>, Estonia, Finland<sup>166</sup>, Hungary, Latvia<sup>167</sup>, Lithuania<sup>168</sup>, Ireland<sup>169</sup>, Poland and Spain<sup>170</sup>), no real further limits were reported for other Member States<sup>171</sup>.
- In Belgium, Luxembourg and the Netherlands, prior users can continue or start to manufacture products based on the registered model or design. Interestingly, the prior user also enjoys **all other exclusive rights** of the registered rights holder, with the exception of the right to import goods that contain the registered design.
- Greece allows the registered design to be used "solely for the purpose of promoting their enterprise's interests".

#### *f. Transfer*

As is the case with patents, prior user rights for registered designs are considered to be a personal right. With the exception of Ireland and England, the prior user right cannot be transferred, unless it is transferred as part of a sale of the shares in a business, enterprise or part of an enterprise.

Surprisingly, section 50 of the Irish Industrial Designs Act 2001 does not allow any transfer of prior user rights for registered designs: "*the right conferred by this section may not be transmitted*".

### 3.6. Summary of this section

Prior user rights for registered designs are not harmonised across the Member States. Several differences exist in the qualification criteria, extent and effects of prior user rights, and the impact that these differences have across Member States.

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<sup>165</sup> Limited to the goods for which the design had been in use prior to registration

<sup>166</sup> "*Retaining general character*"

<sup>167</sup> "*only for the purposes, for which, prior to the filing date for the registration of a design or the date of priority respectively, the use of such design has been commenced or serious and efficient preparatory work has been performed*"

<sup>168</sup> "*only in the way he used it before or in the way he prepared to use it*"

<sup>169</sup> "*Use for same purposes*"

<sup>170</sup> "*Use in same manner and for same purposes*"

<sup>171</sup> Czech Republic, Germany, Greece, Slovenia, Slovak Republic



## Prior user rights

A non-trivial set of differences seems to exist between the Benelux countries *en bloc* and the other Member States. The Benelux Convention on Intellectual Property requires the *manufacture* of products (or at least commencement of intention to manufacture) based on the design or model, and grants *all exclusive rights* to the prior users (except the right to import products). Other countries impose a prior *use* requirement and generally limit the right to a *continued use*.

	Use or possession	Preparatory acts	Geographical limitation	Good faith required	Effect or right	Transfer
<b>Austria</b>	use	required acts for exploitation		■	continue such use	business entity
<b>Belgium</b>	manufacturing	started execute intention to manufacture			exclusive rights of legitimate holder (excl. import)	company
<b>Cyprus</b>	N/A					
<b>Czech Republic</b>	use	serious prep. to use			use for company	(part of) company
<b>Denmark</b>	N/A					
<b>Estonia</b>	use	serious prep. for use	■	■	use in same manner	(part of) company
<b>Finland</b>	comm. use	substantial prep. for comm. use	■	■	use while retaining general character	business
<b>France</b>	N/A					

	Use or possession	Preparatory acts	Geographical limitation	Good faith required	Effect or right	Transfer
Germany	use	serious prep.	■	■	realise the design	(part of) company
Greece	use	necessary prep.			promoting enterprise interests	business
Hungary	commercial use	effective and serious prep.	■	■	not exceed prior use extent	business
Ireland	use	serious prep.	■		continue use for same purposes	/
Italy	N/A					
Latvia	use	serious & effective prep. to use		■	use for same purposes	company or business
Lithuania	use	prep. to use		■	continue use	(part of) business
Luxembourg	manufacturing	started execute intention to manufacture			exclusive rights of legitimate holder (excl. import)	company
Malta	N/A					

## Prior user rights

	Use or possession	Preparatory acts	Geographical limitation	Good faith required	Effect or right	Transfer
Netherlands	manufacturing	started execute intention to manufacture			exclusive rights of legitimate holder (excl. import)	company
Poland	use	substantial prep.	■	■	not exceed prior use extent	company
Portugal	N/A					
Slovak Republic	use	prep. directly aimed at use	■	■	rights cannot be claimed	(part of) company
Slovenia	use	prep.	■	■	continue use	company
Spain	comm. use	serious & effective prep	■	■	continue use in same manner / for same purposes	company
Sweden	N/A					
UK	N/A ( <i>exception: acts committed before date of registration grant</i> )					

### 3.7. Semiconductor topography rights

#### 3.7.1. Introduction

The US Semiconductor Chip Protection Act (SCPA), adopted in 1984, required foreign nations to adopt the main elements of the SCPA to have their chips protected in the United States (reciprocity provision). As a consequence, Directive 87/54/EEC<sup>172</sup> was adopted at a European level, which contains minimum requirements similar to the SCPA, to satisfy the US reciprocity requirement and thereby ensure that European chips would also be protected in the United States.

While also intended to harmonise the legal protection of topographies, Directive 87/54/EEC has not fully reached its harmonisation goal, as it did not introduce a uniform registration system, and did not force Member States to adopt a *sui generis* intellectual property right for topographies.

#### 3.7.2. Overview: no prior user rights, except in Lithuania and Portugal

With respect to prior user rights for topographies, almost all national correspondents indicated that no prior use rights exist in this area.

However, the national correspondents of Lithuania and Portugal indicated that a prior user right does exist in their country. In Portugal, article 167 of the Industrial Property Code<sup>173</sup> holds that the prior user rights regime applicable to patents<sup>174</sup> applies to semiconductor topography rights. In Lithuania, a similar provision exists whereby one is entitled to continue exploiting topographies if such (preparation for) exploitation also took place before the registration or first commercial exploitation of the topography. In both Portugal and Lithuania, the prior user right can only be transferred together with a sale of the undertaking.

#### 3.7.3. Innocent infringement provision

Even while prior use rights for topography rights do not exist in Member States other than Lithuania and Portugal, it should be noted that both European Directive

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<sup>172</sup> Council Directive 87/54/EEC of 16 December 1986 on the legal protection of topographies of semiconductor products

<sup>173</sup> Decree-Law No. 36/2003 of 5 March 2003

<sup>174</sup> Use or possession in good faith, or effective and serious preparations thereto, on Portuguese territory.

87/54/EEC (article 5.5) and the TRIPS agreement (article 37.1) contain provisions which resemble a prior user right for topography rights, although not all typical characteristics of a real prior user right are represented. These "*innocent infringement*" provisions hold that any person who acquires a semiconductor product and does not know that the product is protected by an exclusive topography right, shall not be prevented from commercially exploiting that product. However, from the moment this person becomes aware of the protection – or has reasonable grounds to believe that such protection exists – he can be forced to pay adequate remuneration on the demand of the right holder. The innocent infringement provisions only apply to commercial exploitation (importing, selling and distribution), and do not extend to mere reproduction of such protected topographies.

The innocent infringement provisions differ from typical prior user rights, as they are conceived for distributors (instead of inventors), may lead to remuneration (instead of being free of charge) and also apply to acts after the registration of the topography (instead of applying only to *prior* acts).

### 3.8. Summary of this section

Prior user rights for semiconductor topographies are only available in Lithuania and Portugal. No other Member State was reported to have prior user rights for topography rights.

## 4. The current situation in the United States and Japan

### 4.1. United States

#### 4.1.1. Patents

##### *a. Situation prior to 1999*

Although prior user rights were explicitly recognised in the US Patent Act of 1839<sup>175</sup>, they have been absent in the US since 1952. Historically, prior user rights were viewed by several legal commentators as undermining the patent system, because the patent owner's exclusive rights were seen to be infringed by a prior user who had not publicly disclosed his invention. Furthermore, the "first-to-invent" system used in the US leads to a reduced need for prior user rights, as a prior inventor can challenge the priority of the applicant who filed an earlier patent application. This system allows the alleged prior inventor to undertake an "*interference proceeding*" (also known as a "*priority contest*") against the patent holder, in order to dispute the inventorship.

While multiple efforts were undertaken since 1952 to re-introduce prior user rights into the US patent system, most failed due to the philosophical difficulties of embedding a prior user right in a first-to-invent patent system and the apparent stigmatisation of trade secrets. Even so, a majority of published US articles seemed to favour some form of prior user right<sup>176</sup> although no clear consensus existed.

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<sup>175</sup> Section 7 provided: "[1] That every person... who has... purchased or constructed any newly invented machine... or composition of matter, prior to the application by the inventor... shall be held to possess the right to use, and vend to others to be used, the specific machine... or composition of matter so made or purchased, without liability therefore to the inventor; and [2] no patent shall be held to be invalid, by reason of such... use prior to the application for a patent... except on proof of (i) abandonment of such invention to the public; or (ii) that such purchase, sale, or prior use has been for more than two years prior to such application for a patent", as cited in F. A. UBEL, *o.c.*, page 409

<sup>176</sup> D.H.HOLLANDER, *o.c.*, page 43

*b. American Inventors Protection Act 1999*

With the introduction of the American Inventors Protection Act of 1999 came a strictly limited type of prior user rights (called "*first inventor defence*"). The first inventor defence is available only to certain types of prior users:

- the patent concerned must relate to **business methods**;
- the accused infringer must be able to prove, with clear and convincing evidence, an actual **reduction to practice**<sup>177</sup> at least **one year prior** to the filing date of the patent;
- the accused infringer must also prove, with clear and convincing evidence, the **commercial use** of the claimed method prior to the filing date.

As is the case in EU Member States, the defence is personal to the prior user, is generally non-transferable and does not result in the invalidation of the patent.

Due to its restricted scope, the first inventor defence results in a limited impact on the US patent system<sup>178</sup>, although it is regarded as being a positive (yet minor) addition<sup>179</sup>. This limited scope of the first inventor defence was the key to its acceptance and is therefore not coincidental: all previous efforts to reintroduce prior user rights in the US failed due to their broad scope<sup>180</sup>.

*c. Patent Reform Act 2005 and 2007*

The Patent Reform Act 2005 was introduced on 8 June 2005, and was intended as a comprehensive change of US patent law, which included the conversion to a first-to-file system. The bill was not adopted, but much of it was carried into the Patent Reform Act 2007<sup>181</sup>.

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<sup>177</sup> Reduction to practice refers to the embodiment of the concept of an invention, i.e. the physical construction of an invented object or the physical carrying out of an actual process when a method is invented. An invention is actually reduced to practice when a prototype of either the object or the method is developed and is sufficiently tested to demonstrate its functionality.

<sup>178</sup> D.H. HOLLANDER, *o.c.*, page 40

<sup>179</sup> *Ibid.*, page 45

<sup>180</sup> D.H. HOLLANDER, *o.c.*, page 43

<sup>181</sup> Patent Reform Act 2007: original bill, and section-by-section summary available at [www.house.gov/apps/list/press/ca28\\_berman/bermanpatentbill.html](http://www.house.gov/apps/list/press/ca28_berman/bermanpatentbill.html)

One of the proposals of the Patent Reform Act 2007 was to widen the first inventor's defence to all patents, and to only require that the subject matter is commercially used (or substantial preparations be made for commercial use) prior to the effective filing date of the claimed invention. This type of prior user right would effectively resemble the prior user right used in most Member States.

*d. Patent Reform Act 2009*

The Patent Reform Act 2009, for which a set of proposals was introduced<sup>182</sup> on 3 March 2009, substantially mirrors the Patent Reform Act 2007, although the proposal to expand the prior user rights was removed. Nevertheless, the 2009 Act introduces two important changes with respect to prior user rights:

- the first inventor defence will also apply to "*entities controlling or controlled by*" the prior user, instead of only the prior user himself<sup>183</sup>;
- not later than two years after the date of enactment of the 2009 Act, a comparative report must be prepared regarding the findings and recommendations on the operation of prior user rights in selected countries (EU, Japan, Canada and Australia). The report shall include a legal comparison, an analysis of the effect of prior user rights on innovation rates, an analysis of the correlation between prior user rights and start-up enterprises, and the ability to attract venture capital to establish new companies;

The reform proposals are expected to trigger serious debate and may therefore be altered before the Patent Reform Act 2009 is enacted.

#### 4.1.2. Utility models

Utility models do not exist as such in the United States.

#### 4.1.3. Designs

The first inventor defence does not apply to designs.

#### 4.1.4. Semiconductor topography rights

No prior user rights exist in the United States for semiconductor topography rights.

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<sup>182</sup> See [leahy.senate.gov/press/200903/030309b.html](http://leahy.senate.gov/press/200903/030309b.html)

<sup>183</sup> Amendment of Section 273(b)(6) of title 35, United States Code



## 4.2. Japan

### 4.2.1. Patents

#### *a. Overview*

Prior user rights are assigned to persons who made and used (or prepared to use) an invention in Japan that is identical to the patented invention, whereby the invention is:

- invented by himself; or
- invented by another person, provided the prior user did not have knowledge of the patented invention.

The prior user receives a non-exclusive licence on the patent right, limited by the extent and the purpose of the prior invention. However, various court decisions have given this provision a fairly wide scope. For example, the Supreme Court decided<sup>184</sup> in 1986 that the prior user right also extends to subsequent improvements made by the prior user.

As for the necessary preparations, Japanese courts have held that prior user rights require sufficient preparation to use the invention. This seems to be similar to the requirements of most EU Member States' legislation. Japanese courts have, however, shown flexibility with respect to the *continuity* of the preparations<sup>185</sup>.

Japanese courts have held that prior user rights can be transferred to companies within the same group of companies, so long as the original prior user retains control over the companies to which the right is passed<sup>186</sup>. The right also extends to subcontractors, to the extent that the original prior user commissions the work that relies on prior user rights.

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<sup>184</sup> Case no. 454, decided 3 Oct., reported in Minshu vol. 40 no. 6 at 1068

<sup>185</sup> For example, the Tokyo Appeals Court held that a joint venture that had begun preparations to build a chemical manufacturing plant, then suspended work for about a year and resumed construction with another contractor, retained prior user rights over a manufacturing method on which an Italian company had filed a patent application (2003, case no. 67).

<sup>186</sup> If the original prior user is a subsidiary, it is not clear that it can pass its use right to its parent, although large electronic companies are advocating that this be the case.

*b. Analysis*

Japan maintains a system of prior user rights that is similar to the system in place in EU Member States. Several interesting differences can, however, be noted:

- The prior user is assigned a non-exclusive **licence**. Such licensing cannot be expressly found in any of the EU Member States where prior users receive a right that is separate from the right of the patentee although this can be viewed as a type of compulsory licence.
- The prior invention is **not personal**, i.e. the invention can be invented by another person. Situations where knowledge about inventions is received from third parties, would contrast with the prior user principles of most EU Member States.
- Prior user rights **can be transferred** to other legal entities. In the EU Member States, only Ireland and the United Kingdom allow for the transfer of the prior user right in circumstances other than together with the entire company.

According to the Japanese National Correspondent<sup>187</sup>, Japanese companies have expressed concern about the lack of clarity in the judicial interpretation of prior user rights. Furthermore, *electronics companies* specifically advocate a further relaxation of the criteria for claiming prior use rights and a harmonisation of patent laws of various countries to allow for universally recognised prior user rights. Even so, most electronics companies are against prior user rights in early stage discoveries, as this would lead to a first-to-invent system where technologies are privatised at an early stage.

Pharmaceutical companies, on the other hand, also advocate a further relaxation of the criteria for claiming prior user rights, although they indicated rarely having to use such rights.

#### 4.2.2. Utility models

The principles outlined for patents equally apply to utility models.

#### 4.2.3. Designs

A party who, in Japan and without knowledge of the applicant's design, was practicing the design in a business or who was preparing to use the design in a business,

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<sup>187</sup> Results based on an email survey conducted with mostly large companies (285 of 302 respondents had over 300 employees, 226 had over 1000 employees).

has a non-exclusive licence to use the design within the scope of that business and the field in which he or she was practicing or preparing to practice the design.

### 4.2.4. Semiconductor topography rights

Prior user rights are recognised for semiconductor topography rights<sup>188</sup>.

## 4.3. Summary of this section

The adoption of prior user rights in the United States illustrates that prior user rights are deemed to be a valuable element in a patent system. Due to the profound cultural differences between the U.S. and the European patent system, the recent adoption (and the very limited scope) of the prior user rights and the proposed conversion to a first-to-file system, it may be too early to draw recommendations from the U.S. situation.

The Japanese treatment of prior user rights provides some interesting options: the possibility of granting a prior user right for the invention of a third party and the intra-group transfer of prior user rights. It could be worthwhile to investigate the viability and advantages of implementation of at least some of these options in Europe.

## 5. Practical impact

### 5.1. Workshop

A workshop of key stakeholders invited by the European Commission was held to discuss the initial findings in this chapter.

Two key findings emerged during this workshop: the limited impact of prior user rights, and the fact that prior user rights are not always in line with industry's wish for certainty (*"industry hates uncertainty"*). For example, when asked for experience with prior user rights, only one participant reported having had real experience with prior user rights (three lawsuits in three different countries). Some participants also

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<sup>188</sup> Law No. 43, 1985, (last revised 1993) Article 12(1)

argued that an official recording mechanism for prior user rights could be useful, as is the case in, for example, Austria. Such a system could have a centralised register based in Europe. Further, several participants stated that the geographical limitations applied to prior user rights in most European Member States effectively create a real barrier to cross-border research, as prior user rights only exist in the Member State in which there was a prior use / possession / preparatory act<sup>189</sup>. Hence, when a multinational with subsidiaries in several Member States would qualify as a prior user in one Member State due to prior use / prior possession / preparatory acts in that Member State, it will not qualify as a prior user in most other Member States, unless the use / possession / preparatory acts also took place in such other Member States. It was argued that the geographical scope for the EU should therefore also include the EEA.

## 5.2. Current survey

During our interviews with stakeholders, the conclusions of the workshop were confirmed. None of the stakeholders had ever encountered a case in which he or she relied on prior user rights. Also, none of the stakeholders had ever been involved in litigation regarding prior user rights. Furthermore, only 6% of the stakeholders objected to the statement that prior user rights had limited impact in practice. 56% agreed that prior user rights had limited practical impact, and 39% had no particular opinion on this issue).

## 6. Analysis and conclusions

### 6.1. Analysis

With the exception of Cyprus, all Member States recognise prior user rights for *patents* and (where available) *utility models*. However, not all Member States recognise prior user rights for *registered designs*, and only a few Member States recognise prior user rights for *topography rights*. The United States has only recently adopted a very limited type of prior user right for patents.

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<sup>189</sup> See 3.1.2.c above

This raises the fundamental question of whether prior user rights are desirable. While European (patent) literature generally favours prior user rights, a significant part of U.S. literature outright rejected the idea of prior user rights in the first-to-invention patenting setup. Below, a concise overview of the arguments pro and contra prior user rights is presented; please note that most literature focuses on prior user rights for patents.

### 6.1.1. Arguments pro

#### *a. Prior user rights mitigate the harsh effects of the registration system*

In the case of a conflict between the rights of a patentee and the rights of a prior inventor, three legal approaches can be followed:

- the patentee receives an absolute right, whereby the prior inventor is prohibited from using, or continuing to use his invention;
- the patent is invalidated, due to the prior art generated by the prior inventor; or
- the rights of the patentee and the prior inventor are reconciled in some manner.

Proponents of prior user rights praise the third option as an alternative to the other two "*winner takes all systems*"<sup>190</sup>, which can both lead to unfair results. If prior user rights are recognised, both the patentee and the prior user receive some rights in the invention, which is considered equitable, as both parties exercised inventive skill.

#### *b. Not all inventions can be patented*

Not all inventions and designs can be protected, or are protected by their inventors or creators. High costs (in particular if worldwide protection is sought), uncertain commercial return and difficulty in detecting patent infringements, mean that patenting every invention or registering every design a company may develop is neither feasible nor desirable (in particular when it concerns marginal inventions)<sup>191</sup>.

Proponents of prior user rights therefore argue that inventors should have the choice between, on the one hand, investing the time and money to patent an invention or registered design (thereby gaining more security and licence returns) and, on the other hand, commercialising an invention or design without seeking protection (albeit with less security).

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<sup>190</sup> F. Andrew UBEL, *supra*, page 407.

<sup>191</sup> United States Hearings on H.R. 2235, note 24 (at 21) and note 13 (at 10).

c. *Prior user rights encourage investments in new technology*

According to some commentators, some research would not be undertaken if prior user rights did not exist because there would then always be a risk that the knowledge obtained through the research could not be used later on due to a relevant patent of another party. Consequently, these commentators argue that prior user rights encourage research<sup>192</sup>, because *without* prior user rights a patentee could shut down the manufacturing operations of someone who has invested a substantial amount of time and money in that invention. Clearly, this could significantly chill manufacturing investments<sup>193</sup>. This is particularly the case since patent applications are not published for a period of eighteen months.

d. *Prior user rights diminish the need for defensive patents*

In the United States, commentators argue that the absence of real prior user rights causes companies to devote considerable resources to obtaining defensive patents<sup>194</sup>. The money spent on obtaining defensive patents could be better spent on developing new technologies<sup>195</sup>.

### 6.1.2. Arguments contra

a. *Prior user rights weaken the value of patent granted*

Prior user rights are intended to mitigate the effects of the strict patent / design registration system. However, any exception to the right of the patent holder to prevent others from infringing the invention diminishes the value of the patent from the perspective of the patent holder<sup>196</sup>. The scope of, and conditions underlying, prior user rights must therefore be reasonably balanced between the need to minimise the erosion of the patent system or design monopoly, and the need to adequately protect the rights of the prior user.

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<sup>192</sup> S. STROBEL, "Prior User Rights: Introductory Comments", 35 *IDEA* 1994, pages 207 - 209

<sup>193</sup> K.M. KUPFERSCHMID, "Prior user rights: the inventor's lottery ticket", *AIPLA Quarterly Journal*, 1993, page 217

<sup>194</sup> D.H. HOLLANDER, "The first inventor defense: a limited prior user right finds its way into US patent law", *AIPLA Quarterly Journal*, 2002, page 54

<sup>195</sup> United States Hearings on H.R. 400, note 22 (at 578)

<sup>196</sup> K.M. KUPFERSCHMID, *o.c.*, 15, 248;

Although prior user rights are said to be necessary on the ground of fairness to the prior user, the same fairness argument is also invoked by opponents of prior user rights. Opponents assert that it is inequitable to penalise the patent owner, who has incurred both expenses and efforts in seeking a patent, and in the process informed the public of the invention, in favour of a secret user who has conferred no such public benefit<sup>197</sup>.

In the United States, the patent weakening effects of prior user rights are particularly controversial, as some commentators believe that prior user rights would even be unconstitutional, in light of the exclusive nature of the patent grant offered by the U.S. Constitution<sup>198</sup>.

*b. Prior user rights reduce the incentive to seek a patent*

Opponents of prior user rights tend to emphasise the public benefits of the disclosure of inventions through the publication of patents. As prior user rights decrease the need to obtain patents for an invention, the public does not receive the benefit of invention disclosure in the case of secret prior user rights.

It should be noted, however, that some Member States<sup>199</sup> explicitly require registration of the prior use to the relevant public authority.

This public disclosure argument is, in our opinion, less applicable to registered designs.

*c. Prior user rights discriminate against small entities and universities*

Prior user rights would unfairly discriminate against small entities, universities and other researchers with little or no manufacturing capabilities<sup>200</sup>, as they are less

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<sup>197</sup> In practice, this penalisation of the patent owner will likely be limited, as the scale on which the prior invention was actually used by the prior user, will typically be quite small. (If the prior user would have used the invention on a large commercial scale, it would have been quite likely that the invention would have gotten public exposure, and would therefore constitute prior art, destroying the patent's novelty).

<sup>198</sup> D.H. HOLLANDER, *o.c.*, page 51

<sup>199</sup> Notably the Slovak Republic: the prior user right is published in the patents registry kept by the patent office (Section 25 (1) (s) of the Regulation of the Slovak Industrial Property Office No. 223/2002 Coll. on Application of Act No. 435/2001 Coll.).

<sup>200</sup> C.P. KONKOL, "Prior-Invention Rights: The Excluded Middle", *Journal of the Patent and Trademark Office Society*, 1995, p. 670

likely than larger entities to commercialise new technologies (or market products), and are therefore less able to qualify for prior user rights, as most jurisdictions require effective commercial use<sup>201</sup>.

### 6.1.3. Evaluation and conclusions

In contrast with the controversy regarding prior user rights in the United States, most European legal commentators appear to accept prior user rights as being an equitable solution in a first-to-file patent system. Arguably, valid arguments exist both pro and contra prior user rights, although the balance will be felt differently in Europe and the United States.

Based on the input we received from stakeholders and workshop participants, it seems that the actual impact of prior user rights is quite small in practice. Therefore, the arguments against prior user rights (particularly the weakened patent value and the reduced incentive to patent) should be put in perspective. Assuming that, in practice, prior user rights do not occur frequently, we are not convinced that prior user rights would effectively reduce a potential patent holder's intention to apply for a patent.

One should, however, take into account that the debate over the merits of prior user rights involves economic questions regarding the potential steering effects of legal rules (e.g., incentive to innovate and choice between keeping inventions secret versus publishing them). As one U.S. commentator puts it: *"legal scholars are ill-equipped to answer [these questions]"*<sup>202</sup>.

## 6.2. Conclusions

**Patents** – Even though all Member States (with the exception of Cyprus) recognise prior user rights for patents, section 3.1.2 of this chapter has demonstrated that several differences exist in the national implementation. The language used in the national patent acts differs to a certain degree (e.g., *"mere use"*, *"commercial use"*, *"use in/for the company"*), and not all characteristics of prior user rights (preparatory acts, geographical limitation, good faith, limitations of use) are present in all Member

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<sup>201</sup> Conversely, one could argue that prior user rights are also interesting from a cost perspective for small entities and universities, as they may provide an alternative to the high cost of patenting.

<sup>202</sup> D.H. HOLLANDER, *supra*, page 61



States. Even more important is the discrepancy between the criterion of possession and the criterion of use of the invention.

Based on the answers of the national correspondents, it is not clear whether the different statutory language is actually reflected in a different treatment of prior user rights for patents in Europe. Even with respect to the most important issue (prior possession versus prior use of the invention), some commentators argue that it does not lead to any actual differences, as, for example, the prior *use* criterion is generally mitigated by the acceptance of preparatory acts.

In our opinion, prior user rights do not seem to have a significant practical impact. For example, during the workshop of 27 March 2007, we observed that prior user rights did not trigger considerable discussions or reactions amongst the workshop participants. Strikingly similar conclusions can be drawn from our interviews with various stakeholders. Further, most books about patent law only briefly mention the existence of the prior use exception. Similarly, legal articles about this subject are quite scarce. Finally, there is an obvious lack of litigation involving prior user rights, as discussed in section 3.1.3.

Taking into account this seemingly insignificant practical impact of prior user rights and the lack of evidence regarding real issues arising due to the different statutory wording of the relevant provisions in Member States, we do not find that harmonisation efforts for prior user rights for patents should receive high priority. Most stakeholders that were interviewed on this subject agreed with this recommendation<sup>203</sup>.

Nonetheless, the clear lack of prior user rights in Cyprus remains an issue that may hamper cross-border research involving Cyprus.

**Utility models** – The above observations in relation to patents apply equally, if not more so, to utility models. For example, legal literature regarding prior user rights for utility models is utterly scarce. Furthermore, we have not found, and were not informed of, any litigation in this area. During the workshop on 27 March 2007, the discussions and reactions regarding the prior user rights topic all concentrated on patents. Hence, we consider the need for harmonisation to be even less evident than is the case for patents.

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<sup>203</sup> Only 6% disagreed; 50% agreed with it, and 44% had no particular opinion on this subject.

**Registered designs** – Although the above observations regarding prior user rights for patents and utility models (limited amount of literature, no reported litigation, no issues reported during workshop), we do want to stress the fact that Cyprus, Denmark, France, Italy, Portugal and Sweden do not recognise prior user rights for registered models. Although we have not been notified about the practical impact of this legal gap, we do not exclude that issues may arise in this regard. Possibly, Directive 98/71/EC needs to be amended in this regard.

**Topography rights** – Only the national correspondents of Lithuania and Portugal have reported the existence of prior user rights for topography rights. Considering that the practical importance of the legal protection of semiconductor topography rights remains unclear<sup>204</sup>, we think harmonisation efforts in this area do not require a high priority status.

## 7. Recommendations

A limited amount of harmonisation may prove useful. In particular, for the sake of uniformity across Europe (and also taking into account the possible adoption of wide prior user rights in the United States), we recommend the following:

- initiate discussions with Cyprus regarding the introduction of prior user rights in its territory;
- harmonise prior user rights for registered designs, as several Member States do not currently recognise these.

In our opinion, the need to harmonise the implementation details of prior user rights across Member States should not receive high priority, due to their limited practical impact.

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<sup>204</sup> See L. RADOMSKY, "Sixteen Years After the Passage of the U.S. Semiconductor Chip Protection Act: Is International Protection Working?", *Berkeley Technology Law Journal*, 2000, vol. 15: *"Ironically, the SCPA and its counterpart foreign acts are rarely relied upon for relief in litigation for the reasons noted above. At the same time, despite this lack of enforcement, chip piracy itself has declined in response to significant economic and technological transformations in the industry itself."*



# Chapter 4

## Experimental use exception

"The intellectual property laws (relating to patents, databases rights, etc.) of most European countries – as well as the proposed future Community Patent Regulation – include an "experimental exception" (also known as "experimental use exception") allowing any third party to use a protected invention (or data, etc.) for experimental purposes without the consent of the right holder.

However, it appears that these national provisions are not applied, or interpreted in a uniform way in all EU Member States, thereby resulting in legal uncertainty at a Community level. This applies in particular to borderline cases such as those which relate to research tools, or to clinical trials, which are of high practical importance for the research community. In addition, within a given country, the experimental exception does usually not apply (or not to the same extent) to all categories of IPR, which may prove inconvenient for technologies or other R&D results (databases, etc.) cumulatively protected by several types of IPR."

## 1. Types of intellectual property covered

This chapter discusses the experimental use exception with respect to various IPR including, where appropriate, patents, utility models, industrial designs, copyright, databases (*sui generis* rights), plant breeders' rights and semiconductor topography rights.

This chapter does not discuss trade marks, because trade marks do not arise in research and so do not require an experimental use exception.

Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs harmonises copyright protection of computer programs. Article 5(3) provides for a limited right similar to an experimental use exception. It states that a person having a right to use a copy of a computer program is entitled, without the authorisation of the right holder, to observe, study or test the functioning of the program in order to determine the ideas and principles which underlie any element of the program if he does so while performing any of the acts of loading, displaying, running, transmitting or storing the program which he is entitled to do. This arises from the nature of computer programs and is not discussed elsewhere in this chapter.

## 2. Structure of this chapter

In this chapter, we first consider the nature and typical characteristics of the experimental use exception in section 3.

In section 4, we review the existing laws of the Member States and related EU and international laws.

In section 5, we provide an overview of the law as it stands in the United States and Japan for comparative purposes.

In section 6, we provide an assessment of the practical impact of the experimental use exception by reference to existing studies and the results of our survey of relevant stakeholders.

In section 7, we provide our analysis and conclusions.

In section 8, we set out our recommendations.

### 3. The concept of the experimental use exception

#### 3.1. Introduction

Patent protection affords the patent holder the right to prevent third parties from using, making, selling and importing the patented invention without authorisation. In the normal course and without anything further the patent holder's rights could prevent further research into the subject matter of the patented invention and thus hinder further development.

The experimental use exception is a defence to patent infringement actions which permits third parties to use a patented invention for experimental purposes without the consent of the right holder.

An exception of this nature is found in the patent laws of almost all Member States and in the laws of many OECD countries. That said, the issue of an experimental use exception or defence applies equally to experimentation involving other IP rights also. For varying reasons, there is less consistency generally in the application of the exception to other IP rights.

The experimental use exception has evolved over many years in response to the potential negative effects of patent protection in particular and the possibility that the scope of protection granted by patents may act to stifle innovation and act as a limitation on research.

Without an experimental use exception or research exception (as it is sometimes called), it is thought that patents and other IP rights might cause difficulties for research. These difficulties could range from threats of, or actual, infringement actions; problems in obtaining the permission of the relevant patent holder, or in some cases, patent holders (as in the case of patent thickets); and the expense of obtaining appropriate licences. Difficulties in conducting research can lead to obvious barriers to innovation and technology transfer.

As stated by the WTO Panel in *Canada – Patent Protection of Pharmaceutical Products*:

*We may take as an illustration one of the most widely adopted Article 30-type exceptions in national patent laws – the exception under which use of the patented product for scientific experimentation, during the term of the patent and*

*without consent, is not an infringement. It is often argued that this exception is based on the notion that a key public policy purpose underlying patent laws is to facilitate the dissemination and advancement of technical knowledge and that allowing the patent owner to prevent experimental use during the term of the patent would frustrate part of the purpose of the requirement that the nature of the invention be disclosed to the public. To the contrary, the argument concludes, under the policy of the patent laws, both society and the scientist have a "legitimate interest" in using the patent disclosure to support the advance of science and technology.*<sup>205</sup>

Benyamini<sup>206</sup> outlines three main reasons for the exception:

- (1) As the object of the patent system is to encourage innovation, it is not in the public interest to grant protection which may act as an obstacle to research or further improvements;*
- (2) Experimental use is not use of the invention for the purpose for which patent protection was granted; and*
- (3) The widely acknowledged condition for the application of the exception is that there is no commercial use of the invention (as opposed to with a commercial view) which is the preserve of the patent holder.*<sup>207</sup>

The same considerations apply, with modification, to other relevant IP rights.

The OECD (2006) identified several effects of research exceptions including subsidising the extension or improvement to the invention within the same technological trajectory; subsidising the application or adaptation of the invention within a different technological trajectory; subsidising the process of inventing around the patent and the expansion of knowledge of the user more generally<sup>208</sup>.

*a. Borderline cases: research tools and clinical trials*

In recent years, the exception has been the subject of significant debate in the context of its application to research tools and clinical trials.

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<sup>205</sup> Decision WT/DS144/R 17 March 2000 paragraph 7.69.

<sup>206</sup> BENYAMINI, *Patent Infringement in the European Community*, IIC Studies, Studies in Industrial and Copyright Law, The Max Planck Institute

<sup>207</sup> *Ibid.* page 266-267

<sup>208</sup> OECD (2006) page 13.

Research tools can be the subject of research but are usually primarily designed for use in research. This can place them in a potentially difficult position as regards an experimental use exception or any broadening of such an exception as it could potentially devalue any relevant patents over the research tool. On the other hand, the payment of royalties to a patent holder or many patent holders or negotiating licensing terms in respect of the use of research tools may be prohibitive and could act as a barrier to research.

Clinical trials conducted on a patented invention may not necessarily avail of the experimental use exception but whether there is a consistent approach to this issue across the EU remains in some doubt.

*b. Related exceptions*

The experimental use exception is among several related but distinct exceptions which are perhaps best distinguished from it at the outset. Two of these exceptions are the private and non-commercial use exception and the so-called "Bolar Exception"<sup>209</sup>.

Many Member States' laws contain an exception for acts done privately and for non-commercial purposes. The scope of this exception is very narrow and is not directly relevant to the types of research generally conducted by PROs which are usually neither private nor done for non-commercial purposes. This exception has been of some assistance to courts in considering the scope of the experimental use exception<sup>210</sup>.

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<sup>209</sup> So-called as the first exception of this type was introduced in the US following the decision in *Roche Products Inc v Bolar Pharmaceutical Co* 733 F 2d 858 (Fed. Cir. 1984). See 35 U.S.C. 271(e)(1) discussed in section 6.1.

<sup>210</sup> *Monsanto Co. v Stauffer Chemical Co and Another* [1985] RPC 515 at 538 Court of Appeal (UK) discussed in section 4.1



The EU has recently adopted a Bolar type exception in respect of patents. Article 10(6) of Directive 2001/83/EC<sup>211</sup> provides that:

*6. Conducting the necessary studies and trials with a view to the application of paragraphs 1, 2, 3 and 4 and the consequential practical requirements shall not be regarded as contrary to patent rights or to supplementary protection certificates for medicinal products.*<sup>212</sup>

Thus Directive 2001/83/EC introduced an exception in respect of generic medicines in the EU. For generic drug companies this clarifies their position as regards abridged authorisations as it has not previously been clear whether such studies and trials would fall within the experimental use exception.

Article 10(6) of Directive 2001/83/EC has been transposed into the Member States' laws in different forms. For example, the UK, Ireland, Belgium and Lithuania have transposed Article 10(6) so that it applies only to generic medicines. Therefore, in these Member States, some measure of reliance on the experimental use exception is still required in respect of new medicines and clinical trials<sup>213</sup>. However, a number of Member States including Finland, France, Germany, Italy and Malta have extended the provisions of Article 10(6) to include new medicines, which removes this relative uncertainty.

### 3.2. Typical characteristics

The following typical characteristics are found in Member States which recognise the experimental use exception. The reader is referred to section 4 for a detailed discussion of the specific characteristics found in each Member State.

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<sup>211</sup> Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the Community Code relating to Medicinal Products for Human Use as amended by Directive 2002/98/EC of the European Parliament and of the Council of 27 January 2003, Directive 2004/24/EC of the European Parliament and of the Council of 31 March 2004 and Directive 2004/27/EC of the European Parliament and the Council of 31 March 2004.

<sup>212</sup> Article 13(6) of Directive 2001/82/EC, as amended, provides for a similar exception in respect of veterinary medicinal products.

<sup>213</sup> As noted by the WTO Panel in Decision WT/DS144/R 17 March 2000 at paragraph 7.3: "To the extent that some development activity might be permitted, consistently with Article 30 of the TRIPS Agreement, under other exceptions such as the traditional exception for experimental use of the patented product, the delay in entering the market would be correspondingly less."

*a. Patents*

The experimental use exception most commonly contains two limbs:

- **Experimental purposes** – This is generally interpreted broadly to include various types of experiments and a collateral purpose may not necessarily mean the relevant acts are not experimental.
- **Relating to the subject matter of the patented invention** – This limb describes the basic difference between experimenting on the patented invention and experimenting with the patented invention. Only experimenting on the patented invention is permitted under this form of the second limb. To give an example, this is the difference between building a product, such as a laser in accordance with the specification of a granted patent in order to determine that it is possible or how it works ('experimenting on') and building the laser in order to use it to conduct research ('experimenting with').

*b. Utility models*

As a form of patent protection, the experimental use exception in respect of utility models normally follows the same principles as for patents.

*c. Industrial designs*

The experimental use exception is harmonised in the EU in respect of registered designs. Therefore, the form followed by Member States is to provide an exception for "*acts done for experimental purposes*".

Therefore, the experimental use exception for industrial designs is not expressly limited by the second limb discussed above in relation to patents, namely that the experimental purposes relate to the subject matter of the registered design.

This could include both experimenting **on** and experimenting **with** the registered design. There is little guidance (and no cases were reported by the National Correspondents) regarding the interpretation of "experimental purposes" and whether the second limb might be implied by a court to limit the scope of the exception.

*d. Copyright*

Copyright laws generally do not contain a specific experimental use exception as such but contain "fair use" or "fair dealing" provisions of general application to copyright works. Whether they apply to any specific case of experimentation will depend on the circumstances and the specific acts undertaken.

These provisions demonstrate some common characteristics between the Member States (in part due to EU harmonisation measures and the limits set by the Berne Convention) but generally they vary considerably.

- **Private use** – This normally covers private use by individuals for non-commercial purposes but some Member States provide that private use may include business purposes and by legal persons.
- **Research** – Some Member States provide for fair use exceptions in respect of research. The research may be required to be private but in some Member States there may be a commercial purpose.
- **Citation/quotation/examples** – Most National Correspondents have reported fair use exceptions for the purpose of citation, quotation or use of copyright works as examples. In most cases, the circumstances in which the copyright work may be used in this manner are limited in terms of purpose and the amount (in qualitative and quantitative terms) and the author must be mentioned.
- **Other** – Some Member States maintain a fair use exception in respect of teaching and scientific study but these are limited in scope.

*e. Databases (sui generis)*

Some harmonisation measures have been taken in respect of the database right, which were optional for Member States to adopt. Nevertheless, the main characteristics of the harmonisation are generally reflected in Member States' laws.

- **Teaching or scientific research** – Most Member States' laws provide for an exception for the extraction of a substantial part of the contents of a database for teaching or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose to be achieved.

*f. Plant breeders' rights*

The types of experimental use exceptions found in Member State laws vary and the following are some common characteristics:

- **Production or preservation** – One Member State provides for an exception for the production or preservation of genetic material of a plant variety for exclusively scientific research.

- **Breeding experimentation** – Several Member States provide for a breeding experimentation exception. This exception is not usually clarified to mean breeding experimentation for the purpose of new varieties.
- **Creating new varieties** – Many Member States provide specific exceptions for the purpose of creating new varieties.
- **Experimentation** – A number of Member States provide for an exception for acts done for experimental purposes. Similar to the position in respect of industrial designs, these exceptions do not contain a second limb as set out in respect of patents, namely acts done for experimental purposes relating to the subject matter of the plant variety.

*g. Semiconductor topography rights*

Semiconductor topography rights have been harmonised at EU level and most Member States' laws provide an exception for the purpose of analysing, evaluating or teaching the concepts, processes, systems or techniques embodied in the topography or the topography itself.

## 4. The current situation in the EU

### 4.1. Patents

#### 4.1.1. Legal background

Other than for the Biotechnology Directive<sup>214</sup>, the EU has not legislated in the area of patents or the experimental use exception. However, there are historical and legal reasons why there is some degree of uniformity in Member States' laws regarding the experimental use exception.

#### 4.1.2. Community Patent Convention

Whilst the Community Patent Convention was never ratified, it does contain certain exceptions which have been adopted, though not universally or in the same

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<sup>214</sup> Directive 98/44/EC of the European Parliament and of the Council of 6 July 1998 on the legal protection of biotechnological inventions.

manner, by Member States. Article 31 of the Community Patent Convention 1975<sup>215</sup> provides that:

*The rights conferred by a Community patent shall not extend to:*

- acts done privately and for non-commercial purposes;*
- acts done for experimental purposes relating to the subject-matter of the patented invention;*
- (....).*

### 4.1.3. TRIPS Agreement

The lawfulness of the Bolar-type exception has been considered in the context of TRIPS and similarly the lawfulness of the experimental use exception, as it applies to patents, is subject to the terms of TRIPS. Article 30 TRIPS states that:

*Members may provide limited exceptions to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with the normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account of legitimate interests of third parties.*

In *Canada – Patent Protection of Pharmaceutical Products*,<sup>216</sup> the WTO Panel held that Canada's regulatory review defence (a Bolar-type provision)<sup>217</sup> was compatible with TRIPS but that its manufacture and stockpiling defence was not<sup>218</sup>.

Article 30 establishes three separate criteria that must be met in order to qualify for the exception:

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<sup>215</sup> Article 27 of the Community Patent Convention 1989

<sup>216</sup> DS114 19 December 1997. Decision WT/DS144/R 17 March 2000

<sup>217</sup> Section 55.2(1) Patents Act (Canada): *"It is not an infringement of a patent for any person to make, construct, use or sell the patented invention solely for uses reasonably related to the development and submission of information under any law of Canada, a province or a country other than Canada that regulates the manufacture, construction, use or sale of any product."*

<sup>218</sup> Section 55.2(2) Patents Act (Canada): *"It is not an infringement of a patent for any person who makes, constructs, uses or sells a patented invention in accordance with subsection (1) to make, construct or use the invention, during the applicable period provided for by the regulations, for the manufacture and storage of articles intended for sale after the date on which the term of the patent expires."*

*(1) the exception must be limited.<sup>219</sup> The term "limited exception" must be read to connote a narrow exception namely one which makes only a small diminution of the rights in question.<sup>220</sup>*

*(2) the exception must not unreasonably conflict with normal exploitation of the patent.<sup>221</sup> The Panel concluded that the normal practice of exploitation by patent owners, as with owners of other intellectual property rights, is to exclude all forms of competition that could detract significantly from the economic returns anticipated from a patent's grant of market exclusivity.<sup>222</sup> The Panel did not need to consider the meaning of "unreasonably conflict".<sup>223</sup>*

*(3) the exception must not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties.<sup>224</sup> The Panel decided that "legitimate interests" must be defined in the way that it is often used in legal discourse namely as a normative claim calling for protection of interests that are "justifiable" in the sense that they are supported by relevant public policies or other social norms.<sup>225</sup>*

The lawfulness or otherwise of experimental use provisions was not addressed directly in the WTO Panel decision.

#### 4.1.4. Member States

With the exception of Austria, all Member States have an express statutory experimental use exception in respect of patents. In many Member States, the statutory exception is identical or substantially similar to Article 31 of the Community Patent Convention 1975.

The Czech Republic, Denmark, France, Germany, Ireland, Luxembourg, Spain, Sweden and the UK all contain almost identical provisions relating to the experimental use exception, namely "*acts done for experimental purposes relating to the subject matter of the [patented invention]*". Estonia ("*testing in relation to the invention itself*")

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<sup>219</sup> Decision WT/DS144/R 17 March 2000 paragraph 7.20.

<sup>220</sup> *Ibid.* paragraphs 7.30 and 7.44.

<sup>221</sup> *Ibid.* paragraph 7.20.

<sup>222</sup> *Ibid.* paragraphs 7.54 and 7.55.

<sup>223</sup> *Ibid.* paragraph 7.59.

<sup>224</sup> *Ibid.* paragraph 7.20.

<sup>225</sup> *Ibid.* paragraph 7.69.

and Finland ("*experiments relating to the invention as such*")<sup>226</sup> have substantially similar exceptions.

In Slovenia, the exception applies to acts done for research and experimental purposes of any kind relating to the subject-matter of the patent. It is not clear whether the inclusion of "research" is intended to widen the breadth of the exception.

In the Netherlands the exception relates **solely** to **research** on the patented subject matter.

Cyprus and Malta both have similar exceptions that apply "*where the act consists of making or using such product for purely experimental purposes or scientific research*"<sup>227</sup>. These exceptions are different in that the use must be for **purely** experimental purposes or scientific research and there is no express second limb.

In the Slovak Republic, the exception relates to activity conducted for experimental purposes and in Portugal the exception relates to acts done for testing or experimental purposes. In each case, there is no express second limb.

In Greece, the exception applies to use of the patented invention for non-professional or research purposes<sup>228</sup>. In Latvia, the exception applies to the use of an invention for scientific experiments or research purposes as well as in the testing of a patented invention whereas in Lithuania the exception applies to acts done for experimental purposes or for scientific research and this does not conflict with the normal exploitation of the patent and does not unreasonably prejudice the legitimate interests of the patent owner. In Italy, the exception applies in respect of acts performed for experimental purposes.

In Hungary, the exception applies to experimental procedures in connection with the subject matter of the invention, including experiments and research necessary for the authorisation of the distribution of a product that is considered a new inven-

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<sup>226</sup> The National Correspondent has reported that any further experiments aiming for commercial utilization of the invention have been regarded in preparatory works of the Patents Act as infringing acts. Determining the exact scope of this exception is difficult since it has not been tested in Finnish case-law.

<sup>227</sup> Section 27(3) Patents Act (Cyprus) and Section 27(6)(b) Patents and Designs Act (Malta).

<sup>228</sup> The National Correspondent has reported that the research must be shown to relate to the subject matter of the patent for the exception to apply.

tion or a product that is produced by a technology that is considered a new invention.

In Poland, a patent right is not infringed by any acts done for research and experimental purposes, for the evaluation thereof, analysis or teaching. Therefore, it appears that it does not expressly contain the second limb and further permits "*evaluation, teaching and analysis*"<sup>229</sup>.

As noted above, Austria does not have an express statutory experimental use exception. The National Correspondent reported that some commentators have expressed the view that use for private purposes as well as purely teaching or experimental purposes would fall outside the scope of patent protection. This is because under Section 22 of the Austrian Patents Act, a patent entitles the owner to prevent others from business related production, distribution, offer for sale or use the object of the invention as well as importing or possessing it for the aforementioned purposes<sup>230</sup>. However, there does not appear to be any Austrian case law confirming this view.

Belgium is exceptional amongst the Member States in that its experimental use exception expressly permits both experimenting **on** and experimenting **with** the patented invention:

*The exclusive rights deriving from a patent do not extend to acts carried out for scientific purposes on and/or with the subject matter of the invention.*<sup>231</sup>

This exception will, in particular, affect patented research tools which are used in experiments generally rather than experiments on the research tool. The Belgian exception is also exceptional in that it has replaced "for experimental purposes" with "for scientific purposes" which is arguably wider than experimental purposes alone.

It is difficult to reconcile this revised experimental use exception with Article 30 TRIPS because it, *inter alia*, clearly devalues patented research tools.

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<sup>229</sup> S.69(3) of the Industrial Property Act.

<sup>230</sup> Section 22 provides that: "(1) *The patent shall entitle the patentee to exclude others ... to industrially provide the subject matter of the invention, put it on the market, offer it for sale or to work it or import or possess it for the purposes stated.* (2) *If the patent has been granted for a process, it shall be effective also in respect of the products manufactured directly by that process.*" See also OECD (2006), page 18.

<sup>231</sup> Article 28(1)(b) Patents Act (Belgium)



Therefore, there are some differences in the forms of the statutory exception in Member States.

### 4.1.5. Interpretation – case law in the European Union

In terms of case law, the courts in France, Germany and the UK, all of which have similar statutory experimental use exceptions, have considered the scope of the exception.. The case law is discussed below in relation to the interpretation of the experimental use exception. Decisions of the Dutch courts are also considered but the form of the Dutch experimental use exception is different, as reported above<sup>232</sup>.

#### a. United Kingdom

In *Monsanto Co v Stauffer Chemical Co and Another*<sup>233</sup>, the UK Court of Appeal stated that:

*"...the word "experiment" is an ordinary word in the English language and has never been a term of art in U.K. patent law.... The distinction between the wording of sub-head (a) and the wording of sub-head (b) in section 60(5)<sup>234</sup> indicates that experimental purposes in sub-head (b) may yet have a commercial end in view, as do all the activities of companies such as the parties to this dispute<sup>235</sup>....*

*Trials carried out in order to discover something unknown, or to test an hypothesis or even in order to find out whether something is known to work in specific conditions, e.g. of soil or weather, will work in different conditions can fairly, in my judgment, be regarded as experiments. But trials carried out in order to demonstrate to a third party that a product works or, in order to amass information to satisfy a third party, whether a customer or a body such as the PSPS or ACAS, that the product works as its maker claims are not, in my judgment, to be regarded as acts done "for experimental purposes". The purposes for which tests or trials are carried out may in some cases be mixed and may in some cases be dif-*

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<sup>232</sup> In *Clinical Trials I* ([1997] RPC 623) and *Clinical Trials II* ([1998] RPC 423), the German Supreme Court distinguished two Dutch decisions on the basis that the experimental use exception in the two Member States were not the same (*Clinical Trial I* at para 641 and *Clinical Trials II* at para 435)

<sup>233</sup> [1985] RPC 515 Court of Appeal (UK)

<sup>234</sup> Equivalent to Article 31(a) and (b) of the Community Patent Convention 1975

<sup>235</sup> *Monsanto Co. v Stauffer Chemical Co and Another*, *supra* n. 29, at page 538

*ficult to discern; indeed, in the present case, if fuller evidence is given at the trial, a different result may then be reached. On the affidavit evidence before this court, it is not clear to me what the defendants are still wanting to find out about TOUCHDOWN. On that evidence, if I ask, in relation to the defendant's proposed field trials of category (2) to be carried out by the second defendant's personnel on land rented on other farms, the broad question whether those trials would be carried out or done, for experimental purposes, my answer is that they would not; they would be carried out in order to obtain the approval of the PSPS and ACAS.*<sup>236</sup> (emphasis added)

Therefore, the construction of the experimental use exception in the UK includes experiments that have a commercial end in view and which are carried out to discover something unknown, to test an hypothesis or to find out whether something is known to work in specific conditions will work in different conditions<sup>237</sup>. In that case, trials of the defendant's pesticide product in laboratories or glasshouses and the defendant's research farm were permitted (as they were experimental) but trials on rented land and trials to be carried out by regulatory authorities were not as they were for the purposes of regulatory approval and not for experimental purposes related to the subject-matter of the patent.

In *Auchinloss v Agricultural and Veterinary Supplies Limited*<sup>238</sup> the exception again came before the UK Court of Appeal, which reiterated the core test for "experimenting" as laid down in *Monsanto*. *Auchinloss* dealt with the interpretation of the terms the "subject matter of the invention" in the UK Patents Act which the appellant wanted the court to construe narrowly. The Court held that the phrase must be construed widely, looking at the patent as a whole. The Court stated that just because the sample at issue had been produced for regulatory reasons, it did not automatically deprive it of the safe harbour offered by the experimental use exception and so, in that regard, the courts view seems to have moved closer to the view of the German Courts in *Clinical Trials II* (discussed below).

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<sup>236</sup> *Ibid.*, page 542.

<sup>237</sup> *Obiter* Dillon LJ accepted that a limited experiment to establish whether the experimenter could manufacture a quality product commercially in accordance with the specification of a patent as being covered by the words "for experimental purposes relating to the subject-matter of the invention" (*ibid.* at p 538)

<sup>238</sup> [1997] RPC 397

The scope of Section 60(5)(6) of the Patents Act 1977 was more recently considered by Mr. Peter Prescott QC (sitting as a Deputy Judge of the High Court) in *Corevalve Inv. V. Edwards Lifesciences AG, Edwards Lifesciences Pvt Inc.*<sup>239</sup> The case related to certain patented stent technology (EP0592410) and a claim of invalidity and a counterclaim of infringement. In respect of the counterclaim of infringement, Corevalve, claimed, *inter alia*, the experimental use exception. While the decision in respect of the experimental use exception is obiter, it is useful to quote extensively from the relevant passage. By way of background, Corevalve operated a clinical programme, referred to as "the Registry":

*... according to its (Corevalve's) CEO Mr. Michiels:*

*"The main aims of the Registry are (1) to investigate and confirm the safety and efficacy of the procedure and valve function on the long-term basis and in a large number of patients; (2) to monitor unwanted effects under expanded use and (3) to investigate and understand the effectiveness of the training/certification program in anticipation of larger scale expansion of such a program. In particular, the information that is being learned through use of the Registry database is giving Corevalve a much more detailed understanding of the risks and challenges of the procedure according to patients' anatomy. Furthermore, this data is directly guiding Corevalve's decision on future design generations, and is leading to a tighter delineation of the patient selection criteria. The Registry also serves to fulfil NSAI's post-surveillance data requirements ...."*

*70. Apart from the reference to decisions on future design generations, which is rather vague ... all of these investigations are about cardiological procedures, and do not concern trying modifications to the hardware as such.*

*71. Corevalve do not supply their product gratis; on the contrary, they invoice a very substantial amount for each unit.*

*72. It is well settled (Monsanto v. Stauffer [1985] RPC 515, C.A.) that mere field trials which are intended to demonstrate the efficacy of the product for the purposes of regulatory approval do not qualify for the exception set for (sic) in S.60(5)(b) of the Act. In general, the purpose of this defence is to encourage scientific research while protecting the legitimate interests of the patentee. This involves a balance.*

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<sup>239</sup> [2009] EWHC 6 (Pat).

73. *Section 60(5)(b) is based on Article 27(b) of the Community Patent Convention. The Federal Supreme Court of Germany considered the equivalent provision in *Klinische Versuche (Clinical Trials) I* [1977] RPC 623. The only part of the Court's official headnote that is relevant for present purposes is as follows (English translation):*

*"An act for experimental purposes which is related to the subject-matter of the invention and therefore legitimate can exist if a patented pharmaceutically active substance is used in clinical trials with the aim of finding whether and, where appropriate, in what form the active substance is suitable for curing or alleviating certain other human diseases."*

74. *In that case the substance in question (an interferon) was known for use in the treatment of rheumatoid arthritis and the defendants were conducting clinical trials to see if that substance could be used for treating other diseases such as cancer, AIDS and hepatitis. The invention – the thing that was claimed in the patent – was the substance as such. I can see that those clinical trials were squarely within the purpose of the exception, for their immediate purpose was to generate scientific information by experimenting with the substance that was the subject of the patent claim.*

75. *However, there must surely be an outward limit to that principle. Suppose the defendants in the German case had been selling a pharmaceutical that was fairly new to the market and their defence had been that, by so doing, they were gaining valuable information that was not otherwise available – contraindications, for instance, which could be stated in the product literature. Would that be acts done for "experimental" purposes?*

76. *A defendant could always say, and with some truth, that by putting his product on the market (general or special) he was gaining valuable information that might even prompt him to modify his device in future ....*

77. *I acknowledge that the mere fact that the purpose of the defendant is commercial is no rebuttal of the statutory defence. After all, most pharmaceutical research organisations are commercial. They do research because they hope to make money one day. However, in the present case it cannot be denied that an immediate and present purpose of Corevalve is to generate revenue – which was not so in the German case.*

78. *I therefore think that a more complete statement of the principle – it did not arise in the German case – should involve the consideration whether the immediate purpose of the transaction in question is to generate revenue.*

79. *The relevant statutory phrase is "acts done for experimental purposes". The difficulty arises where the defendant has mixed purposes. I would reject the extreme proposition that, so long as one of the defendant's purposes is to generate information of scientific or technical value, it is irrelevant that another of his purposes is to generate ready cash. There may be no help for it but to consider the defendant's preponderant purposes.*

80. *On the evidence in this case I would hold that Corevalve's purposes are three-fold: (1) to establish confidence in their product within the relevant market; (2) to generate immediate revenue of a substantial character; and (3) to gain information about clinical indications and, possibly, future modifications to be made to the physical structure of the device in light of experience. I do not find that purpose (3) was their preponderant purpose.*

81. *I have not found this point easy, but on the whole I would hold that, on the assumption that the Corevalve device falls within Claim 1 of the patent in suit, Section 60(5)(b) of the Patents Act 1977 is not a valid defence on the facts of this case.*

*b. Germany*

The lawfulness of clinical trials on the active substance interferon-gamma with a view to further indications which were regarded as possible was considered by the German Supreme Court in *Clinical Trials I*.<sup>240</sup>

In relation to the meaning of "experiment" and "subject-matter of the patented invention", the German Supreme Court stated that:

*An experiment in the sense relevant here is any (planned) procedure for obtaining any information, irrespective of the purpose which the information gained is intended to serve....*

*The term [subject-matter of the patented invention] can also be understood, in respect of the experimental acts related to it, to mean that the subject-matter of*

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<sup>240</sup> [1997] RPC 623

*the invention is the claimed technical teaching, which also includes use of the inventive substance.*<sup>241</sup>

From this the Supreme Court stated:

*...the wording of the Act when examined naturally rather indicates that § 11 No. 2 of the Patents Act in principle exempts all experimental acts as long as they serve to gain information and thus to carry out scientific research into the subject-matter of the invention including its use. There are then included, for example, utilization acts for the experimental purposes undertaken with the subject-matter of the invention in order to discover the effects of a substance or possible new uses hitherto unknown. Since the provision makes no limit, either qualitative or quantitative, on the experimental acts, it cannot matter whether the experiments are used only to check the statements made in the patent or else to obtain further research results, and whether they are employed for wider purposes, such as commercial interests.*<sup>242</sup>

The *Monsanto* case was distinguished. The Supreme Court said:

*The wording of § 11 No. 2 of the Patents Act and the reasons given for the law are accordingly in favour of the assumption that clinical trials are exempted even when – as in this suit – the patented substance is used with the aim of finding whether and, where appropriate, with what administration form and dosage interferon-gamma is able to cure or alleviate human diseases, in principle irrespective of whether, beyond the character of pure research, economic interests are also in the background, which can anyway be ruled out only rarely. The "Touchdown" judgment [Monsanto]... should also be understood in this sense....*

*It is therefore appropriate to exempt clinical trials and investigations with active substances on humans as experimental acts according to § 11 No. 2 of the Patents Act as long as these experiments are directly aimed at obtaining information.*<sup>243</sup>

In *Clinical Trials II*<sup>244</sup> the German Supreme Court re-visited the issue of the experimental use exception this time in the context of clinical trials with a specimen

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<sup>241</sup> *Ibid.* at page 638

<sup>242</sup> *Ibid.* at page 639

<sup>243</sup> *Ibid.* at page 642-643

<sup>244</sup> [1998] RPC 423

which contained recombinant, human Erythropoietin undertaken to confirm the results of animal tests and to supply data necessary for regulatory approval.

As regards commercial activity and the object of the research, the German Supreme Court noted:

*According to this, the commercial orientation does not from the outset turn the experimental activity into an impermissible patent infringement. Something else will then have to determine when it is no longer a matter of further elucidation of the conditions, effects, applicability, and producibility of the object of the invention, but of clarification of commercial facts such as the needs of the market, acceptance of prices, and possibilities of distribution. However, such a case is not given here.<sup>245</sup>*

The German Supreme Court later stated:

*Therefore the wording of section 11 No. 2 of the Patent Act, the basis of the law, as well as the meaning and purpose of section 11 No. 2 of the Patent Act speaks for the fact that clinical research in which the digestibility and effectivity of a pharmaceutical contained in a protected active agent are tested on human beings is exempted even in the event that these tests were undertaken with the purpose of obtaining data necessary for the obtainment of legal pharmaceutical authorisation. This does not in any way mean that research activities of any and every sort are exempted. Should the research have no relation whatsoever to technological theory or should the experiments be undertaken in such proportions as to no longer allow for justification on research grounds, then the activities are not considered to be permissible research activities within the meaning of section 11 No. 2 of the Patent Act. The same would be considered to be case if experiments are carried out with the purpose of persistently disturbing or hindering the inventor's distribution of his product. In such cases the research does not serve the purpose of technological progress, rather it serves as a means for the accomplishment of competitive purposes.<sup>246</sup>*

The Supreme Court accepted that Phase II and Phase III trials could come within the experimental use exception<sup>247</sup>.

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<sup>245</sup> *Ibid.* at pages 433-434

<sup>246</sup> *Ibid.* at page 436

<sup>247</sup> *Ibid.* at pages 437-438

Thus in Germany, the courts have taken a liberal view of the experimental use exception and have applied it to clinical trials for the purpose of new indications and regulatory review. This is arguably a wider interpretation of the experimental use exception than in the UK and it remains to be seen if, in an appropriate case, a UK court will adopt the same liberal approach although this may not arise in the same circumstances now that the UK and Germany have implemented the regulatory review exception<sup>248</sup>.

However, the approach taken by both the UK and German courts is characterised by having regard to the origins of their respective provisions in the Community Patent Convention and to exclude previous experimental use exception decisions from consideration<sup>249</sup>.

c. *France*

In *Wellcome Foundation v Parexel International & Flamel*<sup>250</sup>, the French courts considered the scope of the experimental use exception and held that tests for the purpose of finding different ways to administer the patented product of the plaintiff were covered by the exception. Such use was not commercial use as the commercial launch could not be carried out until regulatory approval was sought.

The Court took a wide view and stated that provided that the tests did not go further than the experimental nature (of the exception), they would not constitute infringement. In that regard, like the German Supreme Court in *Clinical Trials I*, it did not matter that the tests might have also have commercial or marketing benefits when successfully completed.

Article L.613-5, the relevant article of the French Intellectual Property Code provided that scope of a patent did not encompass "*acts performed on an experimental basis and which relate to the object of the patented invention*".

Wellcome was the owner of a patent for Aciclovir. Flamel Technologies was the owner of a patent protecting a microcapsule technology which allowed a sustained release of pharmaceutically active ingredients, and Flamel was performing Phase III

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<sup>248</sup> COOK analyses the German and UK case law and summarises the positions together and not necessarily as conflicting: see Cook, *supra* at pp. 17-37

<sup>249</sup> In the UK, reading Section 60 Patent Act 1977 (UK) in accordance with the Community Patent Convention is mandated by Section 130(7) Patents Act 1977 (UK).

<sup>250</sup> Cour d'Appel, Paris Arrêt 27 January 1999



clinical trials with microcapsules containing Aciclovir. The clinical trials were performed on a very large scale.

The Court made it clear that there was no factual issue in that case as to whether the tests related to the "subject matter of the patented invention" as required under Article L613-5, as they related to modes of delivery and daily dosage of the patented formula and therefore the necessary nexus could be assumed to exist.

The Court held that conducting the clinical trials did not of itself constitute an act of infringement and fell within the exception provided for by Article L.613-5.

The Court stated that:

*"the purpose of the clinical trials was to compare different methods of administration of Aciclovir and to find out the most advantageous dosage scheme."*

It went on to hold that the trials:

*"did not by their nature (whatever the clinical trials were intended for, notably future marketing) exceed the experimental character and appear as a prerequisite necessary for the obtainment of a marketing authorisation, which did not by itself amount to infringement."*

The Court of Appeal of Paris in *Parienti v Peugeot*<sup>251</sup> recently expressed a more restrictive approach by holding that the study of a new kind of transportation system did not fall under the experimental use exception, mainly because the study had been the subject of too much publicity and so the extent of the exception in France is still the subject of debate.

### *d. Netherlands*

Derzko<sup>252</sup> reports four cases in the Netherlands on the experimental use exception.

In *Phariba and Medicopharma v ICI*, the court held that experimentation to establish whether the invention can be worked or for further development of the invention is allowable. This may include such experimentation in the course of business.

In *Applied Research Sys. ARS Holding NV v Organon Intl. BV*, the Hague Court of Appeals held that extensive and organised clinical trials in ten European States were

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<sup>251</sup> Cour D'Appel Paris 4e CH. A. July 3 2002

<sup>252</sup> DERZKO, *A Local and Comparative Analysis of the Experimental Use Exception – Is Harmonisation Appropriate?* 44 IDEA 1 2003-2004 at p 60

not conducted for the purposes of finding out more about the invention, but for the purposes of product registration and the exception did not apply. However, in *Kirin-Amgen v Boehringer Mannheim GmbH & Boehringer Mannheim BV*, trials of erythropoietin were held to come within the exception because they were aimed at researching further indications.

In *SmithKline French Laboratories Ltd v Generics VB* the court held that the submission of a patented drug for regulatory approval did not come within the exception.

It appears from these cases that the scope of the experimental use exception in the Netherlands is not as broad as in Germany and may be more similar to the position in the UK.

Fig. 1: Patents – EU Member States

	Relating to / on subject matter	With subject matter	Experimental use	Scientific / research use	Other
Austria	No Express Research Exception				
Belgium	■	■		■	
Cyprus			■	■	Limited to "purely" experimental purposes or for scientific research
Czech Republic	■		■		
Denmark	■		■		
Estonia	■				Testing related to the invention itself
Finland	■		■		
France	■		■		
Germany	■		■		
Greece	■			■	Non-professional purposes also exempt
Hungary	■		■		
Ireland	■		■		

Experimental use exception

	Relating to / on subject matter	With subject matter	Experimental use	Scientific / research use	Other
Italy			■		
Latvia	■		■	■	Testing of a patented invention
Lithuania			■	■	Subject to normal exploitation of patent and the legitimate interests of the owner are not unreasonably prejudiced
Luxembourg	■		■		
Malta				■	Limited to "purely" experimental purposes or scientific research
Netherlands	■		■		
Poland			■	■	Research and experimental purposes, for the evaluation thereof, analysis or teaching
Portugal			■	■	
Slovak Republic			■		
Slovenia	■		■	■	
Spain	■		■		
Sweden	■		■		
UK	■		■		

4.2. Utility models

4.2.1. Legal background

While attempts were made to create a Community utility model and proposals for a Directive to harmonise Member States' laws in respect of utility models<sup>253</sup>, no harmonisation measures have been made. However, the proposal and amended pro-

<sup>253</sup> See COM (1999) 309 final /2 97/0356 (COD) Brussels, 12.07.1999

positional approximating the legal arrangements for the protection of inventions by utility model did contain the following exceptions in Article 20:

*3. The rights conferred by a utility model in accordance with paragraphs 1 and 2 shall not extend to:*

*(a) acts done privately and for non-commercial purposes;*

*(b) acts done for experimental purposes relating to the subject-matter of the protected invention.*

This exception was expressly based on Article 30 TRIPS discussed in section 4.1. However, TRIPS does not expressly refer to utility models and the Paris Convention does not contain any substantive terms relating to utility models<sup>254</sup>.

#### 4.3. Member States

Cyprus, Latvia, Lithuania, Luxembourg, Malta, Sweden and the UK do not recognise utility models. The remaining Member States recognise different forms of utility models.

Except for Austria, Slovakia and the Czech Republic, all Member States that recognise different forms of utility models also have a statutory form of experimental use exception in respect of utility models. The applicable statutory experimental use exceptions are the same as for patents in most Member States (Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Slovenia and Spain). In Portugal, the exception applies to acts done for experimental purposes relating to the object protected.

In Austria, the same principles apply to utility models as apply to patents (see section 4.1).

In Hungary, the Act on Utility Models does not contain any express exception. However, it states that the exclusive right for exploitation shall include the production, use, import and sale of the product being the subject matter of the utility model protection within the scope of the economic activity. Accordingly, although it is not expressly stated in the Act on Utility Models, most probably acts performed

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<sup>254</sup> Article 1(2) of the Paris Convention refers to utility models. See Suthersanen *Utility Models and Innovation in Developing Countries* February 2006 UNCTAD-ICTSD Project on IPRS and Sustainable Development.

Experimental use exception

outside the sphere of economic activities such as experimental use or trials are not covered by utility model protection.

It is not clear how utility model experimentation occurs in Slovakia and the Czech Republic in the absence of an exception similar to that under patents.

Fig. 2: Utility Models – EU Member States

	Relating to / on subject matter	With subject matter	Experimental use	Research use	Other
Austria	No express research exception				
Belgium	■	■		■	
Cyprus	N/A: No Utility Model Protection Available (see Industrial Designs)				
Czech Republic	No research exception				
Denmark	■		■		
Estonia	■		■		
Finland	■		■		
France	■		■		
Germany	■		■		
Greece	■		■		Non- professional purposes also exempt
Hungary	No express research exception				
Ireland	■		■		
Italy			■		

	Relating to / on subject matter	With subject matter	Experimental use	Research use	Other
Latvia	N/A: No Utility Model Protection Available				
Lithuania	N/A: No Utility Model Protection Available				
Luxembourg	N/A: No Utility Model Protection Available				
Malta	N/A: No Utility Model Protection Available				
Netherlands	■		■		
Poland			■		Evaluation, analysis and teaching
Portugal	■		■		Private non- commercial use
Slovak Republic					Private Use may be per- missible
Slovenia	■		■	■	
Spain	■		■		
Sweden	N/A: No Utility Model Protection Available				
UK	N/A: No Utility Model Protection Available				

## 4.4. Industrial designs

### 4.4.1. Legal background

A number of Member States (Belgium, Estonia, France, Germany, Greece, Hungary, Italy, Latvia, Luxembourg (Benelux), Netherlands, Poland<sup>255</sup>, Slovenia and Spain) are members of the Hague Union. The accession of the European Community to the Geneva Act of the Hague Agreement has been approved<sup>256</sup> and the European Community is now a party to the Agreement<sup>257</sup>.

None of the various Acts contain substantive provisions relating to design law including the experimental use exception.

### 4.4.2. Community Design Directive

Article 13 of Directive 98/71/EC on the legal protection of designs (the "Designs Directive") contains a mandatory experimental use exception. Article 13 of Directive 98/71/EC states that:

*1. The rights conferred by a Community design shall not be exercised in respect of:*

*(a) acts done privately and for non-commercial purposes;*

*(b) acts done for experimental purposes;*

*(c) acts of reproduction for the purpose of making citations or of teaching, provided that such acts are compatible with fair trade practice and do not unduly prejudice the normal exploitation of the design, and that mention is made of the source.*

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<sup>255</sup> As of 2 July 2009, see [www.wipo.int/treaties/en/documents/pdf/hague.pdf](http://www.wipo.int/treaties/en/documents/pdf/hague.pdf).

<sup>256</sup> See Council Decision of 18 December 2006 (2006/954/EC) approving the accession of the European Community to the Geneva Act of the Hague Agreement concerning the international registration of industrial designs adopted in Geneva on 2 July 1999 and Council Regulation (EC) No 1891/2006 of 18 December 2006 amending Regulations (EC) No 6/2002 and (EC) No 40/94 to give effect to the accession of the European Community to the Geneva Act of the Hague Agreement concerning the international registration of industrial designs.

<sup>257</sup> As of 1 January 2008, see WIPO list of members at [www.wipo.int/treaties/en/documents/pdf/hague.pdf](http://www.wipo.int/treaties/en/documents/pdf/hague.pdf).

#### 4.4.3. Community Designs

The Community design was introduced in 2003. Article 20 of Council Regulation (EC) No. 6/2002 ("Community Design Regulation") setting up the Community design contains identical wording to Article 13 of Directive 98/71/EC.

#### 4.4.4. Member States

All Member States have reported provisions implementing Article 13(1)(b) of the Designs Directive namely that acts done for experimental purposes are excluded from the scope of design protection.

There are some differences in the language used in transposing Article 13(1)(b) but the differences do not appear to materially affect the meaning of the Article and may possibly arise from translation into or from the English language.

Consequently, in various Member States the design right *"cannot be valid for"* (Austria), *"is not infringed by"* (Belgium, Cyprus, Ireland, Luxembourg, Netherlands, Slovenia, Sweden, UK), *"may not be exercised in respect of"* (Czech Republic, France, Malta, Slovak Republic), *"does not extend to"* (Denmark, Germany, Italy, Portugal, Spain), *"does not cover"* (Finland), *"is not applied to"* (Latvia) and *"is not violated by"* (Estonia) experimental purposes.

Furthermore, in various Member States the exception applies to *"acts done for"* (Austria, Cyprus, Czech Republic, Denmark, France, Germany, Ireland, Italy, Malta, Portugal, Slovak Republic, UK), *"acts accomplished for"* (Belgium, Luxembourg, Netherlands, Slovenia), *"use for"* (Estonia, Finland), *"activities carried out for"* (Latvia), *"acts carried out for"* (Spain) *"any act which consists of"* (Sweden) experimental purposes.

All Member States have transposed the language "for experimental purposes" except Greece where the exception applies to acts done "for experimental or research purposes". It is not clear if use of the word 'research' is intended to increase the scope of the exception.

In Lithuania, *"the owner of a design cannot use his/her exclusive rights in order to prevent the use of a design for experimental purposes if such activity does not hamper the proper use of the design and the source of the design is indicated, the use does not contradict fair business practices and does not violate lawful interests of the owner"*. Therefore, the exception in Lithuania contains elements of Article 13(1)(c) of the Designs Directive.



In addition to the design right, the United Kingdom also recognises a national un-registered design right (as distinct from the unregistered Community design right) for which there is no experimental exception as such. However, the National Correspondent has indicated that the exclusive rights of the unregistered design right owner are limited to acts done in relation to commercial purposes. Section 263(3) of the (UK) Copyright Designs and Patents Act 1988 states that an act done in relation to an article is only done for commercial purposes if it is done with a view to that article being sold or hired in the course of business. This may therefore provide an indirect form of experimental exception. However, this form of exception would not appear to cover any experimental use done for "commercial purposes" which may be more narrow than the experimental use exception under Article 13(1)(b).

No cases regarding the interpretation of national provisions implementing Article 13(1)(b) were reported by National Correspondents and no guidance is provided by the Recitals to the Designs Directive. It is possible, therefore, that the meaning of "acts done for experimental purposes" may be attributed a meaning by courts similar to the first limb of the experimental use exception in respect of patents. If this were the case then without the second limb, namely "in relation to the subject-matter of the design", this experimental use exception is likely to offer a wide scope of protection to experimenters.

Fig. 3: Industrial Designs – EU Member States

	Directive	(a)	(b)	(c)
Austria	■	■	■	■
Belgium	■	■	■	■
Cyprus	■	■	■	■
Czech Republic	■	■	■	■
Denmark	■	■	■	■

	Directive	(a)	(b)	(c)
Estonia	■	■	■	■ Narrower variant
Finland	■	■	■	■
France	■	■	■	■
Germany	■	■	■	■
Greece	■	■	■	■
Hungary	■	■	■	
Ireland	■	■	■	■
Italy	■	■	■	■
Latvia	■	■	■	■
Lithuania	■	■	■	■
Luxembourg	■	■	■	■
Malta	■	■	■	■
Netherlands	■	■	■	■
Poland	■		■	
Portugal	■	■	■	■
Slovak Republic	■	■	■	■
Slovenia	■		■	■
Spain	■	■	■	■
Sweden	■	■	■	■

	Directive	(a)	(b)	(c)
UK	■	■.	■	■

4.5. Copyright

4.5.1. Legal background

All Member States have ratified the Berne Convention. Article 9(2) of the Berne Convention states that:

*It shall be a matter for legislation in the countries of the Union to permit the reproduction of [literary and artistic] works in certain special cases, provided that such reproduction does not conflict with a normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the author.*

Article 10 of the Berne Convention provides that quotations can be made from a work which has already been made available to the public, provided that their making is compatible with fair practice, and their extent does not exceed that justified by the purpose. Further, members of the Berne Union may provide that literary or artistic works may be used by way of illustration in publications, broadcasts or sound or visual recordings for teaching, provided such utilisation is compatible with fair practice. In both cases, the source and name of the author must be stated.

a. Copyright Directive

EU law does not provide for a specific exception from copyright protection for research or experimental use. Article 5(3) of Directive 2001/29/EC on the harmonisation of certain aspects of copyright and related rights in the information society (the "Copyright Directive") provides that Member States may provide for exceptions or limitations to protected works in the case of use for the sole purpose of illustration for teaching or scientific research, as long as the source is indicated and the purpose is non-commercial. Research is non-commercial if the actual conducting of the research is not commercial, even if the research is commercially funded by third parties. This exception is not mandatory.

The Copyright Directive also provides that non-commercial public libraries and archives may copy and distribute protected works. As this exception is also non-mandatory, the extent of the exception varies between the Member States in which it is applied.

*b. Database Directive*

Certain exceptions to copyright databases are set out in Article 6 of Directive 96/9/EC on the legal protection of databases (the "Database Directive") which contains the following **optional** exceptions:

*Article 6*

*(...)*

*2. Member States shall have the option of providing for limitations on the rights set out in Article 5 in the following cases:*

*(a) in the case of reproduction for private purposes of a non-electronic database;*

*(b) where there is use for the sole purpose of illustration for teaching or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose to be achieved;*

*(c) where there is use for the purposes of public security or for the purposes of an administrative or judicial procedure;*

*(d) where other exceptions to copyright which are traditionally authorised under national law are involved, without prejudice to points (a), (b) and (c).*

*3. In accordance with the Berne Convention for the protection of Literary and Artistic Works, this Article may not be interpreted in such a way as to allow its application to be used in a manner which unreasonably prejudices the right holder's legitimate interests or conflicts with normal exploitation of the database.*

*c. WIPO Copyright Treaty*

The WIPO Copyright Treaty ("WCT") is a special agreement under the Berne Convention. It entered into force on 6 March 2002 and is currently in force in Belgium, Cyprus, the Czech Republic, Hungary, Japan, Latvia, Lithuania, the Slovak Republic and Slovenia. It has been signed but not ratified by Austria, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Po-

land, Portugal, Spain, Sweden and the United Kingdom. Malta is not a contracting party.

Article 10 of the WCT provides that Contracting Parties may provide for limitations of, or exceptions to, the rights granted to authors of literary and artistic works under the WCT in certain special cases that do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the author.

*d. Member States*

While, for example, Article 30 TRIPS, in relation to exceptions to patent protection, is based in part on Article 9(2) of the Berne Convention and attempts to offer the same balancing of rights of rights holders with legitimate use, the "fair use" or "fair dealing" provisions found in Member States' laws vary considerably in comparison to patents and utility models. Furthermore, while there has been some harmonisation of fair use provisions in the EU because the measures to date have been optional and have not specified the exact form of exception permitted, no uniformity appears in Member States' laws as is the case for industrial designs and semiconductor topography rights.

In general, Member States' laws in relation to fair use of copyright works are very detailed and are often subject to multiple restrictions and limitations. They do not contain general exceptions in respect of experimental use. Therefore, the summary below reports the main types of provisions reported by National Correspondents which are of possible relevance in relation to experimental use.

Due to the nature of copyright and the fact that it protects the expression of information and not the information itself, it is not likely that anyone could meaningfully experiment, as such, on or with a copyright work<sup>258</sup>. The relevance to experimental use, and perhaps the wider research community, is dissemination and re-use

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<sup>258</sup> It was pointed out to the Contractors by one respondent that this may not be entirely correct. The respondent noted that research and education, at least in the Arts, very often includes experimental use of copyright works. The example was given of setting up a theatre performance which requires experimentation on the music in order to get the right ambience. In the course of that experimentation a number of copies of the music are made which could be viewed as infringing copies under copyright law. Another example was given where a test broadcast of new interactive content was delayed and nearly rendered impossible due to copyright clearance issues. An exception for educational and research purposes and/or copies which have no individual commercial significance was suggested.

of information (reproduction and making available) and the re-publication of previous results, findings, data etc. contained in copyright works (citation).

**Private Use** – Private use exceptions have been reported for Austria, Czech Republic, Denmark, Finland, Ireland, Italy, Malta, Netherlands, Portugal, Spain, Sweden and Slovenia and generally permit private use by individuals for non-commercial purposes and do not necessarily apply to all types of copyright works.

In Austria, the exception may include business purposes but is limited to paper or similar media only.

The Czech Republic permits internal use by legal entities.

Finland permits private use, research and other non-commercial activities.

**Research** – Some Member States (Austria, Cyprus, Finland, Ireland, Latvia, Malta, UK) provide for fair use exceptions in relation to research but the scope of the exceptions varies considerably.

In Austria, the exception applies to non-commercial research other than on paper or similar media and the exception applies to private research in Cyprus and Finland. However, in Ireland the exception may also apply to research for commercial purposes, but this is not clear. The exception in Latvia applies to reproduction in textbooks for teaching and research purposes and therefore is similar to the citation right discussed below. In the UK, the exception applies to non-commercial research only.

In Hungary, parts of literary or musical works that have been made public and small independent works can be quoted for illustration for teaching in educational institutions and for the purpose of scientific research by designating the source and the author and to the extent justified by the aim, provided that the recipient work is not utilised commercially.

**Citation/Quotation/Examples** – All Member States except Denmark, Netherlands and Germany have reported exceptions in respect of the use of copyright works for citation, quotation or as examples. In some cases, the right is limited to specific types of copyright works (Austria) and in other cases the right is limited to certain purposes (Belgium, Cyprus, Czech Republic, France, Latvia, Luxembourg, Malta, Slovak Republic). Generally, but not always, these exceptions do include scientific research (in Luxembourg it may not have a commercial purpose and in the Czech

Experimental use exception

Republic it must be independent scientific work) except in Malta. In Belgium the right holder must be remunerated.

**Other** – A number of Member States have limited exceptions in relation to non-commercial educational and research use and these are reported in the table below.

**Fig. 4: Copyright – EU Member States**

*Important Note: The contents of this table are illustrative only. Most exceptions are subject to detailed conditions.*

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communica- tion to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
<b>Austria</b>		■ Use for own purposes May include business purposes. Paper or similar media only.	■ Own non-commercial research other than on paper or similar media	■ Citation: limited to literary, musical and fine art works	■ Private non-commercial use and non-commercial research	■ Film works only for education and teaching purposes			
<b>Belgium</b>				■ Quotation: for criticism, education, review or scientific research (for			■ Copying for educational or scientific research purposes (non-		



Experimental use exception

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
				remuneration)			commercial) ■ Limited communication within recognised institutions for educational or scientific research (non-commercial) ■ Substantial amount by lawful user for non-commercial educational or scientific research		

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
							purposes.		
Cyprus			■ Private research	■ Example: during scientific research or for teaching				■ Critical review and current events	
Czech Republic		■ Including computer programs and electronic databases for personal use or internal use (if legal entity)		■ Quotation: in independent scientific, critical or technical work or work designated for teaching purposes for the clarification of its					

## Experimental use exception

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
				content; in a lecture exclusively for scientific, teaching or other instructive or educational purposes.					
Denmark		■ Private, non-commercial use by non-legal persons					■ Copyright and database rights subject to copyright rules		
Estonia				■ Quotations or summaries					■ Copy for illustration for non-commercial

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
									teaching or scientific research ■ Copy for sole purpose of teaching or scientific research in educational and research institutions whose activities are not carried out for commercial purposes
Finland		■ Private use, research and other		■ Quotation: to extent nec-			■ Copyright and database		■ Make copies for educational

## Experimental use exception

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
		non-commercial activities. Does not apply to all works.		essary for the purpose			rights subject to copyright rules		and scientific research subject to collecting society approval
France				■ Quotation: for criticism, education, review or scientific research purposes			■ Copyright and database rights subject to copyright rules		■ Short citations of a database may be incorporated into later informational work.
Germany									■ Limited right to grant public access to specific

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
									parts of works to extent necessary for non-commercial scientific work
Greece				■ Quotation: short extracts for providing support to case of person using quotation or critique					
Hungary			■ Citation/quotation	■ Citation/quotation			■ Copyright and		

## Experimental use exception

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
			for scientific research				database rights subject to copyright rules		
Ireland		■ Fair dealing for private study (non-commercial purpose)	■ Fair dealing for research (may include commercial purpose)	■ Citation, quotation and examples if non-substantial copying of work				■	
Italy		■							■ Reproduction of articles and public speeches
Latvia			■ Reproduction in	■ Quotations: for				■	

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
			textbooks for teaching and research purposes	scientific and research purposes					
Lithuania				■ Quotation					■ Reproduction for teaching and scientific research of extracts related to study programmes
Luxembourg				■ Short quotations: for criticism, education, scientific			■ Copyright and database rights subject to copy-		



## Experimental use exception

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
				research for non-commercial purposes			right rules		
Malta						<ul style="list-style-type: none"> <li>■ Of works for research or private study to individuals</li> </ul>	<ul style="list-style-type: none"> <li>■ Copyright in a database subject to same restrictions as other works</li> <li>■ Performance of acts normally necessary for licensed user to obtain access to contents and normal use</li> </ul>	<ul style="list-style-type: none"> <li>■ Reproduction by the press of articles on current topics where use is not expressly reserved</li> <li>■ Quotations for criticism or review</li> </ul>	<ul style="list-style-type: none"> <li>■ Reproduction, distribution or communication to the public for teaching or scientific research if non-commercial</li> </ul>

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
Netherlands		■ Use exclusively by person making copies						■ Unless copyright expressly reserved	
Poland		■	■ Research and institutional for teaching purposes or for research to use disseminated works in original and in translation and to make copies of parts of disseminated works						

## Experimental use exception

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
Portugal		■ Total or partial reproduction by a public library, non-commercial documentation center or scientific institution (not for public use)					■ Private, teaching and scientific use, public security or administrative/judicial proceedings	■ Press reviews, reporting on the arts, criticism, discussion and teaching	■ One copy for exclusively scientific/humanitarian interest of works not commercially available
Slovak Republic				■ Short quotations: for assessment, educational, scientific research or artistic pur-				■ Short quotations for review, criticism, current events or topics	■ Teaching

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
				poses					
Slovenia		■ Not for profit		■ Illustration, argumentation or referral				■ Current Events	■ Teaching
Spain		■ Not for profit		■ For analysis, comment or critical assessment				■ Topical subjects	
Sweden		■		■ Quotations			■ Copyright and database rights subject to copyright rules	■ Information on current events	

Experimental use exception

	Experimental exception	Private use	Research	Citation / Quotation / Examples	Non-electronic databases (copyright)	Communication to the public	Databases (Copyright and sui generis)	Critical review / current events	Other
UK		■ Fair dealing for private study	■ Fair dealing for research (non-commercial purpose)					■	

## 4.6. Database rights

### 4.6.1. Legal background

Article 9 of the Database Directive contains the following optional exceptions in respect of the *sui generis* database right:

*Article 9*

*Exceptions to the sui generis right*

*Member States may stipulate that lawful users of a database which is made available to the public in whatever manner may, without the authorisation of its maker, extract or re-utilise a substantial part of its contents:*

*(a) in the case of extraction for private purposes of the contents of a non-electronic database;*

*(b) in the case of extraction for the purposes of illustration for teaching or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose to be achieved;*

*(c) in the case of extraction and/or re-utilisation for the purposes of public security or an administrative or judicial procedure.*

### 4.6.2. Member States

Most but not all Member States have reported provisions implementing Article 9(b) of the Database Directive including Austria, Cyprus, Estonia, Greece, Italy, Latvia and Lithuania, Malta, Portugal, Slovak Republic, Spain and the UK.

Belgium appears to have implemented Article 9(b) in conjunction with Article (6)(2)(b) and thus the exception applies to both databases protected by copyright and by the database right. Other Member States have applied the same exceptions to databases protected by copyright and by the database right and these are set out in Fig. 4 in section 4.4.

Ireland has not implemented Article 9(b) but it has a fair dealing exception in relation to the extraction of a substantial part of a non-electronic database for research or private study<sup>259</sup>. It is not clear that "research" includes commercial research.

Certain provisions of the Finnish Copyright Act apply to the database right and the Finnish Copyright Act contains a general exception under which private use of a work does not infringe the copyright in the work. However, this private use refers only to private research and other non-commercial activities.

The Finnish Copyright Act has been amended with effect from 1 January 2007 and in accordance with the new provision a person may make copies of a disseminated work in connection with educational and scientific research provided that the collecting society in a certain field has given authorisation for such use. An organisation representing numerous right holders of works (or other protected subject matters) used in Finland is entitled to grant collective licenses. A user who obtains such a licence is permitted to use it on the same terms and conditions also for works (or other protected subject matters) of authors (or other right holders) not represented by the organisation.

In France, case law regarding databases considers that to the extent that a subsequent work has informational content, short citations of a database may be incorporated into such subsequent work without any reference to its author.

In the Netherlands, the Dutch Copyright Act specifically states that the exceptions specified in the Database Directive do not apply.

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<sup>259</sup> Section 329 Copyright and Related Rights Act 2000 (Ireland). Curiously, the definition of 'fair dealing' in this section means the extraction of the contents of a database by a lawful user to an extent which will not unreasonably prejudice the interests of the rights owner.

Fig 5. Database Rights (Sui Generis) – EU Member States

	Scientific research and Teaching Purposes	Directive	Teaching/ Scientific Research	Research use	Other
Austria	■				
Belgium	See Fig. [5] Copyright				
Cyprus	■				
Czech Republic		■ (a), (b) and (c)			
Denmark	See Fig [5] Copyright				
Estonia		■ (a), (b) and (c)			
Finland	See Fig. [5] Copyright				
France	See Fig. [5] Copyright				
Germany		■ (a), (b) and (c)			
Greece			■		
Hungary	See Fig. [5] Copyright				
Ireland		■ (a)			■ Research
Italy					
Latvia		■ (a), (b) and (c)			
Lithuania		■ (a), (b) and (c)			
Luxembourg	See Fig. [5] Copyright				
Malta		■ (a), (b) and (c)			
Netherlands	<i>No exception</i>				



	Scientific research and Teaching Purposes	Directive	Teaching / Scientific Research	Research use	Other
Poland		■ (a), (b) and (c)			
Portugal		■ (a), (b) and (c)			
Slovak Republic		■ (a), (b) and (c)			
Slovenia		■ (a), (b) and (c) (variants)			
Spain		■ (a), (b) and (c)			
Sweden	See Fig. [5] Copyright				
UK		■ (b)			

4.7. Plant breeders' rights

4.7.1. Legal background

With the exception of Cyprus, Greece, Luxembourg and Malta, all Member States of the EU are members of the International Union for the Protection of New Varieties of Plants (UPOV). The Union operates mainly under two versions of the International Convention for the Protection of New Varieties of Plants, the 1978 Act<sup>260</sup> and the 1991 Act<sup>261</sup>. Of the European Member States who are members of UPOV, only Belgium remains a member under the older 1961/1972 Act<sup>262</sup>.

<sup>260</sup> The Act of October 23 1978

<sup>261</sup> The Act of March 19 1991.

<sup>262</sup> The International Convention for the Protection of New Varieties of Plants of December 2 1961 as amended by the Additional Act of November 10 1972.

#### 4.7.2. UPOV Exceptions

Article 5(iii) of the 1978 Act contains what is commonly referred to as the "Breeders' Exception", namely that *"authorisation by the breeder shall not be required either for the utilisation of the variety as an initial source of variation for the purpose or creating other varieties or for the making of such varieties. Such authorisation shall be required, however, when the repeated use of the variety is necessary for the commercial production of another variety"*<sup>263</sup>.

This exception is carried over in Article 15(1)(iii) of the 1991 Act but additional exceptions were also included, including an experimental exception. Article 15(1) of the 1991 Act states that:

- (1) *The breeder's right shall not extend to*
- (i) *acts done privately and for non-commercial purposes,*
  - (ii) *acts done for experimental purposes and*
  - (iii) *acts done for the purpose of breeding other varieties, and, except where the provisions of Article 14(5) apply, acts referred to in Article 14(1) to (4) in respect of such other varieties.*

#### 4.7.3. Community Plant Variety Rights

The European Communities became a member of UPOV under the 1991 Act on 29 July 2005. However, Council Regulation (EC) No 2100/1994 on Community plant variety rights contains provisions similar to Article 15 of the 1991 Act as follows:

*Article 15*

*The Community plant variety rights shall not extend to:*

- (a) *acts done privately and for non-commercial purposes;*
- (b) *acts done for experimental purposes;*
- (c) *acts done for the purpose of breeding, or discovering and developing other varieties....*

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<sup>263</sup> The somewhat controversial "Farmer's Right" or "Farmer's Exception" is beyond the scope of this study.

No Community measures have been taken to harmonise these provisions outside of the Community plant variety rights<sup>264</sup>.

### 4.7.4. Member States

All Member States except Luxembourg recognise a national form of plant breeders' rights. All other Member States except the Czech Republic have a statutory experimental use exception which takes different forms. Only some Member States have an experimental use exception in a form similar to patents, utility models and designs.

#### a. *Production or Preservation*

In Belgium, plant breeders' rights do not extend to the production or preservation of genetic material of a plant variety which is exclusively carried out for scientific research.

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<sup>264</sup> It is possible that the 1991 Act may be claimed to be directly effective in Member States which do not have similar exceptions to those set out in the 1991 Act but the likelihood of success of such a claim is far from clear. The ECJ has held that GATT is not directly effective (*C21 – 24/7 International Fruit Company NV and others v Produktschap voor Groenten en Fruit*; *C-280/1993 Federal Republic of Germany v Council of the European Union*) as its rules are not unconditional and that an obligation to recognize them as rules of international law which are directly applicable in the domestic legal systems of the contracting parties cannot be based on the spirit, general scheme or terms of GATT. In contrast, the Yaounde Convention was found to have direct effect in *C 87/75 Bresciani v Amministrazione Italiana delle Finanze*. The ECJ commented in that case that 'although there was certain 'imbalance' between the obligations assumed by the community towards the associated state, which is inherent in the special nature of the Convention, it did not prevent recognition by the community that some of its provisions have a direct effect'. Advocate General Tesauro in *Case C-53/96 T Hermes International v FHT Marketing Choice BV* found that a provision of the WTO was capable of direct effect as it was 'obviously sufficiently clear and precise, and does not depend on the adoption of any subsequent act'. The court has also held that certain decisions of the Council Association established by the EEC-Turkey Association Agreement have direct effect (*C192/89 S. Z. Sevince Staatssecretaris van Justitie*) as, having regard to the wording, nature and purpose of the agreement, the decisions contained a clear and precise obligation which is not subject to, in its implementation or effects, to the adoption of any subsequent measure.

*b. Breeding Experimentation*

Cyprus, Denmark, Finland, Ireland and Lithuania all maintain an exception in respect of breeding experimentation or activities.

*c. Creating New Varieties*

Cyprus, Estonia, France, Finland, Ireland, Latvia, Lithuania, Netherlands, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the UK all maintain a specific exception in relation to creating new varieties.

*d. Experimentation*

Each of Finland, Greece, Italy, Latvia, Lithuania, Slovenia, Spain, Sweden, UK and Lithuania maintain an exception for acts done for experimental purposes. This exception is similar to the experimental use exception in respect of industrial designs and to the first limb of the experiment use exception in respect of patents and utility models. The second limb of the experimental use exception in respect of patents and utility models is not required as the experimentation will only generally relate to the protected plant variety<sup>265</sup>.

The exception in the Netherlands relates to activities carried out solely for scientific research purposes and in the Slovak Republic it relates to activities for testing purposes.

**Fig. 6: Plant Breeders' Rights – EU Member States**

	Member UPOV 1991 Act	Member UPOV 1978 Act	Production or Pres- ervation for scien- tific research	Breeding Experi- mentation	Creating New Va- rieties	Research use	Experimental Use	Other
Austria	■				■		■	■ Acts done pri- vately and

<sup>265</sup> COOK, "A European Perspective as to the Extent to which Experimental Use, and certain other, Defences to Patent Infringement, apply to Differing Types of Research", July 2006, *Intellectual Property Institute*, page 113

Experimental use exception

	Member UPOV 1991 Act	Member UPOV 1978 Act	Production or Pres- ervation for scien- tific research	Breeding Experi- mentation	Creating New Va- rieties	Research use	Experimental Use	Other
								for non- commer- cial pur- poses
Belgium		196 1/19 72 Act	■ Exclu- sive pur- pose only					
Cyprus				■	■			
Czech Republic	■		No Research Exception					
Denmark	■			■		■		
Estonia	■				■	■	■ Sc. research & off. trials for comp.	■ Non- commer- cial Per- sonal use
Finland	■							
France		■			■			
Germany	■				■		■	Personal, non- commer- cial pur- poses
Greece			Plant variety rights do not extend to acts done for experimental purposes					

	Member UPOV 1991 Act	Member UPOV 1978 Act	Production or Pres- ervation for scien- tific research	Breeding Experi- mentation	Creating New Va- rieties	Research use	Experimental Use	Other
Hungary	■				■		■	
Ireland		■		■	■			
Italy		■						
Latvia	■							
Lithuania	■			■	■			
Luxembourg	N/A: No Plant varieties protection available							
Malta	No research exception							
Netherlands	■				■ Whether new or deriva- tive is a ques- tion for the courts	■ Sci- enti- fic Re- sear- ch		■ Private non- commer- cial
Poland	■				■		■	■ Per- sonal, non- commer- cial pur- poses
Portugal		■			■			

Experimental use exception

	Member UPOV 1991 Act	Member UPOV 1978 Act	Production or Pres- ervation for scien- tific research	Breeding Experi- mentation	Creating New Va- rieties	Research use	Experimental Use	Other
Slovak Re- public		■			■		■	■ Non- business activities
Slovenia	■				■		■	■ Private non- commer- cial use
Spain	■			■			■	■ Private and non- commer- cial use
Sweden	■				■		■	■ Private non- commer- cial use
UK	■				■		■	

4.8. Topography Rights

4.8.1. Legal Background

Council Directive 87/54/EC on the legal protection of topographies of semiconductor products (the "Semiconductor Topography Directive") provides that:

*Article 5*  
*(...)*

*2. Notwithstanding paragraph 1, a Member State may permit the reproduction of a topography privately for non-commercial aims.*

*3. The exclusive rights referred to in paragraph 1(a) shall not apply to reproduction for the purpose of analysing, evaluating or teaching the concepts, processes, systems or techniques embodied in the topography or the topography itself.*

#### 4.8.2. Member States

All Member States have reported provisions equivalent to Article 5(3) of the Semiconductor Topography Directive with some differences which are noted below in relation to each element of Article 5(3). No general experimental use exceptions were reported.

##### *a. Analysing, Evaluating or Teaching*

All Member States have reported provisions relating to "analysing" and "teaching" but Cyprus, the Czech Republic, Estonia, Finland and Sweden do not expressly refer to "evaluating" and the UK does not refer to "teaching".

##### *b. Concepts, Processes, Systems or Techniques*

All Member States have reported provisions relating to "*concepts, processes, systems or techniques*", except Austria, the Czech Republic, Estonia, Finland, France, Hungary, Lithuania, Poland and Portugal.

##### *c. In the Topography or the Topography itself*

Generally Member States have not expressly referred to 'in the topography or the topography itself'.

##### *d. Other*

The Czech Republic also provides for an exception in respect of reproduction for research or development.



Fig. 7: Topography Rights – EU Member States

	EU Directive Variant	Analysing	Evaluating	Teaching	Concepts, Processes, systems or techniques	Embodied in the topography	In the topography itself	Other
Austria	■	■	■	■				
Belgium	■	■	■	■	■	■		
Cyprus	■	■		■	■	■	■	
Czech Republic	■	■		■				<div><div>■</div>Reproduction for research or development<div>■</div>Activities carried out for non-commercial purposes<div>■</div>Commercial exploitation</div>

	EU Directive Variant	Analysing	Evaluating	Teaching	Concepts, Processes, systems or techniques	Embodied in the topography	In the topography itself	Other
								of a topography created as a result of analysis, re-search or development.
Denmark	■	■	■	■	■	■	■	
Estonia	■	■		■				■ Study
Finland	■	■		■				■ Private use
France	■	■	■	■				
Germany	■	■	■	■	■			
Greece	■	■	■	■	■	■		
Hungary	■	■	■	■				

Experimental use exception

	EU Directive Variant	Analysing	Evaluating	Teaching	Concepts, Processes, systems or techniques	Embodied in the topography	In the topography itself	Other
Ireland	■	■	■	■	■	■		
Italy	■	■	■	■	■			
Latvia	■	■	■	■	■	■	■	
Lithuania	■	■	■	■				
Luxembourg	■	■	■	■	■	■	■	
Malta	■	■	■	■	■	■	■	■ Anything in relation to a topography giving rise to protection which is created on the basis of valid analysis/evaluation

	EU Directive Variant	Analysing	Evaluating	Teaching	Concepts, Processes, systems or techniques	Embodied in the topography	In the topography itself	Other
								of another topography
Netherlands	■	■	■	■	■			
Poland	■	■	■	■			■ Testing	
Portugal	■	■	■	■				
Slovak Re-public	■	■	■	■	■	■	■	■ Further commercial exploitation or importation with express consent
Slovenia	■	■	■					
Spain	■	■	■	■	■	■	■	

Experimental use exception

	EU Directive Variant	Analysing	Evaluating	Teaching	Concepts, Processes, systems or techniques	Embodied in the topography	In the topography itself	Other
Sweden	■	■		■				
UK	■	■	■		■	■		

## 5. The current situation in the United States and Japan

### 5.1. United States

#### 5.1.1. Patents

The United States does not have a statutory experimental use exception (as opposed to a statutory Bolar exception). However, the oldest form of a common law experimental use exception comes from the United States.

The experimental use exception in the United States is a limited one and does not apply if there is any commercial element to the experimentation<sup>266</sup>.

In *Whittemore v Cutter*<sup>267</sup> the court held that "*it could never have been the intention of the legislature to punish a man, who constructed a machine merely for philosophical experiments, or for the purpose of ascertaining the sufficiency of the machine to produce its described effects*"<sup>268</sup>. In a subsequent case the same Judge excluded the use of a patented invention for profit although the meaning of "for profit" has been debated<sup>269</sup>. In 1861 the exception was expressed as use "*for the sole purpose of gratifying a philosophical taste, a curiosity, or for mere amusement*"<sup>270</sup>.

Following these cases, the experimental use exception appears to have firstly been interpreted broadly by the US courts<sup>271</sup> but a more restrictive view has since been taken.

In *Roche Products v Bolar Pharmaceutical Company*<sup>272</sup>, the court again held that the experimental use exception is very narrow and limited to experimentation for

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<sup>266</sup> See generally *The Experimental Use Exceptions to Patent Infringement* Nystar Research Report (New York Science and Technology Center at Syracuse University College of Law) September 2005

<sup>267</sup> 29 F. Cas. 1120 (C.C.D. Mass. 1813)(No. 17,600)

<sup>268</sup> *Ibid.* at page 1121

<sup>269</sup> *Sawin v Guild* 21 F. Cas. 554 (1813) (C.C. D. Mass. 1813) (No. 12,391).

<sup>270</sup> *Poppenhusen v Falke* 19 F. Cas. 1048 at 1049 (C.C.N.Y. 1861) (No. 11,279)

<sup>271</sup> *Ruth v Stearns-Roger Mfg Co* 13 F.Supp. 697 (D.Colo. 1935); *Akro Agate Co. v Master Marble Co* 18 F. Supp 305 (1937); and *Dugan v Lear Avia Inc* 55 F. Supp. 223 (1944)

<sup>272</sup> 733 F. 2d 858 (Fed. Cir. 1984)

amusement, to satisfy idle curiosity or for strictly philosophical enquiry. The exception did not cover use of a patented drug by Bolar for bioequivalence testing of its generic version with a view to obtaining regulatory approval. As noted earlier in this chapter, this decision led to the enactment of a statutory regulatory review exception (the Bolar exception) in § 271 (e)(1) of the Hatch-Waxman Act.

In *Embrex v Service Engineering*<sup>273</sup> the CAFC (Court of Appeal of the Federal Circuit) held that use for commercial purposes was not exempt even where the acts were done to invent around the patent and there were no sales of the patented invention or products made with it.

In *Madey v Duke University*<sup>274</sup>, the CAFC held that use of a patented tool by Duke University, which was owned by Madey, was patent infringement. The use of the patented tool to further the legitimate business objectives of the University brought the use outside of the exception.

### 5.1.2. Copyright

There is no express experimental exception under US copyright laws. However, under § 107<sup>275</sup>, the fair use doctrine immunises certain conduct that would otherwise be an infringement of copyright when allowing the conduct is seen as socially useful, consistent with the First Amendment and unlikely to undermine the economic interests of authors in their creations.

Section 107 sets out four factors that are considered in applying the fair use doctrine: (1) purpose and character of use; (2) nature of the copyrighted work; (3) amount and substantiality of portion used; and (4) effect on market for copyrighted work. If the defendant's use of the work is commercial in nature, it is less likely to be classified as fair use, while if the use is private and non-commercial, it is more likely to be considered fair use. Certain types of works are more acceptable to copy, such as works of scholarship, history or biography versus fiction. The more of a protected work that is copied by an unauthorised user, the less likely it is going to be classified as fair use. If the defendant's copy either substitutes for or destroys the value of the plaintiff's work, then the copying usually will not be a fair use.

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<sup>273</sup> 216 F. 3d 1343 (2000)

<sup>274</sup> 307 F. 3d 1351

<sup>275</sup> Copyright Act of 1976, 17 U.S.C.

### 5.1.3. Semiconductor Topography Rights

Section 906 of the Semiconductor Protection Act of 1984 permits reproduction of a protected mask work for purposes of analysis and evaluation. The provision allows others to incorporate the results of such efforts into their own "original" mask work and is an attempt to encourage the creation of improved derivative works through reverse engineering. In *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555 (Fed. Cir. 1992), after holding that the traditional test of "substantial similarity" applies to determine the infringement of mask works, the court examined the defendant's paper trail to distinguish legitimate reverse engineering from actionable piracy.

### 5.1.4. Other IPR

Utility models are not protected under US law. Industrial designs are protected as design patents which are subject to the same experimental use exceptions as utility patents. Database rights do not have *sui generis* protection and are protected to a limited degree by copyright law and would be subject to the fair use limitation of copyright law.

US law relating to the protection of plants is complex and does not include plant breeders' rights. The protection available includes utility patents, plant patents under the Plant Patent Act ("PPA") and plant variety protection certificates under the Plant Variety Protection Act ("PVPA"). These laws provide protection which is different but overlapping.

Although the National Correspondent was not aware of any case law regarding the experimental use exception for the PPA, they believe that a court would be likely to apply the same analysis to create an experimental use exception to the PPA as applies to utility patents. The PVPA has an express experimental exception in Section 114: "*The use and reproduction of a protected variety for plant breeding or other bona fide research shall not constitute an infringement of the protection provided under this Act.*"

## 5.2. Japan

### 5.2.1. Patents

Article 69(1) of the Japanese Patent Law states that:



*A patent right shall not be effective against the working of the patented invention for experimental or research purposes.*

Although Article 69(1) does not contain the second limb of the experimental use exception as it is most commonly found in the Member States, it has been interpreted narrowly so as to permit experimentation on but not with the patented invention.

This approach was confirmed by an advisory group report issued by the Japanese Patent Office in 2004<sup>276</sup>. The advisory group considered experimenting on a patented technology to determine whether the claims are valid, whether the invention meets the experimenter's needs or to make a better invention to come within the statutory experimental use exception. However, experimenting using a patented research tool was not considered to fall within the scope of the statutory experimental use exception.

As regards experimentation for the purposes of regulatory approval, the Japanese Supreme Court has permitted generic drug developers, under Article 69(1), to conduct experiments on patented drugs for the limited purpose of showing safety and efficacy in order to obtain regulatory approval so that the generic drugs could be marketed in a timely manner following expiry of the relevant patent<sup>277</sup>. Therefore, in respect of pre-clinical and clinical trials to obtain approval for generic drugs, Japan has a judicially mandated experimental use exception similar to the Bolar exception.

Since this decision a working group on IP reform convened by the Prime Minister's Cabinet Council for Science and Technology Policy (CSTP) has concluded that whether the exception should cover university research and whether it should cover the use of patented research tools in research for non-commercial purposes should be revisited<sup>278</sup>.

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<sup>276</sup> Japanese Patent Office (2004) *Working group on problems related to patent strategy and planning*

<sup>277</sup> Case 153 of 1998 (16 April 1999) Minshu vol. 53 no. 4 at 627.

<sup>278</sup> Council for Science and Technology Policy (2006) *Principles related to research licences of intellectual property rights arising from government funded research and development in universities*

### 5.2.2. Life Science Research Tools

The CSTP has recommended that the holders of life science research tool patents should grant requests for non-exclusive licences for research purposes<sup>279</sup>. An explanatory note defines research purposes as basic and pre-commercial (*kigouka mae*) research. The non-exclusive royalty provisions and other licence terms are subject to a reasonableness requirement that takes into account the nature of the research in which the tools will be used, as well as the source of funding for the research tools. If the government is the funding source of a research tool arising from university research, then the research tool should be licensed free of charge to other universities.

One exception to this non-exclusive licensing requirement under reasonable terms is in respect of business strategies. An explanatory note explains that this exception only applies to a licensor (the holder of the rights to the research tool) who intends to develop the research tool into a commercial product or if a licensee requires exclusive rights while developing the tool into a commercial product. The note specifically indicates that this exception can apply to research tools being commercialised by university start ups or by other companies that have engaged in joint research with universities to develop the research tools. However, as the note states that this exception is for the purpose of developing the research tool as a product, it can be read to indicate that once an initial product is commercialised, the company is under an obligation to make the research tool widely available on reasonable terms.

In this regard the recommendations go beyond the guidelines issued by the National Institutes of Health ("NIH") in the US on licensing of NIH funded research tools and, unlike the NIH guidelines, they apply to research tools invented in universities without government funding and to research tools invented in private undertakings.<sup>280</sup>

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<sup>279</sup> Council for Science and Technology Policy (2007) *Draft Principles for the smooth use of research tool patents in the life sciences*

<sup>280</sup> The National Correspondent for Japan indicated that complaints by pharmaceutical companies that they are required to pay high licensing fees to foreign biotechnology companies for use of patented research tools and the desire to avoid Japanese universities and biotechnology companies following the same approach influenced the CSTP.

### 5.2.3. Copyright

Japanese law permits exceptions to copyright infringement in relation to copying without the right holder's permission in respect of personal use, educational purposes in educational institutions and library materials.

### 5.2.4. Other IPR

In respect of utility models, experimentation on (*e.g.*, for verification and reverse engineering), but not with, the subject of a utility model, is permitted. In theory, the same experimentation "on but not with" distinction applies to industrial designs. Our National Correspondent was not aware of any cases on the issue.

Sui generis database rights do not exist under Japanese law and rather copyright protection applies to databases. Any "experimental" use of a database without the owner's permission would have to be justified under the limited exemptions under copyright law for copying by educational institutions and for personal use.

Plant breeders' rights are governed by the Plant Variety Protection and Seed Act of 1998. Article 21(1) appears to be a broad exception but is limited in practice and states that plant breeders' rights do not cover: "(i) *exploitation of the variety for the purpose of breeding new varieties and for other experimental and research purposes*"<sup>281</sup>. However, the examination manual of the Ministry of Agriculture, Forestry and Fisheries for examiners of plant breeders' rights application notes that this exemption is limited so as not to damage the interests of the right holder. It gives the following as specific examples of permitted research: (1) use of a registered plant variety as necessary to plan a selective breeding programme and (2) research to further the bases of plant breeding in general but that is not directed at the breeding of a registered plant<sup>282</sup>.

Article 12(2) of the Act Concerning Circuit Layout of a Semiconductor Integrated Circuit<sup>283</sup> exempts: "*the manufacture of a semiconductor integrated circuit made utilising a registered circuit layout for the purpose of analysing or evaluating the semiconductor integrated circuit*". Thus experimentation "on, but not with" is permitted.

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<sup>281</sup> See [www.cas.go.jp/jp/seisaku/hourei/data/saa\\_2.pdf](http://www.cas.go.jp/jp/seisaku/hourei/data/saa_2.pdf)

<sup>282</sup> See [www.ncss.go.jp/main/gyoma/hinsyuhogo/data.pdf](http://www.ncss.go.jp/main/gyoma/hinsyuhogo/data.pdf)

<sup>283</sup> Law No. 43, 1985, last revised 1993

## 6. Practical impact

### 6.1. Existing surveys

A German survey, reported in OECD (2002), found that patents on research tools did not have a discernible impact on the cost or pace of research in Germany. The reported reasons for this included the fact that some research tools are staple products and can simply be purchased without restrictions, infringement can be difficult to detect and staff are often unaware of the legal implications of using patented research tools<sup>284</sup>. The existence of an "informal research exception", *i.e.* that researchers act as though there is no threat of patent infringement hence minimising any impact of patented research tools on research, is supported by evidence from Australia.

In the concluding roundtable discussions to the CSIC/OECD/OEPM Conference on Research Use of Patented Inventions, it was noted that the variety of research exceptions in Europe is a factor of uncertainty for industry and this has increased with the divergent implementation of the regulatory review defence in Europe. The participant's main recommendation involved the production of guidelines and the improvement of information about the different national systems and their respective economic efficiency. The recommended guidelines should principally deal with the efficient licensing of research tools<sup>285</sup>.

In the UK, the Gowers Review of Intellectual Property<sup>286</sup> reported that the existence of the exception reduced the transaction costs involved in clearing rights for use of patents in experimentation and research. It noted that the number of pat-

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<sup>284</sup> J. STRAUSS, "Genetic Inventions and Patent Law", reported in *OECD Genetic Inventions, Intellectual Property Rights and Licensing Practices* 2002 at pages 46-49

<sup>285</sup> CISC/OECD/OEPM *Conference on Research Use of Patented Inventions* Madrid 18-19 May 2006 at p 24

<sup>286</sup> The Gowers Review was an independent review of the UK intellectual property framework, which was commissioned by the Chancellor of the Exchequer. The review was conducted from December 2005 to December 2006, and the final report was published on 6 December 2006 and is available at [www.hm-treasury.gov.uk/d/pbr06\\_gowers\\_report\\_755.pdf](http://www.hm-treasury.gov.uk/d/pbr06_gowers_report_755.pdf)

ented materials required to conduct experiments was often so great that the transaction costs of obtaining licences for all of them were prohibitive<sup>287</sup>.

The Review also reported that the Department of Trade and Industry and the Intellectual Property Institute found that the law on the research exception was widely seen as unclear and in need of clarification. It also found that small research groups in particular lost out under the existing law for fear of facing a costly law suit<sup>288</sup>.

In relation to copyright, a survey of educational institutions found that:

- 90% of respondents had to chase rights holders for permission, and the average number of items chased per institution per annum was 97;
- 12.5% of requests for permission to use material were never answered; and
- fees of up to £7.55 per article were charged in the print environment. For 300 students this resulted in a cost of £2,265<sup>289</sup>.

Another survey reported in OECD (2002) related to the United States in which interviewees singled out the patenting of research tools as contributing to *"the general complexity and increasing transaction costs and delays"*<sup>290</sup>.

There are examples reported from the US where difficulties have arisen in the context of the licensing of research tools and solutions have been found.

The NIH entered into a memorandum of understanding with Wisconsin Alumni Research Foundation regarding its patent over pluripotent embryonic stem cells and the method of isolating after concerns were raised that the patent could prevent access to it as a research tool<sup>291</sup>.

Another example involved the Cre-lox tool invented and patented by Harvard University and exclusively licensed to DuPont. The licensing terms requested by DuPont were onerous and included restrictions on use and commercial rights to future inventions. Whilst some universities entered into these agreements, the NIH

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<sup>287</sup> At page 45

<sup>288</sup> *Ibid.*

<sup>289</sup> *Ibid.* referring to Gadd *Clearing the way: Copyright Clearance in UK Libraries* 2001

<sup>290</sup> *Ibid.* at page 50

<sup>291</sup> OECD Genetic Inventions, *Intellectual Property Rights and Licensing Practices* 2002 at p 13

ultimately entered into a memorandum of understanding with DuPont which made public sector access conditions less onerous<sup>292</sup>.

## 6.2. Workshop

At the workshop for this topic in January 2008 it was generally (although not universally) agreed that the different applicable systems for experimental use exceptions was unnecessarily complex, so that consideration should be given to harmonisation to create greater legal certainty in this area across all the Member States.

## 6.3. Current survey

72% of respondents indicated that they had not encountered any difficulties in relation to the application of the experimental research exception in the EU, whereas the remaining 28% of respondents indicated that they had. One respondent indicated that the experimental research exception was important in the area of computer science, and opined that it would grow in importance for the next generation of technology. The respondent suggested that the experimental research exception was, in his view, very useful in circumstances where, for example, a patent owner wished to prevent a researcher speaking on the patented technology at an upcoming conference. In such circumstances, the researcher could rely on the experimental research exception.

Another respondent indicated that reaching agreement between partners in joint research projects on the contractual specification of the exception to be granted to partners is often difficult.

94% of respondents agreed (agreed (47%) or strongly agreed (47%)) that if harmonisation of the patent system is to occur in the EU that the experimental use exception should be harmonised. 5% of respondents expressed no opinion on the matter and no respondents disagreed.

79% of respondents agreed (agreed (47%) or strongly agreed (32%)) that the experimental use exception should be harmonised even in the absence of a Community Patent. 11% of respondents had no opinion and 11% disagreed. A number of respondents indicated that a common definition of, and centralised approach to, the

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<sup>292</sup> *Ibid.* at p 14

exception would always be beneficial. One respondent stated that the possibility of relying on the experimental use exception, and therefore the need to define its scope according to the national applicable law, often arises as an "FAQ" (frequently asked question) in EU-funded research and development projects, and that a directly applicable regime at EU-level would largely simplify this issue.

Approximately 79% of respondents either agreed (63%) or strongly agreed (16%) that an EU-definition of the experimental use exception should be based on the definition contained in the Community Patent Convention. 16% of respondents had no opinion. 5% of respondents disagreed. One respondent recommended that both basic and applied research should come within the scope of such a definition.

74% of respondents agreed (agreed (63%) or strongly agreed (11%)) that a non-exhaustive list of permitted acts within a definition of the experimental use exception would be helpful. 21% of respondents expressed no opinion and 5% of respondents disagreed.

80% of respondents either agreed (55%) or strongly agreed (25%) that the issues surrounding the use of patented research tools should be regulated. 15% of respondents expressed no opinion and 5% of respondents disagreed.

74% of respondents agreed (42%) or strongly agreed (32%) that guidelines should be issued by the European Commission and Member States in relation to the use and licensing of patented research tools from publicly funded research. 11% of respondents expressed no opinion and 16% of respondents disagreed. In response to this question, one respondent suggested that such guidelines should be issued in relation to all forms of intellectual property resulting from publicly-funded research. 37% of respondents either agreed (26%) or strongly agreed (11%) that mandatory licensing of patented research tools should be introduced in the EU. 37% of respondents either disagreed (32%) or strongly disagreed (5%) with this approach. 26% of respondents expressed no opinion on this issue.

63% of respondents either agreed (37%) or strongly agreed (26%) that harmonisation of the experimental use exception is required in respect of clinical trials. 32% of respondents expressed no opinion and 5% of respondents disagreed.

Approximately 47% of respondents either agreed (26%) or strongly agreed (21%) that an appropriate exception should be included in any patent harmonisation measures to resolve the possibility of conflict between gene sequence patenting and

plant breeders' rights. 47% of respondents expressed no opinion and 5% of respondents disagreed.

74% of respondents either agreed (58%) or strongly agreed (16%) that, in the context of the experimental research exception, non-harmonised IPR such as copyright, should be harmonised. 21% of respondents expressed no opinion and 5% of respondents disagreed. One respondent was of the view that such harmonisation is unfeasible and unlikely to ever be reached. Another respondent suggested that the experimental use exception is a patenting issue and does not apply to other IPR.

Another respondent stated that it is more important in their opinion that the application of the rule be clear, and said that it was *"more important to get the rule right than to harmonise"*.

## 7. Analysis and conclusions

### 7.1. Analysis of the Situation in the EU

#### 7.1.1. Application of the experimental use exception in respect of patents

As seen in section 4.1, there are various forms of the experimental use exception in the Member States. While Member States (such as France, Germany and the UK) that share the same form of the exception have interpreted it in broadly the same manner, there is sufficient scope in the other forms of the exceptions to believe that conflicting decisions are possible or even likely. Indeed, the German courts in *Clinical Trials I* and *Clinical Trials II* have distinguished Dutch case law on the basis of its different experimental use exception.

For example, in Belgium it is expressly permitted to carry out acts for research purposes both on and with the subject matter of the invention. Equally, and by way of example, the exceptions in Cyprus, Italy, Malta, Portugal and Slovak Republic do not contain any express second limb, which leaves the exception open to interpretation that both experimenting on and with the patented subject matter is permissible. Latvia's exception may also permit experimenting on and with the patented subject matter.



Therefore, any *de facto* harmonisation initially brought about by the Community Patent Convention is now of limited effect and it is certainly no longer correct to say that Member States take the same approach to the experimental use exception in relation to patents.

Similarly the position appears to be the same in respect of Member States that recognise utility models save that certain Member States do not apply an experimental use exception to both patents and utility models, which could afford greater protection to utility models.

There are various other approaches which have been considered in Europe and internationally.

In Australia, which does not have a statutory experimental use exception, the Advisory Council on Intellectual Property (ACIP) has reported on the issue of patents and experimental use<sup>293</sup>. Whilst acknowledging that there is some degree of harmony in Europe, ACIP found that the *"wording [in Europe] has been interpreted in significantly different ways in different jurisdictions in the pharmaceutical field, particularly regarding clinical trials. This degree of uncertainty is unacceptable, and so other options must be considered"*.<sup>294</sup>

Various options were considered by ACIP including:

- A distinction between basic research and applied research. ACIP concurred with the majority view that the distinction between the two types of research has become too blurred to be a useful basis for an exception<sup>295</sup>.
- Restricting the scope of protection of a patent to exclude experimental use. Whilst ACIP had a positive disposition towards this approach, it rejected it on the basis that users would have too little guidance and the courts too much freedom in interpreting the change<sup>296</sup>.
- Fair Experimentation. The purpose of this option is to draw on the fair dealing exceptions under copyright law.
- Exclusive/Inclusive permitted purposes.

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<sup>293</sup> Advisory Council on Intellectual Property Patents and Experimental Use, October 2005.

<sup>294</sup> *Ibid.* at p 2

<sup>295</sup> *Ibid.* at p 19

<sup>296</sup> *Ibid.* at p 51

- Experimenting "on" the subject matter of the invention with inclusive permitted purposes.
- Statutory Licences. The exception considered by ACIP in this regard was limited to statutory licensing for public, non-commercial experimental purposes upon payment of royalties to the patent holder. This was rejected by ACIP on the basis that it would be only a partial solution at best, be very complex and carry too great a risk of failure<sup>297</sup>.

Of the various options considered by ACIP, it considered the two options of 'fair experimentation' and 'experiments on the invention' to be the most viable. In the end, the preferred form of exception adopted by ACIP borrows from the European approach under the Community Patent Convention:

*The rights of a patentee are not infringed by acts done for experimental purposes relating to the subject matter of the invention that do not unreasonably conflict with the normal exploitation of a patent.*

*Acts done for experimental purposes relating to the subject matter of the invention include:*

- *determining how the inventions works;*
- *determining the scope of the invention;*
- *determining the validity of the claims;*
- *seeking an improvement to the invention.*<sup>298</sup>

In the UK, the Gowers Review of Intellectual Property recommended the amendment of section 60(5) of the Patents Act 1977 (UK) to clarify the research exception to facilitate experimentation, innovation and education<sup>299</sup>. The Review considered the Swiss research exception to be a good example of a clearer exception. It added that clarifying the research exception along Swiss lines would, in its view, foster research without damaging the interests of right holders<sup>300</sup>.

The text of the relevant exception in Switzerland reads as follows:

(...)

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<sup>297</sup> *Ibid.* at page 63

<sup>298</sup> *Ibid.* at page 3

<sup>299</sup> At page 6

<sup>300</sup> At page 47

*(b) to acts undertaken for experimental and research purposes in order to obtain knowledge about the object of the invention, including its possible utilities; in particular all scientific research concerning the object of the invention is permitted;*

*(c) acts necessary to obtain a marketing authorisation for a medicament according to the provisions of the law of 15 December 2000 on therapeutic products.*

*(d) to the use of the invention for the purpose of teaching in teaching establishments.*

*(e) to the use of biological material for the purposes of selection or the discovery and development of a plant variety.*

*(f) to biological material, obtained in the field of agriculture which was due to change or which was technically unavoidable.<sup>301</sup>*

### 7.1.2. Borderline Cases: Research Tools and Clinical Trials

#### *a. Research Tools*

There is no definition of research tools, though generally it is accepted that they include reagents, targets, test kits etc. used by researchers in their work<sup>302</sup>.

As noted earlier in this chapter, there are (at least) two distinct sides to the use of research tools in research.

Firstly, from the (patent) owner's perspective the research tool is a valuable end product and can itself be the result of many years of research and investment. The legitimate expectation of the owner is that the research tool should be entitled to the same protection as other patentable inventions and be capable of generating income for the owner and is protected by Article 27 TRIPS.

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<sup>301</sup> Article 9 quoted at page 46

<sup>302</sup> In the Report of the NIH Working Group on Research Tools June 4 1998 the term is used in the broadest sense "*to embrace the full range of resources that scientists use in the laboratory.... the term may thus include cell lines, monoclonal antibodies, reagents, animal models, growth factors, combinatorial chemistry libraries, drugs and drug targets, clones and cloning tools (such as PCR), methods, laboratory equipment and machines, databases and computer software*" (page 3).

Secondly, from the researcher or PRO perspective, there can be many issues involved in licensing the use of the research tools, which can include the basic tools for carrying out certain research. These issues include an increased administrative burden, legal costs, royalty costs, delays in research and restrictions on IP in research results using the research tools in licensing terms and dissemination of the research results. The issues have also arisen in the specific context of gene patents<sup>303</sup>. The potential impact of patented research tools has been described by Dreyfuss as follows:

*.... they are of crucial importance to researchers, and as such, they have enormous power... They cannot be invented around: for instance, any scientist who wants to study the genetics of breast cancer needs to utilize the BRCA 1 test*<sup>304</sup>.

In response to these issues, both the NIH in the United States and the CSTP in Japan have issued guidelines in response to the concerns raised regarding access to research tools. The NIH Working Group recommendations include:

- the free dissemination of research tools without legal agreements whenever possible, especially when the prospect of commercial gain is remote;
- the promotion by the NIH of the use of the Uniform Biological Materials Transfer Agreement and other standard form agreements; and
- the development and dissemination of guidelines for recipients of NIH funds on reasonable licensing terms and the importing and exporting of research tools<sup>305</sup>.

As seen in section 6.2, the CSTP in Japan has recommended that the holders of life science research tool patents should grant requests for non-exclusive licences for

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<sup>303</sup> See OECD Genetic Inventions, Intellectual Property Rights and Licensing Practices 2002. The Report concluded, in respect of research exceptions, that: "... *uncertainty remains regarding the scope of research exceptions. In most countries, research exceptions are not well defined. Some believe it is necessary to extend research exceptions to include, for example, clinical use exceptions for diagnostic genetic testing with a research purpose. However, defining the parameters of this broader research exception has proved very challenging. For this reason, some experts advocate maintaining the present level of uncertainty to avoid creating more confusion. Nevertheless, a study of research exception use and litigation may prove useful in determining the extent to which the current system might need attention.*"

<sup>304</sup> DREYFUSS, "Protecting the public domain of science: Has the time for an experimental use defense arrived?", 46 Arizona Law Review 457 quoted in OECD (2006) *Research Use of Patented Knowledge: A Review STI Working Paper 2006/2*

<sup>305</sup> *Ibid.* at page 20

basic and pre-commercial (*kigouka mae*) research purposes on reasonable terms. If the government is the funding source of a research tool arising from university research, then the research tool should be licensed free of charge to other universities<sup>306</sup>.

It appears that Switzerland has taken a step further and introduced compulsory licensing provisions for research tools and diagnostic techniques<sup>307</sup>.

### *b. Clinical Trials*

The evidence suggests that some convergence on the interpretation of the experimental use exception has come about in Europe but that there is scope for conflicting decisions both in Member States that have the same and Member States that have different forms of the exception.

In terms of case law in Europe, it is the only aspect of the experimental use exception that appears to have attracted relatively significant amounts of litigation which, at least to some degree, suggests that the issue is not yet settled.

### **7.1.3. Application of the Experimental Use Exception in respect of other IPR**

The experimental use exception has been implemented in different forms in respect of other IP rights. To a degree, this comes about from the nature of the other forms of IP rights.

For example and as noted earlier, it is not possible in any meaningful way to experiment on or with a copyright work or a database (*sui generis* right)<sup>308</sup>. Perhaps one exception to this is the making of an object in three dimensions of a work in two dimensions. In these cases, the main issues for researchers and PROs appear to be the ability to access these works and the right to re-use the information (by way of citation, quotation etc.). Another issue can be the ability to copy the works or make the works generally available within a PRO.

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<sup>306</sup> Council for Science and Technology Policy (2007) *Draft Principles for the smooth use of research tool patents in the life sciences*

<sup>307</sup> COOK, "A European Perspective as to the Extent to which Experimental Use, and certain other, Defences to Patent Infringement, apply to Differing Types of Research", pages 119-120.

<sup>308</sup> See *supra*, n. 53

As reported in section 5.4, most Member States except Denmark, Germany and Netherlands have reported an exception for use of copyright works for citation, quotation or as examples. In some cases, the right is limited to the works to which it applies and the purpose of the use but mostly the purpose can include scientific research. However, there does not appear to be uniformity on this issue and no particular pattern emerges.

Furthermore, while certain Member States have reported fair use exceptions in relation to research, the scope of these exceptions varies widely and appears to be limited. Fair use exceptions for copying for teaching or scientific purposes are limited and tend to be restricted to non-commercial research.

In the UK, the Gowers Review of Intellectual Property recommended that educational provisions should cover distance learning and interactive whiteboards by 2008 by amending the relevant sections of the Copyright Designs and Patents Act 1988 (UK).<sup>309</sup>

On the other hand, it could be possible to experiment on or with industrial designs. However, this issue has been harmonised at EU level although it is possible for industrial design protection to overlap with copyright law especially in the context of two dimensional drawings of a three dimensional design in which case the exception might not apply to the underlying copyright work.

Similarly, topography rights have also been harmonised which has brought Member State laws into substantial conformity.

In relation to plant breeders' rights, there are a number of discrepancies between the form of the exception across the EU. This is, in part, due to the membership of various Member States to different acts of UPOV. The more recent version (the 1991 Act) does contain an experimental use exception. Furthermore, the European Communities is UPOV. Therefore, harmonisation of this exception can be expected. However, the interaction between patent protection and plant breeders' right has raised some concerns which are mentioned below.

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<sup>309</sup> At page 48

#### 7.1.4. Plant Breeders' Rights

One discrete issue raised in several reports<sup>310</sup> in the United Kingdom and recently discussed by Cook<sup>311</sup> is the potential overlap between patents for gene sequences (brought about by the Biotechnology Directive) and the breeding of new varieties of plants. The concern is that the gene sequence patent could be enforced against breeders of new plant varieties even though the plant breeder is exempt under relevant plant breeders' legislation. Therefore, the suggestion is that patent systems should best have an equivalent exception in respect of plant breeding and this is case in at least France and Germany.<sup>312</sup> The impact of this issue is unclear and Strauss suggests that the issue "for the time being in Europe is predominantly not a practical but rather a virtual one, i.e. a prospective one"<sup>313</sup> but Strauss concludes that the issue should be addressed so as to leave no doubt on the issue.

The approaches taken by France, Germany and Switzerland in relation to this issue are useful.

## 7.2. Conclusions

### 7.2.1. Application of the experimental use exception in respect of patents

There are indications that the experimental use exception requires some level of harmonisation in the EU and some existing surveys express dissatisfaction with the

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<sup>310</sup> The Royal Society *Keeping Science Open: The Effects of Intellectual Property Policy on the Conduct of Science April 2003* and *A study by the Intellectual Property Institute (IPI) on behalf of the DTI Patents for Genetic Sequences: The Competitiveness of Current UK Law and Practice* May 2004

<sup>311</sup> COOK, "A European Perspective as to the Extent to which Experimental Use, and certain other, Defences to Patent Infringement, apply to Differing Types of Research", July 2006, *Intellectual Property Institute*, pages 112 - 116

<sup>312</sup> Article L 613-5-3 of the Intellectual Property Code (France): "Rights conferred by the Articles L. 613-2-2 and L. 613-2-3 shall not extend to the deeds performed in order to create or discover and develop other plant varieties" (195.83.177.9/upl/pdf/code\_35.pdf) and Article 11 of the Patent Law (Germany)

<sup>313</sup> J. STRAUSS, "Measures necessary for the balanced co-existence of patents and plant breeders' rights – A predominantly European view" — A lecture at the WIPO-UPOV Symposium on the Co-Existence of Patents and Plant Breeders' Rights in the promotion of Biotechnological Developments October 23 2002 page 3

current regime. However, it does not appear that viable alternatives have been proposed by dissatisfied parties.

Various options have been considered elsewhere and the consensus appears to acknowledge the Community Patent Convention model, with modification, as a sound basis for the exception.

The proposal made by ACIP does have the advantage of including a non-exclusive list of permitted acts. This approach could reasonably be adopted in the EU in relation to areas requiring clarification. However, the addition of the words "that do not unreasonably conflict with the normal exploitation of a patent" do not appear to add anything significant to some Member States' laws and reflects Article 30 TRIPS.

### 7.2.2. Borderline cases: research tools and clinical trials

#### *a. Research tools*

It does appear that the issues faced by researchers and PROs in licensing research tools are as extensive as might have been believed and may affect research in the EU. However, the actual impact of these issues on research in the EU is not demonstrably clear.

This coupled with the fact the patent rights in research tools and the need for the protection of the owner's legitimate expectation of a return on investment suggests that the impact of research tools should not be managed by changes to the patent system or the experimental use exception. Perhaps the most sensible approach in this case is for the European Commission to assist in the development of guidelines on the licensing of patented research tools in the private and public sector as has been done in the US and Japan.

#### *b. Clinical Trials*

From a review of the decisions of the courts of several Member States (France, Germany and UK) there is some certainty that clinical trials on a patented invention including clinical trials for the purposes of finding a new indication or for new methods of delivery fall within the exception in those countries that share the Community Patent Convention form of the exception.



It is less clear whether those clinical trials carried out for the purpose of regulatory approval fall within the exception in the UK, at least, although they have been exempted in Germany and France (including phase III clinical trials). With the implementation of the Bolar exception, this issue is likely to be less relevant for generic drug producers but for those Member States that did not introduce a wider exception to include new drug producers, this issue may remain live for some time.

It appears that for other Member States that have different forms of the experimental use exception there is ample scope for varying decisions bringing with them further uncertainty in the area.

However, in line with our conclusions above, varying the basis of the research exception or amending it to specifically include other rights may create greater uncertainty. Perfect legal certainty may not be achievable or warranted.

### 7.2.3. Application of the Experimental Use Exception in respect of other IPR

As for patents, the question of the use of other forms of IPR raises the issue of the balancing of strong IPR protection on the one hand and the rights of legitimate users including researchers and PROs on the other.

Across other IPR, the exception has arisen in the context of the legitimate uses of IPR of that type. As such, the exceptions do not necessarily contemplate a free use for the purposes of experimentation. For example, the long standing principle of fair dealing applies to copyright works and originates in the Berne Convention.

No issues have been raised in existing surveys regarding the differences in the form of exception for experimentation under other IPR *inter se* and the possibility of issues arising under other forms of IPR do not appear to have raised the same level of debate or controversy as the experimental use exception has done in respect of patents other than in connection with clearance royalties in respect of copyright works.

Equally, no specific issues have been raised regarding the different forms of exception for experimentation as they apply within each category of IPR.

Whilst from a legal perspective, differences in legal regimes throughout the Member States suggest that harmonisation should be considered, there does not appear at this point to be reports of sufficient uncertainty to merit this approach in the short term.

## 8. Recommendations

### Experimental use exception under patent law

- There are many approaches that may be taken to the experimental use exception in respect of patents. These approaches have various merits but would not remove all legal uncertainty or would necessarily provide a more balanced approach to patent rights and experimental use.

However, it does appear that any *de facto* harmonisation achieved by the Community Patent Convention is no longer the case and many Member States have different versions of the exception. In extreme cases, some Member States have no express exception (Austria) and in others the exception has been materially modified (Belgium).

As concluded above, there are indications that the experimental use exception in the EU requires harmonisation and there is sufficient scope to believe that conflicting decisions are possible or even likely. That said, an adverse impact on research in the EU does not appear to have been reported. Nevertheless, there remains a degree of legal uncertainty that can be anticipated to widen over time.

Therefore, the Community patent, if introduced, should contain an experimental use exception broadly in line with the Community Patent Convention. Any measure of harmonisation of patent laws in the EU should similarly contain such a provision so as to harmonise Member State laws on this point and consideration should be given to including a non-exhaustive list of permitted acts.

### Research Tools

- In relation to patented research tools, guidelines should be considered and prepared by the European Commission in relation to EU-funded projects and the same guidelines should be adopted by the Member States in respect of the licensing of patented research tools. However, further evidence of an adverse impact is required before mandatory licensing of patented research tools should be considered (as introduced in Switzerland).

### Clinical Trials

- For the moment and in light of the implementation of the regulatory review exception into European law, there does not appear to be an immediate requirement to clarify the experimental use exception in patent law by legislative amendment in respect of clinical trials. This situation could change with future

judgments of the courts of the Member States or better reporting of existing decisions.

### Experimental use exception under other IP Rights

- There does appear to be the potential for conflict between gene sequence patenting and plant breeders' rights but as yet this issue does not appear to have had an impact in the EU. However, we recommend that an appropriate exception is included in respect of the Community Patent and in any harmonisation measures.

As regards other IPR, a legal review suggests that the fragmentation in the approach to the experimental use exception could impede research, particularly cross-border research. Consideration should be given to introducing harmonisation measures to remove this fragmentation. If steps are taken in the EU to set out specific rules in respect of IPR generated from publicly-funded research, then harmonisation of these rules (and exceptions) in respect of fair dealing etc. should be considered to avoid conflicts between Member States' laws.

# Chapter 5

## Publishing v. patenting

"It is often argued that patents hamper the diffusion of technical/scientific knowledge, whereas journal publication promotes it considerably. However, while patent applications are freely accessible after eighteen months, many journal publications are strongly protected by copyright and are accessible only at libraries or (electronically) at those organisations which have taken (paying) subscriptions. In most cases, the authors of the publications have to assign all rights to the publisher, with the consequence that they can no longer reproduce their own papers. Next to these two classical systems, a new system of "open publishing" (mainly relying on Internet-based tools) is emerging.

This chapter therefore assesses the impact of these various systems on the diffusion of technical/scientific knowledge."

### 1. Structure of this chapter

In section 2 of this chapter, we first consider the legal nature of both copyright (publishing) and patent protection, and compare both legal concepts.

In section 3, we give an overview of the traditional dichotomy between publishing and patenting, as tools for disseminating knowledge. Next, we describe why this traditional dichotomy no longer holds true.

In section 4, we make a comparison between publishing and patenting in the "new" dichotomy, taking into account the changes described in section 3. We consider the advantages and disadvantages, as well as the current bottlenecks.

It should be noted that, unlike the topics covered in the other chapters in this report, the legal comparison of countries is of secondary importance for this topic. While case law and legislation in the field of patenting and copyright are not yet fully harmonised and several conflicts exist between the EU Member States, almost all basic legal provisions of patenting and copyright are harmonised. Since the discussion of the dichotomy between publishing and patenting generally only involves a discussion of the basic legal provisions, the lack of full harmonisation is less pronounced for the purposes of this chapter.

## 2. Legal analysis

### 2.1. Overview

While the publishing of scientific articles and the patenting of inventions both lead to the dissemination of scientific knowledge, they are very different legal concepts. In this section 2, we provide an overview of the legal concepts underlying both publishing (copyright legislation) and patenting (patent legislation)<sup>314</sup>, taking into account the differences between the Member States that were identified in our national surveys. In view of the specific scope of this report, the focus is narrowed down to the legal protection of scientific research.

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<sup>314</sup> While research data is generally not protected by IPR such as copyright, research data can be protected by European Directive 96/9/EC (legal protection of databases). In this context, there can be issues related to the impact of the database rights on the free accessibility of scientific research data. For more information, see the evaluation report of the Directive, available at [ec.europa.eu/internal\\_market/copyright/docs/databases/evaluation\\_report\\_en.pdf](http://ec.europa.eu/internal_market/copyright/docs/databases/evaluation_report_en.pdf)

In sections 2.2 and 2.3, the main characteristics of the legal concepts of copyright and patenting are described. Next, in section 2.4, the legal characteristics of copyright and patenting are compared to each other.

## 2.2. Copyright

**Main legal instruments** – The Berne Convention (1886) established a union of copyright protection among member countries. All EU Member States are signatories to this Convention, so that most basic copyright provisions are harmonised across the EU. Further, almost all<sup>315</sup> substantive provisions of the Berne Convention are incorporated into the TRIPS agreement (1994), administered by the World Trade Organization. Most basic copyright provisions therefore also apply in countries outside the European Union.

**General** – When an author writes a scientific article describing the results of his research, his work will generally be protected by copyright. This copyright protection exists automatically, with the only condition being that the scientific article is considered "original". Unlike the formal requirements of the patenting process, a work must not be deposited or registered in any public registry in order to gain protection.

**Originality** – The meaning of the criterion of "originality" is not defined in the Berne Convention, the TRIPS Agreement or national legislation. It broadly refers to a required level of creativity of a work, which the legal doctrine of some Member States describes as requiring that a work expresses the "*personality of its creator*". There are no precise criteria to determine whether a particular document will be deemed original: such assessment depends on the type of work considered, the circumstances, the legal doctrine of a Member State and the case law of a Member State. Ultimately, this assessment will be made by a judge<sup>316</sup>. Courts will, however, accept copyright protection for most scientific articles, since even a small amount of creative input is generally sufficient to obtain copyright protection, and the required level of originality has been lowered over time<sup>317</sup>.

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<sup>315</sup> The protection of moral rights, as described in article 6*bis* of the Berne Convention, is not obligatory for TRIPS signatories.

<sup>316</sup> J. STERLING, *World Copyright Law*, 1998, 7.06

<sup>317</sup> P.J. NORDELL, "The Notion of Originality – Redundant or not?", *ALAI*, 2000, *Copyright, Related Rights and Media Convergence in the Digital Context*

**Expressed form** – With respect to scientific articles, it is more important to stress that the protection offered by copyright only extends to the expression as such – *i.e.*, the language and images in the scientific article – and not to the ideas underlying the scientific article. Indeed, article 9.2 of the TRIPS explicitly holds that “*copyright protection shall extend to expressions and not to ideas, procedures, methods of operation or mathematical concepts as such*”. Unsurprisingly, all National Correspondents confirmed that copyright protection was limited to expressions in their country<sup>318</sup>.

Hence, when a researcher describes in detail his new invention in a scientific article, the article itself is protected by copyright, so that third parties cannot re-use or copy the text or images of the scientific article (although limited exceptions apply). The protection offered by copyright does not, however, prevent a third party from re-using the invention itself, or the ideas expressed in the scientific article, as copyright only protects expressions. If a researcher wishes to protect the invention itself or the ideas associated with it, he should apply for a patent or utility model.

**National deposit** – The National Correspondents of most Member States<sup>319</sup>, as well as the National Correspondent of the United States, have indicated that their country requires publishers to deposit one or more<sup>320</sup> copies of all works printed and/or published in the country at one or more national institutions<sup>321</sup>. This requirement is generally very broad, and usually encompasses all works published in the country, or published abroad but distributed within the country, whether for sale or freely avail-

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<sup>318</sup> There is, however, some controversy in some Member States regarding copyright infringement for three-dimensional reuse of the ideas and drawings expressed in two-dimensional drawings.

<sup>319</sup> Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, the United Kingdom

<sup>320</sup> For example, Portuguese legislation requires a deposit of fourteen copies.

<sup>321</sup> In some countries, such as Poland, the deposit requirement also extends to movies.

able, often even including electronic publications<sup>322</sup>. In some countries, only limited exceptions apply<sup>323</sup>.

The National Correspondent of the United States noted that the 1976 US Copyright Act expressly states that the deposit requirement is not a condition for copyright protection<sup>324</sup>. However, registration with the United States Copyright Office is still necessary to obtain statutory damages in case of infringement.

The national deposit obligation does not affect copyright protection, so that no IP consequences of the failure apply<sup>325</sup>. However, fines may be imposed in some countries<sup>326</sup>.

**Copyright components** – Copyright consists of two types of rights: "*economic rights*" and "*moral rights*". Economic rights enable an author to gain revenue from the exploitation of his work, such as the exclusive right to reproduce the work and to communicate it to the public. Moral rights, on the other hand, aim to protect a creator's personality vis-à-vis his work, such as the right to have his name on the work, the right to object to the distortion, mutilation or modification of the work, and the right to object to derogatory actions which could be prejudicial to the author's honour or reputation.

While economic rights can be transferred wholly or partially to another person (such as a publisher), most Member States<sup>327</sup> do not allow moral rights to be as-

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<sup>322</sup> A good illustration is the list of items that is exempt from the legal deposit requirement in Portugal: printed works without value as published literature, such as business cards, letters, envelopes and letterheads, commercial invoices, financial figures, tags, labels and calendars, etc. See

[www.bnportugal.pt/index.php?option=com\\_content&view=article&id=153&Itemid=190](http://www.bnportugal.pt/index.php?option=com_content&view=article&id=153&Itemid=190)

<sup>323</sup> E.g., for Poland: copyrighted works intended for personal use, governmental application forms, securities, ticket forms, labels, packages; for Cyprus: publications composed solely from pricelists, sales catalogue, annual reports, commercial guidelines or commercial advertisements.

<sup>324</sup> The 1909 US Copyright Act stated that the failure to comply with the deposit would forfeit copyright.

<sup>325</sup> For example, in the UK, the only consequence of the failure to comply with the deposit requirement, is that the affected library can request a copy (or monetary equivalent) via a legal procedure: see section 3 of the Legal Deposit Libraries Act 2003. As another example, in Greece the failure to deposit may affect public funding.

<sup>326</sup> For example, Denmark, the Czech Republic and Poland



signed or transferred. Even so, some Member States (such as Sweden<sup>328</sup>, the United Kingdom and Ireland) allow moral rights to be waived by an author. Furthermore, Denmark was reported to allow transfers of moral rights that are narrow and specific in scope<sup>329</sup>, while Estonian case law and legal doctrine was reported to allow licensing of moral rights.

**Publishing contracts** – When a researcher wants to publish his scientific article, he will typically contact a publisher and enter into an agreement (publishing contract). The publisher then receives the right to publish the work in a certain form, during a certain period, with or without remuneration for the author.

From a legal point of view, the author can either **assign** (transfer) his economic rights, or grant a right of use (**licence**) to the publisher. Assignments and licences must be clearly distinguished. Upon assignment (transfer) of the economic rights, the author loses his economic rights, although he may retain his moral rights. Conversely, in the case of a licence grant, the author retains his economic rights, so that he can provide licence grants to an unlimited number of other parties. Even so, since the licence grant can be modulated in a contract, an author can agree to provide an *exclusive* licence to the publisher, which forfeits the author's right to grant licences to other parties. An exclusive licence can therefore be very similar to an assignment.

Scientific publishers typically require an assignment or exclusive licence grant from authors. For example, the following two clauses were taken from existing publishing contracts with major scientific publishers:

*"In consideration of the journal, taking action in reviewing and editing my (our) submission, the author(s) undersigned hereby transfers, assigns, or otherwise conveys all copyright ownership to [publisher's name] in the event that such work is published in the journal. Such conveyance covers any product, whether print or electronic, that may derive from the published journal."*

*"The Author hereby assigns to [publisher's name] the copyright to the Contribution named above whereby the [publisher] shall have the exclusive right to pub-*

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<sup>327</sup> Our Cypriot national correspondents indicated that Cypriot law is highly unclear in this regard.

<sup>328</sup> only in relation to uses which are limited as to their character and scope

<sup>329</sup> subject to a very restrictive interpretation, and in most instances requiring express contractual clauses

*lish the said Contribution, and translations of it wholly or in part, in all languages and all media throughout the World during the full term of copyright and all renewals and extensions thereof. These rights include without limitation mechanical, electronic and visual reproduction; electronic storage and retrieval; and all other forms of electronic publication or any other types of publication including all subsidiary rights.*

*The Author retains the right to republish the Contribution in any printed collection consisting solely of the Author's own Works without charge and subject only to notifying the [publisher] of the intent to do so and to ensuring that the publication by the [publisher] is properly credited and that the relevant copyright notice is repeated verbatim."*

Again, it must be stressed that even in the case of assignment or exclusive licence grants, the publisher cannot prevent the researcher (or other researchers) from reusing the underlying scientific knowledge of articles, since the protection accorded by copyright does not extend to the ideas underlying the scientific article.

**Written contract** – While it is in any case recommended to use written agreements for all licence agreements in order to avoid difficulties to prove the existence and content of the agreement, the copyright legislation of some Member States goes further and explicitly requires some copyright contracts to be in writing, as illustrated by the following examples:

- In Greece, France, the Netherlands, Portugal, Slovak Republic and Spain, all assignments of copyright and all copyright licence grants must be in writing. Non-written agreements will be either void or not enforceable.
- In Estonia, copyright contracts should be in writing, with the exception of the granting of a non-exclusive licence concerning contracts for publishing works in periodical publications. Similarly, in Slovenia, written agreements are not required for the publication of articles, drawings or notes in newspapers, magazines and other periodicals.
- In Ireland, it is not mandatory to have licences in writing, but if a party wishes to benefit from certain provisions of the relevant copyright law related to exclusive licences, its exclusive licence must be in writing.

### 2.3. Patenting

**Main legal instruments** – The Paris Convention for the Protection of Industrial Property, initially agreed in 1883, sets out some basic rules relating to patents, and guarantees that each state treats nationals of other states similarly to its own nationals.

In 1970, the Patent Co-operation Treaty (PCT) was agreed, which allows an applicant to institute patent applications in numerous countries by a single procedure, although it does not provide an "international patent" as such, since in the end each national<sup>330</sup> office assigns a separate patent to the applicant. Similarly, the European Patent Convention (1973) installs a single procedure to obtain a bundle of separate national patents, each subject to the national laws of each European Member State.

Despite several attempts, no unitary European or international patent exists to date, so that patent legislation remains a national issue. Even so, significant harmonisation exists across European Member States in terms of patentability requirements, due to the influence of the European Patent Convention. Some differences remain, particularly with respect to the interpretation of legal terms.

**Overview** – A patent is a set of exclusive rights granted by a state for a limited period of time (typically twenty years) in exchange for a disclosure of an invention. In return for the exclusive rights, the inventor agrees to the publication of the details of his invention, usually after a period of eighteen months. During the period of protection, the patent owner has the right to decide who may use his patented invention.

The underlying philosophy is that this publication will then allow third parties to improve the patented invention or invent alternative solutions, thereby advancing the state of the art and thus benefiting society. The patent system is thus a system that must strike a balance between granting rights (and thus incentives) to an inventor, and leaving enough scope for positive benefits for the society<sup>331</sup>.

**Requirements** – According to article 52 of the European Patent Convention, in order to be patentable, each invention must simultaneously meet the three criteria of *novelty*, *capability of industrial application* and *non-obviousness*.

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<sup>330</sup> or regional office, such as the European Patent Office (EPO)

<sup>331</sup> B. VERSPAGEN, "University research, IPR and European innovation systems", *Journal of Economic Surveys*, 2006, Vol. 20, No. 4

- The requirement of **novelty** is fulfilled if the invention is not part of the prior state-of-the-art. European Member States follow the concept of absolute novelty, which means that the invention may not have been made public in any way, anywhere in the world, before the filing date of the patent<sup>332</sup>. Hence, if a researcher announces the results of his research at a scientific congress anywhere in the world, the possibility to obtain a patent for the described invention will be forfeited in the EU.

As will be discussed below in section 4.1.2, two limited exceptions (abuse and international exhibitions) exist in all European Member States. In addition, Estonia and Romania provide a so-called "*general grace period*", whereby during a limited period of time the possibility to apply for a patent will not be forfeited despite that the invention has been made public.

- Second, in order to be patentable, an invention must be **capable of industrial application**, which means that the invention has a potential for commercial application.

The "industrial application" requirement is one of the factors why universities, which generally focus on basic research without practical applications, were traditionally unable to patent their knowledge.

- Third, in order to be patentable, an invention must also represent an **inventive step** (non-obviousness), which means that a skilled person would not consider the invention to be obvious. For the purposes of this chapter, the inventive step requirement will not be further discussed.

**Procedure and publication** – Patents must be formally assigned to an applicant using a specific procedure. For the purposes of this chapter, it is important to note that the application will be published as soon as possible after the expiry of a period of eighteen months after the filing date (or priority date, when priority for the patent has been claimed)<sup>333</sup>, irrespective of the state of the procedure. At the request of the applicant, the application may be published before the expiry of the eighteen month period.

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<sup>332</sup> The national correspondent for Austria indicated an exception with regard to substances or compositions for use in a treatment of the human or animal body by surgery or therapy and diagnostic methods, provided that the use for these methods is not state of the art.

<sup>333</sup> Article 93 of the European Patent Convention

The publication of patents is a necessary element in the trade-off between the exclusivity awarded to the inventor and the benefits to society, as this disclosure enables third parties to become aware of the invention, and also enables further improvement of the invention. It is thereby required that the description of the invention discloses details enabling an expert skilled in the art to reproduce the invention.

The national patent bureaus of most Member States publish patent applications free of charge on their website. Also, rapid access to a large amount of data is now possible by way of external databases, such as esp@cenet ([www.espacenet.com](http://www.espacenet.com)), available to everyone.

**Experimental use exception** – In the context of the exclusive rights of the patent owner, it is important to point out that there is an exception for experimental use of patented inventions (sometimes also called the "*research exception*"<sup>334</sup>). This exception is a defence to patent infringement actions, by permitting third parties to use a patented invention for experimental purposes without the consent of the right holder. This way, the negative effects of patent protection in particular and the possibility that the scope of protection granted by patents may act to stifle innovation or research, are mitigated. Nevertheless, the experimental use exception differs among European Member States, which may cause legal problems for researchers, as further described in chapter 4 of this report.

## 2.4. Comparison of legal aspects

**Creation** – While copyright protection is granted automatically for scientific publications that meet the originality criterion, patent protection will only be awarded by initiating a lengthy patent procedure, which generally takes between 21 to 36 months.

**Requirements** – The single requirement for a scientific article to be protected by copyright is the originality of the article. Since the barrier for courts to accept the originality of work is rather low, copyright protection is accorded semi-automatically. Patents, however, need to simultaneously meet the three requirements of novelty, industrial application and non-obviousness. Even after being granted, patents may be invalidated in court when one of these requirements has

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<sup>334</sup> Further discussed in chapter 4 of this report

not been met. Conversely, the risk that copyright would be rejected by a court is much lower.

**Cost for the researcher** – As copyright protection is granted automatically, no costs are incurred by the author to gain protection. On the contrary, patent protection involves both a set-up fee and an annual maintenance cost, which can be quite significant<sup>335</sup>.

**Cost for the reader** – Scientific articles protected by copyright cannot be copied without the permission of the copyright owner (usually the publisher). Third parties who want to read a scientific article, need to subscribe to the journal or periodical. The cost of journals or periodicals can be considerable, as outlined below (section 4.5).

Patent specifications, on the other hand, can be inspected for free, or for a small fee (generally < 20 EUR), at patent bureaux. In addition, most patent bureaux offer free access to patent specifications through their website, or through external databases such as esp@cenet.

**Duration of the protection** – Article 7 of the Berne Convention requires copyright protection for works such as scientific articles to be provided at least for the author's life and fifty years thereafter. The European Duration Directive<sup>336</sup> extends the minimum of fifty years to a minimum of seventy years protection after the death of the author. In some Member States, the term for the protection of moral rights differs from the protection term for economic rights.

Following the TRIPS agreement, patent protection is granted for twenty years, upon payment of the annual renewal fees. For medicinal products such as drugs and plant protection drugs, a supplementary protection can be granted for five years in the form of a so-called "*supplementary protection certificate*" (SPC).

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<sup>335</sup> See the European Patent Office's study on the cost of patenting ([www.european-patent-office.org/epo/new/cost\\_analysis\\_2005\\_study\\_en.pdf](http://www.european-patent-office.org/epo/new/cost_analysis_2005_study_en.pdf)). The total cost of obtaining a standard Euro-direct patent in 2003 was EUR 30,530 (pages 97 and 117).

<sup>336</sup> Council Directive 93/98/EEC of 29 October 1993 harmonising the term of protection of copyright and certain related rights, Official Journal L 290, 24/11/1993 p. 0009 - 0013. Article 5 of this Directive holds that Member States may protect critical and scientific publications of works which have come into the public domain. The maximum term of protection of such rights shall be thirty years from the time when the publication was first lawfully published.

**Territory of protection** – The Berne Convention requires each member country to extend the same treatment to the works of nationals of other Berne Union countries as are enjoyed by its own nationals. Similarly, the TRIPS Agreement provides for international minimum standards of protection. In practice, this means that copyright protection is generally worldwide. On the contrary, patent protection only applies to those countries for which the patent was filed.

**Protected rights** – The protection offered by copyright only extends to the expression as such, and not to the ideas underlying the article. While copyright protection prevents a scientific article from being copied without the permission of the copyright holder, copyright does not prevent third parties from reusing and/or improving the invention described in the scientific article. Patents, on the other hand, protect the invention described in the patent application. Without permission from the patent owner, a third party cannot use the patented invention.

### 3. Analysis in the traditional setup

#### 3.1. The traditional view on research

The dichotomy between publishing and patenting is strongly reflected in – and historically linked with – the dichotomy between the research performed by universities and the research performed by industry. This "traditional view" on research<sup>337</sup> is explained in this section 3.1. Subsequently, in section 3.2, we explain why the traditional view no longer holds true.

While, in the traditional view, universities were said to mainly perform basic ("*fundamental*") research and to openly *publish* the research results as soon as they became available, industry was said to perform applied research, which was commercialised and protected by *patents* (or held secret). The public subsidisation of basic research was usually justified by the lack of direct commercial applicability of its results<sup>338</sup>.

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<sup>337</sup> The reader should, of course, bear in mind that this traditional view generalises trends and views, and over-simplifies a more complex reality.

<sup>338</sup> G. BUENSTORF, *Commercializing Basic Science as a Competitor or Complement of Academic Accomplishment? The Case of Max Planck Directors*, 2006, page 1

In the traditional view, the publication of research results was the preferred tool for academic research, as publications are instruments of both validation and recognition by the scientific community. Patenting of research results (or keeping them secret) was more appropriate for industry research.

The match between, on the one hand, academic research & publications and, on the other hand, industrial research & patents, also emanates from the other qualitative differences between universities and industry, such as the motivations for performing research, the types of research performed and the manner of research<sup>339</sup>:

- **Motivations** – The *raison d'être* of commercial companies is to increase shareholder value. In this market-driven commercial context, research should be regarded as one of the many activities performed to improve shareholder value, next to activities such as marketing, sales and after-sales.

Universities, on the other hand, were traditionally funded by governments and were not market-driven. Traditional academic research was driven by inquiry and the desire to get recognition from fellow scientists and the opportunity for open discussions between colleagues<sup>340</sup>:

*"Resources were concentrated on work at the pure, fundamental end of the spectrum, a certain disdain being shown towards mere practical applications. In line with this attitude, universities showed no undue concern for the commercial potential of academic ideas."*<sup>341</sup>

Applied to the publishing vs. patenting question, patents provide a temporary monopoly on the use of inventions, and provide competitive advantages and licensing income. Patents thus match the requirements of increasing shareholder value. On the other hand, publications in scientific journals match the requirements of universities, as publications in scientific journals do not restrict reuse of the research results and improvement of the invention.

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<sup>339</sup> E. J. IVERSEN, A. KALOUDIS, The changing positions of patenting and publishing in basic and applied modes of organised research, *STEP-Group Report R06-1999*, page 1

<sup>340</sup> R. MERTON, The Matthew Effect in Science, *Science*, 159(3810): 56-63, January 5, 1968; page 56; B. VAN LOOY, J. CALLAERT and K. DEBACKERE, *Publication and patent behaviour of academic researchers: conflicting, reinforcing or merely co-existing*, available at SSRN: [ssrn.com/abstract=874905](http://ssrn.com/abstract=874905)

<sup>341</sup> W.R. CORNISH, 1991, as cited in M-C JANSSENS, *Uitvindingen in dienstverband, met bijzondere aandacht voor uitvindingen aan universiteiten*, Bruylant, Brussels, 1996, page 367



- **Types of research performed** – Traditionally, academic research was said to focus on basic research, *i.e.* questions of fundamental scientific interest. Basic research has been said by one commentator to proceed with little or no awareness of, much less interest in, potential practical applications<sup>342</sup>. Industry instead focuses on applied research, with questions of usefulness and commercial application.

Applied to the publishing vs. patenting question, it is clear that traditional academic research does not meet the requirements of patentability, as basic research does not generally lead to inventions that are capable of industrial application.

- **Manner of research** – Academic research is performed in an open manner, promoting so-called "*open science*" whereby cumulative innovation is reached by "*standing on the shoulders of giants*" and by cross-fertilizing each other's perspectives by means of data sharing and discussion of results<sup>343</sup>. Openness is necessary for achieving the goals of science and for enabling society to benefit from the results of research, and plays a key role in confirmation and collaboration of research results<sup>344</sup>. Monopolising the fruits of research simply has gone against the academic culture<sup>345</sup>. Universities have traditionally stressed the role of scientific publication and education as the means of distributing scientific and technological knowledge<sup>346</sup>.

On the other hand, traditional industrial research is not concerned with the impact on follow-on research, but focuses on the degree to which the value of knowledge can be appropriated through commercialisation of technology and exclusion of others<sup>347</sup>. Secrecy rules in industrial research: companies patent sci-

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<sup>342</sup> R.R. NELSON, "Reflections on 'The Simple Economics of Basic Scientific Research': Looking Back and Looking Forwards", *LEM Working Paper Series*, 2006, page 9

<sup>343</sup> B. VERSPAGEN, 2006, *o.c.*

<sup>344</sup> While scientific openness enjoys an esteemed place in academic science, it is not an absolute value and was frequently contested throughout history. See D.B. RESNIK, "Openness versus Secrecy in Scientific Research", *Episteme*, 2006; 2: pages 135-47

<sup>345</sup> G. BUENSTORF, *o.c.*, page 1

<sup>346</sup> A. GEUNA and L. NESTA, University patenting and its effect on academic research: The emerging European evidence, *Research Policy* 35, 2006, page 790

<sup>347</sup> F. MURRAY and S. STERN, *Do formal IPR hinder the free flow of scientific knowledge? An empirical test of the anti-commons hypothesis*, NBER Working Paper No. 11465, 2005, pages 6-7; K. ARROW, "Economic Welfare and the Allocation of Resources for Invention.", in *The Rate and Direction of Inventive Activity*, edited by Richard R. NELSON, 609-

entific research or keep them as trade secrets, and – in the traditional view – generally share data and results only to meet legal requirements or achieve financial goals<sup>348</sup>.

Applied to the publishing vs. patenting question, it is once again evident that traditional academic research does not sit neatly with the requirements for patentability. For instance, the open dissemination of knowledge will forfeit the novelty of the invention, and the temporary monopoly granted to patent holders is generally not compatible with the "cumulative innovation" approach dictated by research.

The following table summarises the traditional view on the dichotomies of publishing & patenting, universities & industry, and science & technology.

	Publishing	Patenting
Performed by	University	Industry
Description	Science	Technology
Motivation	Improve science	Increase shareholder value
Types of research	Basic / fundamental	Applied
Manner of research	Open	Secret

The central question to be answered in this chapter (whether publishing or patenting is most suitable to disseminate knowledge) used to be easy to answer in the traditional dichotomy – or rather was not pertinent, because publishing and patenting served different audiences. Publications were a perfect match for university research, as they allow fast and open diffusion of research results. Patenting, on the other hand, was the tool of choice for companies that wanted to protect their research investments. Although both tools disseminate knowledge, neither tool was appropriate for its non-traditional target audience. While barriers existed for both tools<sup>349</sup>, they were less pronounced and were effectively hidden in the larger argu-

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25. Princeton, NJ: Princeton University Press, 1962; R. LEVIN, A. KLEVORICK, R. NELSON, and S. WINTER. "Appropriating the returns from industrial R&D", *Brookings Papers Econom. Activity* 3, (1987), 783-831; R.R. NELSON, The Simple Economics of Basic Scientific Research, *Journal of Political Economy* 67(3), 1959, page 297-306.

<sup>348</sup> D.B RESNIK, 2006, *o.c.*

<sup>349</sup> See section 3.3 below

ment that publishing and patenting were clearly different tools for different audiences.

### 3.2. Changes in the traditional dichotomy

In the last twenty to thirty years, the traditional dichotomy has been diluted. While university patenting is not a new phenomenon<sup>350</sup>, there is a significant rise in the number of patents that are now being acquired by academics and their PROs/HEIs. At the same time, companies are also publishing in journals. In addition, universities and companies are closely cooperating in multiple areas and ways. It is widely acknowledged that firms are now drawing on the scientific and technical expertise of universities<sup>351</sup>. This has strongly affected the publishing vs. patenting discussion<sup>352</sup>.

In what follows, the most important factors that have affected the traditional dichotomy, are further discussed.

**Changes in governmental budgets** – Increasing budget constraints and changes in the rationale for the public support of universities have led to new public policies

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<sup>350</sup> A. GEUNA and L. NESTA, *o.c.*, page 794

<sup>351</sup> A. GEUNA and L. NESTA, *o.c.*, page 790

<sup>352</sup> The transition in knowledge production and in cooperation between universities and industry is well recognised and described in the literature, *e.g.* using the formal "triple-helix model" of Leydesdorff & Etzkowitz. In addition to the traditional "spheres" of industry and universities, this model introduces a third sphere (the government) that affects research. The three spheres interact with each other and together contain the genetic material of the innovation system. While the spheres used to be separate entities that interacted across strongly defended boundaries, the boundaries between the spheres have blurred since the Second World War. See, for example, H. ETZKOWITZ and L. LEYDESDORFF, "The Triple Helix of University-Industry-Government Relations: A Laboratory for Knowledge Based Economic Development", *EASST Review* 14, 1995, no. 1, pages 11-19. Multiple follow-up articles of the same authors and various authors are available and several international congresses have been organised with respect to the triple-helix model. Inter alia: L. LEYDESDORFF and H. ETZKOWITZ, "The Triple Helix as a Model for Innovation Studies", *Science & Public Policy* 1998, Vol. 25(3), pages 195-203; L. LEYDESDORFF and H. ETZKOWITZ, "The Future Location of Research: A Triple Helix of University-Industry-Government Relations", II. *EASST Review* 15, no. 4, 20-25. Presented at a conference in New York, 1998

that support the commercialisation of publicly funded research results<sup>353</sup>. After World War II, the rationale for public support of science was challenged by a more contractual-oriented vision on how to support research<sup>354</sup>. Governments, and the society at large, were increasingly convinced that the budgets allocated to universities should be beneficial for society, so that universities were increasingly expected to actively participate in the market. The traditional scientific "ivory tower" needed to be abolished<sup>355</sup>.

**Legislative changes** – The most well-known example is the adoption of the US Bayh-Dole Act (1980), which facilitated the administrative procedures around university patenting, streamlined commercialisation arrangements<sup>356</sup> and assigned IPR to universities, along with a duty to licence the patents and facilitate their translation and commercialisation (the so-called "*blanket permission*"). Before the Bayh-Dole Act, both funding bodies and universities could claim ownership rights on research projects, and US law did not provide a clear answer as to who held rights to patent federally funded research<sup>357</sup>. Hence, patent applications filed by US universities before the Bayh-Dole Act required case-by-case negotiation of the assignment of patent rights and their subsequent licensing<sup>358</sup>. Furthermore, before the Bayh-Dole Act, it was not possible to grant exclusive licence rights<sup>359</sup>, which impacted the value of patents, since all interested parties could gain access to patents

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<sup>353</sup> A. GEUNA and L. NESTA, *o.c.*, page 791

<sup>354</sup> A. GEUNA, "The changing rationale for European University research funding: are there negative unintended consequences", *Journal of Economic Issues*, 2001, 35, page 607

<sup>355</sup> M-C JANSSEN, 1996, pages 368-369

<sup>356</sup> B. VERSPAGEN, 2006, *o.c.*, page 618

<sup>357</sup> B. VERSPAGEN, 2006, *o.c.*, page 618

<sup>358</sup> Nevertheless, the Bayh-Dole Act was not the starting point of increased university patenting in the USA. The Act was adopted to answer the desire of American universities to patent their inventions: see D.C. Mowery and B.N. SAMPAT, "*niversity patents and patent policy debates in the USA, 1925–1980. Industrial and Corporate Change*, 10 (3), 2001, pages 781-815

<sup>359</sup> DC Mowery, RR Nelson, B.N. SAMPAT and AA ZIEDONIS, "The Effects of the Bayh-Dole Act on U.S. University Research and Technology Transfer: An Analysis of Data from Columbia University, the University of California, and Stanford University", in *Industrializing Knowledge: University-Industry Linkages in Japan and the United States*, MIT Press, 1999, page 274

on equal terms. Individual researchers and institutions varied widely in their response to the Bayh-Dole Act<sup>360</sup>.

**Budgetary changes at universities** – Due to increasing public budget constraints, government funding of universities substantially declined and universities were gradually obliged to diversify their sources of income, such as contracted assignments. As from 1980, the policies and priorities of universities have been increasingly impacted by the demand for relevant (practical) research and the pressure for accountability and cost reduction<sup>361</sup>. Universities and academic researchers are increasingly prone to regard their knowledge as targets for opportunities for creating income<sup>362</sup>, and are now increasingly encouraged to collaborate with private companies. Furthermore, academic patents increase the probability to have local knowledge transfer and, hence, potential local job creation<sup>363</sup>.

**New incentives and performance criteria** – The policy shifts at universities have also urged the development of new performance criteria for academics. Performance is now increasingly measured by both scientific performance and successful follow-on commercial outputs. The changes in financial resources have entailed corresponding changes in the legal status of researchers: researchers receive incentives to complement their research activities with technology transfer activities<sup>364</sup>. Intermixed with potential personal financial gain from scientific discoveries, new incentive schemes are being created for academics.

**Changes in IP legislation** – The scope of IP legislation has been widened. While basic research results could not be patented initially, the widening scope of legislation allowed patenting of results of basic research, particularly in the United States. This lower barrier allows academic researchers to more easily patent their inventions<sup>365</sup>.

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<sup>360</sup> F. MURRAY and S. STERN, 2005, *o.c.*, page 9

<sup>361</sup> A. GEUNA, 2001, *o.c.*, pages 607-614

<sup>362</sup> G. VAN OVERWALLE, "Reconciling Patent Policies with the University Mission", *Ethical perspectives: Journal of the European Ethics Network* 13, no. 2 (2006), pages 231-247

<sup>363</sup> D. GUELLEC and B. VAN POTTELSBERGHE DE LA POTTERIE, *The economics of the European patent system*, Oxford University Press, 2007, page 186

<sup>364</sup> A. GEUNA and L. NESTA, 2006, *o.c.*, page 791

<sup>365</sup> E. J. IVERSEN, 1999, A. KALOUDIS, *o.c.*, page 19; MOWERY (2001), *o.c.*

**New areas of research** – Some "new" areas of research, such as biotechnology, molecular biology, nanotechnology, pharmaceuticals and ICT, have fostered the rapid rise of academic patenting. These areas of research have shown significant university patenting activity across countries, as universities could earn significant income from licensing out their patented discoveries<sup>366</sup>. Several of these sciences also demand significant investments in cutting-edge technology and lab material. Some commentators argue that the feasibility of pursuing those opportunities in university laboratories have had a greater effect than the policy changes<sup>367</sup>.

**Blurred distinction between basic and applied research** – The traditional distinction between basic and applied research has blurred, particularly in the "new" areas of research. Some pieces of knowledge can now be considered as being at the same time basic and applied research<sup>368</sup>, and are consequently a candidate for both scientific publication and patenting. Science and technology became increasingly interwoven, and realised their growing interdependency. Universities, from their part, realised they could not afford to abstain from conducting applied science<sup>369</sup>.

**Changes in industrial research** – While companies used to do the bulk of their important research work in their own laboratories, this no longer holds true for all

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<sup>366</sup> MOWERY, 2001, *o.c.*; OECD, *Turning Science into Business. Patenting and Licensing at Public Research Organizations*, Paris, 2003, page 13; J. M. AZAGRA-CARO and A. ROMERO-DE-PABLOS, *Patenting at public research organisations: a historical-economic approach*, Prepared for Dime Working Papers after the 2nd Extra Workshop, EPFL, Lausanne (Switzerland), 2006, page 3; B. VERSPAGEN (2006), *o.c.*, page 618; G. VAN OVERWALLE, "Protecting and sharing biodiversity and traditional knowledge: holder and user tools" in *Ecological Economics*, Volume 53 (4), 2005, pages 585-607

<sup>367</sup> J.T. WALLMARK, "Inventions and patents at universities: the case of Chalmers University of Technology", *Technovation*, 1997, 17 (3); A. GEUNA and L. NESTA, 2006, page 794

<sup>368</sup> See the fundamental article on this matter by D. STOKES, 1997, "Pasteur's Quadrant: basic science and technological innovation", Washington D.C.: The Brookings Institution, 1997; including the formal model of "Pasteur's quadrant". This model is named after inventor Louis Pasteur, whose fundamental insights into microbiology served both as a foundation for the germ theory of disease and had practical application for cholera and rabies (as cited in F. MURRAY and S. STERN (2005), page 7). D. STOKES suggests that a two-dimensional view of research is a better representation of reality than the one-dimensional, traditional "basic-to-applied" concept of research.

<sup>369</sup> M-C JANSSENS, 1996, *o.c.*, page 370; S. Crespi, "Intellectual property and the academic community", *EIPR*, 1997

companies, due to the complexity of products, the necessity of cross-discipline research, increased competition, mobility of people and mobility of capital, and focus on corporate core activities. Companies are now actively searching for collaboration with other companies and with academic researchers in a new form of open innovation<sup>370</sup>. Interestingly, the statement "*not invented here*" has become a term of approval, rather than one of scorn<sup>371</sup>. Also, R&D-oriented companies are now as responsive as academic institutions to scientific publications. Their R&D staff screen academic publications routinely, publish actively and participate to conferences and workshops, thus joining the academic community, and sharing its judgements on individual scientists' reputation<sup>372</sup>.

**Changes in company funding** – Early disclosure of research and development results may be important for some young companies in order to attract investors<sup>373</sup>. Industry also publishes inventions in order to receive attention for its patents or products.

### 3.3. Advent of the Internet

Before the advent of the Internet, both patent specifications and scientific publications used to require off-line consultation in the patent bureau and the library respectively, which could involve significant efforts for a researcher. It seems reasonable to assess that, from a reader's point of view, the practical barriers to obtaining access to patent specifications used to be as difficult – if not more difficult – as obtaining access to scientific publications.

*Consider, for example, a scientific researcher who needs to receive more information regarding the state of the art in a certain area of his expertise. In order to obtain a scientific article in a scientific journal, he used to go to his university's or*

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<sup>370</sup> Commission Communication adopted on 4 April 2007 : "*Improving knowledge transfer between research institutions and industry across Europe: embracing open innovation – Implementing the Lisbon agenda*" – COM(2007)182, page 4

<sup>371</sup> Lambert Review of Business-University Collaboration, Final Report, 2003, page 3 and page 10;

<sup>372</sup> S. BRESCHI, F. LISSONI and F. MONTORBIO, *From publishing to patenting: how to become an academic inventor?*, 32nd Conference of the European Association for Research in Industrial Economics, 2005

<sup>373</sup> Biotech study EC, page 10

*department's library to consult the available journals. In case certain journals would not be available, he (or his librarian) would need to contact another library, another institute or the publisher of the journal to get a copy of the requested article. In most cases, however, it can be expected that the practical barrier for an academic researcher to obtain access to scientific information was moderate, provided the library was not physically distant and the journal was readily available.*

In the case of a researcher in a private company or a private citizen, similar considerations applied, *i.e.* the practical barrier for obtaining readily available journals was moderate.

In comparison, the practical barrier for researching patent applications could be rather significant before the rise of the Internet. Although some patent bureaux allowed subscription to the periodical publication of summaries of new inventions, access to the full specification of the patent used to require a physical visit to the patent bureau. Depending on the location of the patent bureau, this could require significant travelling. Obviously, such practical barrier prevented researchers from easily inspecting patent applications.

The wide adoption of the Internet offers the possibility to significantly lower the efforts required to consult patent specifications and scientific publications. Instead of physical visits to the library or patent bureau, patents can now be easily consulted and searched using the websites of the patent bureaux (or external websites such as esp@cenet). Scientific publishers can now make available digital versions of their journals and periodicals, with almost no searching overhead involved<sup>374</sup>. Using the Internet, researchers now have convenient access to an increasing amount of literature that previously required trips to the library, inter-library loan delays, or substantial effort in locating the source<sup>375</sup>. As a result, researchers cite newer articles, and the scientific consensus will typically form more rapidly (although, as a drawback, fewer distinct articles seem to receive attention and researchers seem to cite – on average – fewer articles)<sup>376</sup>.

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<sup>374</sup> J. EVANS, "Electronic Publication and the Narrowing of Science and Scholarship", *Science*, 18 July 2008

<sup>375</sup> S. LAWRENCE, "Online or Invisible?", *Nature* 411, 2001, (6837);

<sup>376</sup> J. EVANS, *o.c.*



Therefore, while the practical barriers to consult patent specifications were generally higher than the practical barriers to consult scientific journals, the balance has now theoretically been restored to an equal level with the advent of the Internet. Even so, the equilibrium will be disturbed when on-line access restrictions apply (as discussed further in section 4.5 below).

### 3.4. Consequences of the changed dichotomy

The changes described in section 3.2 and 3.3 have had a profound impact on research activities. These changes have impacted the traditional dichotomy between publishing and patenting, but have also influenced multiple other aspects of the research activity. These and other consequences are discussed in this section 3.4.

It should, however, be borne in mind that it remains difficult to assess the impact of the increased patenting focus of universities on academic research. While numerous studies are available for the US and Canada, there are only a few quantitative studies on patenting and licensing by universities in Europe<sup>377 378</sup>. Data on patenting and licensing by PROs is even more scarce<sup>379</sup>. In light of the different institutional frameworks and legislation, US data from surveys and studies may not equally apply to European academic research.

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<sup>377</sup> G. BUENSTORF, *o.c.*, page 1 and page 10; A. GEUNA and L. NESTA, page 792, with references to some of the studies; J. M. AZAGRA-CARO and A. ROMERO-DE-PABLOS (2006), page 4; M-C JANSSENS (1996), *o.c.*, page 384 (acknowledging the lack of relevant statistical data for Belgium)

<sup>378</sup> Available studies include: OECD, *Turning Science into Business. Patenting and Licensing at Public Research Institutions*, OECD, Paris, 2003; for Belgium: S. SARAGOSSI, and B. VAN POTTELSBERGHE DE LA POTTERIE, 2003, "Academic patents as an indicator of useful research? A new approach to measure academic inventiveness", *Research Evaluation* 12 (1), 2003, pages 17-27; for Finland: M. MEYER, 2003, *o.c.*; for Germany: G. BUENSTORF, 2006, *o.c.*; for Italy: S. BRESCHI, F. LISSONI and F. MONTOBBO. *The Scientific Productivity of Academic Inventors: New Evidence From Italian Data*, CESPRI Working Paper No. 168, Bocconi University Milan, 2005; for the United Kingdom: UNICO and NUBS, *University Commercialisation Activities - Annual Survey Financial Year 2001*, Nottingham University Business School, Nottingham, 2002; for France, Italy and Spain: F. CESARONI and A. PICCALUGA, *Patenting activity of European Universities. Relevant? Growing? Useful?*, Paper Presented at the Conference Rethinking Science Policy: Analytical Frameworks for Evidence-Based Policy, SPRU, University of Sussex, 2002, pages 21-23.

<sup>379</sup> J. M. AZAGRA-CARO and A. ROMERO-DE-PABLOS (2006), *o.c.*, page 4

### 3.4.1. Increased cooperation between industry and universities

Compared to the traditional setup, industry and universities now increasingly collaborate on research projects<sup>380</sup>. Such collaboration can for example take the form of contract research, collaborative research or consultancy projects.

**Evaluation** – By being involved in both basic research and applied research, academic researchers and researchers from industry may experience interesting spill-over effects<sup>381</sup>. Science and technology thus benefit from one another in a continuous interaction and dynamic setup, whereby knowledge from application-oriented research is fed back into the basic research agenda<sup>382</sup>. The spill-over effects can take many forms for both industry and universities:

- engaging in research activities for practical problems raises the quest for new fundamental questions<sup>383</sup>. Indeed, several studies indicate that academic cooperation with industry will lead to a higher scientific output, in terms of the number of publications<sup>384</sup>;
- contract research may be detrimental in terms of academic autonomy and independence of research<sup>385</sup>;
- academic researchers that get in contact with industry get better chances to test their theories in practice<sup>386</sup>;

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<sup>380</sup> M-C JANSSENS (1996), *o.c.*, page 371, with extensive references to other studies

<sup>381</sup> Lambert Review of Business-University Collaboration (2003), *o.c.*, page 23

<sup>382</sup> J. CALLAERT, B. VAN LOOY, D. FORAY and K. DEBACKERE (2006), *Combining the production and the valorization of academic research: A qualitative investigation of enacted mechanisms*, Paper presented at the ExTra / DIME workshop: "Technology transfer from universities: A critical appraisal of patents, spin-offs and human mobility". (September 2006, Lausanne, Switzerland), page 3;

<sup>383</sup> E. MANSFIELD, *Academic research underlying industrial innovations: sources characteristics and financing. Review of Economics and Statistics*, 77 (1), 1995, pages 55-65.

<sup>384</sup> L.M. RANGA (2003), "Structure and Determinants of the Innovative Capacity of Academic Research Groups Involved in University-Industry Collaboration", unpublished Dphil Thesis. SPRU, University of Sussex, Brighton, 2003 (there is a positive relationship between high publication output and industrial funding). Idem: M. GULBRANDSEN and J.C. SMEBY, "Industry funding and university professors' research performance", *Research Policy* 34, 2005, pages 932-950

<sup>385</sup> M. GULBRANDSEN and J.C. SMEBY (2005), *o.c.* (about 20% of respondents reported that contract research is problematic in terms of autonomy and independence of research)

- increased industry contacts may raise additional funds for labs, instruments and students<sup>387</sup>;
- increased industry contacts may lead more easily to the creation of spin-off companies that are partially owned by the university;
- using insights obtained from scrutiny and awareness of the patent literature may increase the quality and state-of-the-art character of basic research<sup>388</sup>; and
- cooperation with universities produces a much larger "*intellectual gene pool*" than an individual company could hope to create on its own, which may stimulate innovative research and allows companies to get in touch with and recruit the brightest young talents<sup>389</sup>.

### 3.4.2. Shift of research funding

Due to decreased government funding, the increased possibilities to cooperate with the industry and the increased possibilities to gain income from patented inventions, the funding structure of universities has changed.

**Evaluation** – Even though university budgets are increasingly dependent on industrial collaboration and licensing income, government funding is still crucial and industrial funding has not substituted public funding<sup>390</sup>. Also, other sources of funds, such as private foundations and the European Commission, have contributed significantly to the funding of university research<sup>391</sup>.

The financial resources generated from patent licences should not be overestimated. The value of patents follows a highly skewed distribution, whereby most innovations yield modest returns and few innovations have high returns<sup>392</sup>. University pat-

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<sup>386</sup> M. CALDERINI, C. FRANZONI and A. VEZZULLI, "If star scientists do not patent: The effect of productivity, basicness and impact on the decision to patent in the academic world", *Research Policy* 36, 2007, page 305

<sup>387</sup> M. CALDERINI, C. FRANZONI and A. VEZZULLI (2007), *o.c.*, page 305

<sup>388</sup> B. VAN LOOY, J. CALLAERT and K. DEBACKERE (2006), *o.c.*

<sup>389</sup> Lambert Review of Business-University Collaboration (2003), *o.c.*, page 2

<sup>390</sup> M-C JANSSENS, 1996, *o.c.*, page 412, reports that for the Katholieke Universiteit Leuven (Belgium), the contract research amounted to 21.5% of the budget for 1994-95, and 18.5% of the budget for 1993-1994.

<sup>391</sup> A. GEUNA, 2001, *o.c.*, page 626

<sup>392</sup> F.M. SHERER and D. HARHOFF, "Technology policy in a world of skew-distributed outcomes", *Research Policy* 29, 2001, pages 559-566

ents are no exception: even the most successful US universities tend to generate only small amounts of money from their licences<sup>393 394</sup>.

In the same context, it is interesting to note that, although university researchers are significantly involved in the submission of patents, empirical evidence indicates that the number of patents in which university researchers were *involved*, is much higher than the number of patents that are actually *owned* by universities<sup>395</sup>. The university-invented, but not university-owned patent is therefore still the typical type of academic patent, even in countries where universities are entitled to enforce their ownership<sup>396</sup>. Indeed, most research contracts between universities and industry seem to allocate the ownership of inventions to the industrial partner<sup>397</sup>. Large differences exist, however, between Member States<sup>398</sup>.

A. GEUNA and L. NESTA<sup>399</sup> argue that, in the long run, the growing importance of academic patents will likely exacerbate differences between universities, as universities with low revenues from royalties will witness scarcer resources. In light of

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<sup>393</sup> Lambert Review of Business-University Collaboration (2003), *o.c.*, page 4

<sup>394</sup> See also Lotka (scientific performance is concentrated within a small fraction of researchers), Seglen (scientific productivity is similar to the 80-20 rule: 80% of the work is done by 20% of the people) and Ernst, Leptien and Vitt<sup>394</sup> (a small group of key inventors is responsible for the major competitiveness). A.J. LOTKA, "The frequency distribution of scientific productivity", *J. of the Washington Acad. of Sci.* 16, 317-323, 1926; P.O. SEGLEN, "The skewness of science", *Journal of the American Society for Information Science*, Vol 43, 1992, pages 628-638; Ernst et al., *Inventors are not alike: Distribution of Patenting Output among Industrial R&D Personnel*, 2000

<sup>395</sup> M. MEYER, "Academic patents as an indicator of useful research? A new approach to measure academic inventiveness", *Research Evaluation*, 12 (1), 17-27; S. SARAGOSSI and B. VAN POTTELSBERGHE DE LA POTTERIE, "What patent data reveal about universities: the case of Belgium", *Journal of Technology Transfer*, 18, 2003, pages 47 - 51.

<sup>396</sup> J.M. AZAGRA CARO and P. LLERENA, *Types of contractual funding and university patents: from analysis to a case study. Paper Prepared for Knowledge and Economic and Social Change: New Challenges to Innovation Studies*, Conference, Manchester, CRIC, 2003

<sup>397</sup> M-C JANSSENS, 1996, *o.c.*, page 413

<sup>398</sup> *E.g.*, in France and Italy only about 10% of patents granted to public organisations are owned by universities, while in Spain universities own nearly 50% of the patents granted to PROs. See F. CESARONI and A. PICCALUGA, *Patenting activity of European Universities. Relevant? Growing? Useful?*, Paper Presented at the Conference Rethinking Science Policy: Analytical Frameworks for Evidence-Based Policy, SPRU, 2002.

<sup>399</sup> A. GEUNA and L. NESTA, *o.c.*, page 805

the relatively minor importance of patent licensing revenues for most universities, and the concentration of the most valuable inventions<sup>400</sup>, GEUNA and NESTA fear that the increased attention for patentability may cause a net difference in the financial resources for most universities.

### 3.4.3. New academic focus

In order to be patentable, inventions need to be capable of industrial application. Hence, it can be expected that an increased academic focus on patentable research would have a negative impact on the amount of basic research being performed, since basic research focuses on questions of fundamental scientific interest, without practical relevance<sup>401</sup>.

**Evaluation** – Given that a researcher's time budget is limited, it seems logical that time spent on submitting a patent application will be lost for research, unless publishable research results can be turned into inventions without any additional effort<sup>402</sup>. Academic research agendas would thus shift in favour of applied research and short-term exploitable research<sup>403</sup>.

While it seems logical that an increased focus on patentable output would have a negative impact on basic science, empirical studies in this regard are inconclusive<sup>404</sup>. Some studies suggest that the balance between applied and basic research has not shifted<sup>405</sup>, at least not in terms of publication amount<sup>406</sup>. On the basis of these find-

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<sup>400</sup> F.M. SHERER and D. HARHOFF, "Technology policy in a world of skew distributed outcomes", *Research Policy* 29, 2001, 559–566;

<sup>401</sup> D. STOKES, 1997, *o.c.*, as cited in F. MURRAY and S. STERN (2005), *o.c.*; M. CALDERINI, C. FRANZONI and A. VEZZULLI (2007), *o.c.* page 304; R.R. NELSON, "The Market Economy, and the Scientific Commons", LEM Working Paper Series, 2004;

<sup>402</sup> G. BUENSTORF, 2006, *o.c.*, page 7

<sup>403</sup> M. CALDERINI, C. FRANZONI and A. VEZZULLI (2007), *o.c.* page 304; A. GEUNA and L. NESTA (2006), *o.c.*, page 796

<sup>404</sup> Similar inconclusive evidence is the case for the assumption that patenting would crowd out publication, as discussed in section 4.3.

<sup>405</sup> S. BRESCHI, F. LISSONI and F. MONTORBIO (2005), *o.c.*, page 2 (history analysis of patent and publication data for a sample of Italian academic scientists); L.M. RANGA (2003), *o.c.* (Katholieke Universiteit Leuven, Belgium: no significant shift towards applied research publications); J. POYAGO-THEOTOKY, J. BEATH and J., SIEGEL, "Universities and fundamental research: reflections on the growth of university–industry partnerships", *Oxford Review of Economic Policy* 18 (1), 2002, 10–21; N. VAN ZEEBROECK, B.

ings, the authors conclude that it is feasible to combine scientific and entrepreneurial activities without one jeopardising the other<sup>407</sup>, often leading to cross-fertilisation<sup>408</sup>. Other studies show, on the contrary, that an increased attention to patents does have an impact on the amount of basic research<sup>409</sup>.

**Difference across scientific fields** – It also seems to be the case<sup>410</sup> that the impact on basic science research varies across scientific fields. In areas such as biotechnology and ICT<sup>411</sup>, the distinction between basic research and applied research is not as sharp as in other areas, such as physics. Consequently, the potential shift from basic to applied science is less relevant for these areas of science.

**Patent-paper pairs** – In this respect, it should be noted that there is an increasing trend to combine publishing and patenting activities (the so-called "*patent-paper pairs*"). In a patent-paper pair, a single invention is submitted as a patent publication, and is then later on also submitted for publication in a scientific journal<sup>412</sup>. Patent-paper pairs can partially explain why the rise of patents in some scientific fields seems to have no negative impact on the amount of publications.

By embedding the same piece of knowledge in two distinct institutional regimes, researchers can profit from the advantages of the patenting system (particularly its financial incentives), and simultaneously receive recognition from the scientific community. Accordingly, some studies recommend universities to stimulate their

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VAN POTTELSBERGHE DE LA POTTERIE, D. GUELLEC, "Patents and academic research: a state of the art", *Journal of Intellectual Capital*, 2008, issue 9, pages 246-263

<sup>406</sup> B. VAN LOOY, J. CALLAERT and K. DEBACKERE (2006), *o.c.*

<sup>407</sup> B. VAN LOOY, J. CALLAERT and K. DEBACKERE (2006), *o.c.*

<sup>408</sup> E. SAPSALIS and B. VAN POTTELSBERGHE DE LA POTTERIE, *The Institutional Sources of Knowledge and the Value of Academic Patents*, CEB Working Paper N° 04/003 2004: when a patent is invented by a researcher who uses his own scientific and tacit knowledge, one may expect a potentially higher economic value. According to these authors, the current knowledge transfer policies should therefore stimulate patenting by researchers with a high number of publications.

<sup>409</sup> M. GULBRANDSEN and J. SMEBY, "Industry funding and university professors' research performance", *Research Policy* 34, 2005, pages 932-950

<sup>410</sup> A. GEUNA and L. NESTA, 2006, *o.c.*, page 799

<sup>411</sup> D. STOKES, 1997, *o.c.*

<sup>412</sup> F. MURRAY and S. STERN, 2005, *o.c.*, page 3

star scientists to patent<sup>413</sup>. Quantitative studies suggest, however, that scientific articles for which patents are granted, incur a significant but modest decline in scientific citations. The decline in citations becomes more pronounced with the number of years elapsed since the patent grant<sup>414</sup>. Also, as will be further explained below (section 4.4), patent-paper pairs contribute to the growing problem of the privatisation of science.

Patent-paper pairs are particularly present in emerging scientific fields such as biotechnology, where the boundaries between basic and applied science are blurred and a single piece of knowledge can serve as both basic and applied science. For example, nearly 50% of a sample of articles published in "Nature Biotechnology" was found to be paired with a patent<sup>415</sup>.

#### 3.4.4. Teaching quality

Teaching has a rather low impact on the careers of academic researchers<sup>416</sup>. If academic policies shift their attention towards patentable inventions, academic researchers can be expected to reduce their time and commitment to teaching activities. However, to the best of our knowledge, no empirical evidence exists for this hypothesis.

## 4. Analysis under the changed dichotomy

In light of the numerous changes to the traditional dichotomy described in section 3.2, the answer to the question as to whether patenting or publishing is better suited to foster the dissemination of knowledge, is no longer obvious.

This section 4 provides an overview of the advantages and disadvantages of each method of dissemination, taking into account both private benefits and societal benefits.

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<sup>413</sup> E. SAPSALISA, B. VAN POTTELSBERGHE DE LA POTTERIE, and R. NAVON, "Academic versus industry patenting: An in-depth analysis of what determines patent value", *Research Policy*, Volume 35, Issue 10, December 2006, Pages 1631-1645

<sup>414</sup> F. MURRAY and S. STERN, 2005, page 30-31

<sup>415</sup> F. MURRAY and S. STERN, 2005, *o.c.*, page 30

<sup>416</sup> A. GEUNA and L. NESTA, 2006, *o.c.*, page 799

The reader should bear in mind that the warning asserted in section 3.4 about the limited empirical data available for Europe, also applies to this section 4.

## 4.1. Speed of dissemination

### 4.1.1. General

Patent specifications will not generally be published until the expiry of eighteen months after the submission or filing date<sup>417</sup>. Scientific journals, on the other hand, can publish information much faster, provided the flow of information from author to publisher is efficient. Even so, scientific publications are often delayed due to several reasons.

**Delays due to patenting** – With the exception of Estonia, Portugal and Spain, all European Member States apply the rule of *absolute novelty*: the dissemination of information about the invention before the submission of the patent application will destroy the novelty of the invention in most European Member States (although exceptions apply: see the discussion below).

It can be expected that scientific researchers who wish to patent their invention will face a delay when submitting their results for publication in a scientific journal in order to safeguard potential patents. This protective strategy for publications may hinder the rapid dissemination of scientific knowledge, thus slowing down scientific progress<sup>418</sup>. The promise of increased speed by virtue of the new communication channels on the Internet is thus negatively impacted by the fear of undermining the patentability of research results.

Even so, according to a survey commissioned by the European Commission (2002), only a very small fraction of researchers acknowledged actually experiencing *considerable* delays in publication. The delays were more prominent for less experienced users of the patent system. Researchers that had previously submitted patent appli-

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<sup>417</sup> Although publication can be accelerated.

<sup>418</sup> S. BRESCHI, F. LISSONI and F. MONTORBIO, 2005, *o.c.*, page 2; Report from the Commission to the European Parliament and Council, "An assessment of the implications for basic genetic engineering research of failure to publish, or late publication of, papers on subjects which could be patentable as required under Article 16(b) of Directive 98/44/EC on the legal protection of biotechnological inventions", Brussels, 14.01.2002, COM(2002) 2 final, page 4;



cation indicated to have experienced no, or only a marginal, delay in publication<sup>419</sup>. In our own questionnaire survey, however, correspondents were divided on this subject: while 45% of the correspondents agreed that the delays are not problematic in practice, 40% did not agree.

Multiple reasons can be invoked to explain the delay experienced by the researchers:

- A **lack of know-how** about the patent system and/or missing support infrastructures may cause a delay in the scientific publication<sup>420</sup>. While technology transfer offices can speed up the submission of patent applications, it is argued that only a few universities have a strong enough research base to be able to build high-quality offices on their own<sup>421</sup>.
- The patent application procedure may be delayed because of delays in **securing financing** for the patent application<sup>422</sup>;
- Delays may also be caused by a lack of knowledge regarding **regulations concerning ownership** and use of inventions (such as labour law)<sup>423</sup>.

**Delays due to peer review** – Patent submission is not the only factor that causes delays in the publication of scientific results. Another important contributing factor is the peer review process for scientific publications. The publication process of a scientific article in a journal is a demanding and often lengthy process<sup>424</sup>, and it typically takes several months or even several years in some fields for a submitted paper to appear in print.

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<sup>419</sup> Report from the Commission to the European Parliament and Council (2002), *o.c.*, page 12

<sup>420</sup> Report from the Commission to the European Parliament and Council (2002), *o.c.*, page 10

<sup>421</sup> For the UK: see Lambert Review of Business-University Collaboration, *o.c.*, page 5; Also: Commission Communication adopted on 4 April 2007: "*Improving knowledge transfer between research institutions and industry across Europe: embracing open innovation - Implementing the Lisbon agenda*" - COM(2007)182, page 4

<sup>422</sup> Report from the Commission to the European Parliament and Council (2002), *o.c.*, page 10

<sup>423</sup> Report from the Commission to the European Parliament and Council (2002), *o.c.*, page 20

<sup>424</sup> R. Smith, "Peer review: reform or revolution", *BMJ* 1997; 315:759-760; B. Gitanjali, "Peer review – process, perspectives and the path ahead", *J Postgrad Med* 2001;47:210-4

**Evaluation** – Combined with the results of the survey commissioned by the European Commission, this indicates that the delays caused by potential patent submissions does not seem problematic in most cases.

#### 4.1.2. Exceptions: non-prejudicial disclosures

While, in principle, the dissemination of information about the invention before the submission of the patent application will destroy the novelty of the invention, some exceptions exist.

With the exception of Cyprus and Estonia<sup>425</sup>, all Member States have indicated that in two specific circumstances, the novelty of an invention is not destroyed despite the public disclosure of the invention:

- if the disclosure was the result of **evident abuse**<sup>426</sup> by a third party, and occurred within the six months<sup>427</sup> preceding the filing of the patent application. Basically, evident abuse exists where it is apparent that the third party has not been authorised to communicate to others the patentable information<sup>428</sup>. This will, for example, be the case when information has been stolen and subsequently disclosed, or when a third party has disclosed the invention in violation of a non-disclosure agreement;
- if the invention was displayed at an **official (or officially recognised) international exhibition**, falling under the Convention on International Exhibitions<sup>429</sup> within the six months preceding the filing of the patent application, provided that the applicant has indicated this disclosure when filing the patent application.

These "non-prejudicial disclosures" are found in article 4.4 of the 1963 Convention on the Unification of Certain Points of Substantive Law on Patents for Invention

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<sup>425</sup> Note, however, that Estonian patent law provides for a grace period (as explained below), which also encompasses the two non-prejudicial disclosures due to its broad scope.

<sup>426</sup> *"infringement of the lawful rights"* under Hungarian law

<sup>427</sup> No time limit applies under Portuguese law

<sup>428</sup> Report on the 1998 hearing on the grace period issue, see [www.european-patent-office.org/epo/pubs/oj99/3\\_99/3\\_1559.pdf](http://www.european-patent-office.org/epo/pubs/oj99/3_99/3_1559.pdf)

<sup>429</sup> For a list of registered and recognised exhibitions, see the website of the Bureau International des Expositions ([www.bie-paris.org](http://www.bie-paris.org))

<sup>430</sup> Article 3.(b) of the Hungarian Patent Act (Act XXXIII OF 1995 on the protection of inventions by patent) describes it as *"an exhibition specified in an announcement by the President of the Hungarian Patent Office published in the Hungarian Official Gazette"*.

("Strasbourg Patent Convention")<sup>431</sup> and article 55 of the European Patent Convention. The second non-prejudicial disclosure (international exhibitions) is also found in, and based on, article 11 of the 1883 Paris Convention for the Protection of Industrial Property.

Furthermore, Spanish patent law also offers a third exception, for trials conducted by the applicant or his successors. Such trials do not destroy the novelty of an invention, provided that they do not amount to exploitation or a commercial offering of the invention, and were carried out during the six months preceding the filing of the application. Although this third exception does not seem in line with the European Patent Convention, it is applied in practice by the Spanish patent office. Even so, patent holders should realise that a patent for which this third exception was used, cannot be obtained in another European Member State<sup>432</sup>, as the invention's novelty requirement is not met in such other Member States.

Portuguese patent law also used to offer a third exception for communications made before scientific societies or professional technical associations, or for the purpose of Portuguese or international competitions. However, this exception – which did not seem to be in line with the European Patent Convention – was abolished in 25 July 2008 by way of Decree-Law No. 143/2008

**Evaluation** – From a research perspective, the non-prejudicial disclosures (in particular the specific situation of international trade exhibition, as the number of exhibitions qualifying is very small<sup>433</sup>) described above, seem to be of relatively minor importance.

A third, more general type of non-prejudicial disclosure (the so-called "*general grace period*") exists in Estonia and Romania. Taking into account the wide scope of the general grace period, its importance for the research community and its contested status, section 4.1.3 provides an in-depth discussion of its various aspects.

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<sup>431</sup> Ratified by the following European Member States: Belgium, Denmark, France, Germany, Ireland, Italy, Liechtenstein, Luxembourg, the Netherlands, Sweden, and the United Kingdom.

<sup>432</sup> with the exception of Estonia, which has a general grace period, as explained in the next section

<sup>433</sup> M. Moore, "*A general period of grace in a first to file world: key issues*", Intellectual Property Quarterly, 1999

#### 4.1.3. General grace period

##### a. *Europe*

In contrast to the United States, Japan, Canada and Australia, European Member States' laws do not offer a general grace period (except for the few exceptions described below)<sup>434</sup>. In these Member States, situations can arise where researchers overlook the fact that the disclosure of inventions without a previous patent application will destroy the novelty of the invention and thus forfeit any potential patent application. In order to avoid such patent forfeit, technology transfer officers impose strict regulations on the publication of patentable inventions.

Interestingly, Estonian law<sup>435</sup> does offer a general grace period<sup>436</sup> of twelve months for information disclosed by a person who is entitled to patent (or by another person with his knowledge), provided a request is filed together with the patent application or not later than two months before the publication of the patent application<sup>437</sup>.

Inventors applying for a patent in Estonia should realise, however, that this general grace period is not in line with the European Patent Convention, and that a disclosure will forfeit their possibility to apply for a patent in other Member States. Indeed, pursuant to the European Patent Convention, the legislation of all other Member States holds<sup>438</sup>, or is interpreted in such a way, that any disclosure *anywhere in the world* will destroy the novelty of an invention.

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<sup>434</sup> General grace periods have existed in Germany, Ireland, Italy and the United Kingdom: J. Straus (2000), "*Expert opinion on the case for and against the introduction of a grace period in European patent law*", Submitted on request of the European Patent Organisation, 2000, section G.3

<sup>435</sup> For the sake of completeness, it should be mentioned that Romania also provides a general grace period, although this country is not within the scope of this chapter.

<sup>436</sup> Latvian law offered a grace period up to 2007.

<sup>437</sup> If another person acquired the information unlawfully (or the information was published unlawfully or without the knowledge of the person who has the right to apply for the patent), the request may be filed in the course of the examination of the patent application or in case the patent is contested. Evidence supporting the request shall be appended to the request.

<sup>438</sup> The patent laws of some Member States explicitly state that the territory covered includes any country in the world. For example, Italian patent law refers to a disclosure *"in Italy or*

Hence, in light of the international character of trade, the usefulness of the grace period in only two Member States can be questioned<sup>439</sup>.

*b. United States*

Under US patent law, a previous disclosure by any means and by whomsoever cannot destroy the novelty of the invention, if it is made less than one year prior to the filing of the patent application. The grace period is said to be frequently used for 20% of all patent applications in the US filed by researchers, universities and public research organisations<sup>440</sup>.

The existence of a general grace period in US Law should be explained in relation to the "first-to-invent" patent system used in the United States, whereby patent rights are granted to the first inventor and not to the first person to file an invention<sup>441</sup>. In a first-to-invent system, the grace period should *not* be regarded as a grace period in the European sense – *i.e.*, as an exception to the absolute novelty rule – but rather as the period in which the inventor should file his invention. Hence, in a first-to-invent system, the term "grace" is not appropriate, as there is no "grace", since the first inventor is entitled to a patent if the patent submission is performed on time<sup>442</sup>.

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*abroad*", while Maltese patent law refers to a disclosure "*anywhere in the world*". However, the patent laws of most Member States simply rephrase the EPC wording: "*everything made available to the public by means of a written or oral description, by use, or in any other way*".

<sup>439</sup> The European Commission has organised a workshop on this issue on 24 June 2002 (report available at [ec.europa.eu/research/era/pdf/ipr-gp-report.pdf](http://ec.europa.eu/research/era/pdf/ipr-gp-report.pdf)) and a hearing on 5 October 1998 (report available at [www.european-patent-office.org/epo/pubs/oj99/3\\_99/3\\_1559.pdf](http://www.european-patent-office.org/epo/pubs/oj99/3_99/3_1559.pdf)). Additionally, the Commission has issued a report on the issue of patenting versus publication in the area of basic genetic engineering, which also covers the issue of the general grace period. Further, the European Patent Office has commissioned two expert opinions (Mr. Galama and Dr. Straus: see [www.epo.org/about-us/press/releases/archive/2000/25072000.html](http://www.epo.org/about-us/press/releases/archive/2000/25072000.html)).

<sup>440</sup> Deutsches Bundesministerium für Bildung und Forschung (Editor), *Zur Einführung der Neuheitsschonfrist im Patentrecht - ein USA-Deutschland-Vergleich bezogen auf den Hochschulbereich*, Bonn 2002, page 3.

<sup>441</sup> European Commission workshop report: "*Towards a common view on the features of grace period*" (2003), page 2

<sup>442</sup> J.E.M. GALAMA, "*Expert opinion on the case for and against the introduction of a grace period in European patent law*", submitted on request of the European Patent Organisation, 2000, page 7-8

It should be noted that the recent patent reform acts<sup>443</sup> introduce several changes to the US patenting system, including the conversion to a first-to-file system. Even in the first-to-file system, there will be a general grace period of one year.

*c. Japan*

Japan also recognises a grace period (six months) for non-prejudicial disclosures, for experiments conducted, presentations in printed publication or presentations in writing at a study meeting held by a scientific body. As Japan uses a first-to-file system, the Japanese grace period is a more suitable candidate for comparison with the situation in Europe.

In addition, Japanese patent legislation also provides for the other two non-prejudicial disclosures (third party abuse and disclosure at certain exhibitions). In order to benefit from the international exhibition and general grace period non-prejudicial disclosures, a written statement must be filed simultaneously with the patent application.

*d. Other countries*

A grace period of twelve months is also in force in Canada and Australia (since 2002).

*e. Harmonisation efforts*

The TRIPS agreement leaves the terms of novelty at the discretion of the Members of the WTO. In the context of a harmonisation of substantive patent law, WIPO tried to harmonise the grace period as from 1984 onwards, without success<sup>444</sup>.

Also at the European level<sup>445</sup>, the possibility of a grace period was investigated, as part of a wider reform of EU patent law. However, no progress has been made, in part particularly due to the lack of success on a worldwide scale, which prejudices any unilateral efforts on a European level<sup>446</sup>.

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<sup>443</sup> See the discussion on the United States in chapter 3

<sup>444</sup> J.E.M. GALAMA, 2000, *o.c.*, page 5.

<sup>445</sup> E.g. the efforts at the London Revision Conferences of the Paris Convention, in 1934.

<sup>446</sup> J.E.M. GALAMA, 2000, *o.c.*, page 9

*f. Arguments pro*

The introduction of a general grace period could help in solving two issues: the dilemma of early publishing versus patenting delays (faced by today's researchers and SMEs that want to disclose the invention to potential future partners<sup>447</sup>), and a protection against accidental disclosure of inventions.

Indeed, inventors often disclose all or parts of their inventions, either by ignorance, by mistake, because they may not realise the future industrial application of their invention<sup>448</sup>, or because the involvement of other people is necessary to conduct trials with the new invention (assuming no appropriate precautions were taken)<sup>449</sup>. The advent of the Internet has made the possibility of inadvertently disclosing information even more probable<sup>450</sup>. Furthermore, proponents of a general grace period argue that the absence of a general grace period in Europe could have negative economic consequences, such as the potential shift of investment and technological development out of Europe to countries where pre-filing disclosures are not necessarily prejudicial to patent filing<sup>451</sup>. With the exception of India and some African and Asian states, most countries outside the EU recognise a general grace period<sup>452</sup>.

While the introduction of a general grace period is of great interest to – and strongly advocated by – scientific researchers, it is important to underscore that a

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<sup>447</sup> Report from the Commission to the European Parliament and Council (2002), *o.c.*, page 16

<sup>448</sup> J. STRAUS, 2000, *o.c.*, page 50 (patent law was intended to help inventors, and should not penalise them). Few statistical figures are available regarding this statement. Figures are available for Japan (1999): according to a survey conducted by the Japanese Patent Office, only 0.42 per cent of all patent and utility model applications invoked the grace period. However, according to the same survey, almost half the applications made by public sector research organisations and lone inventors invoked the grace period, which seems to support the anecdotal evidence that lone investors and public sector research organisations do experience problems with preventing disclosure prior to filing (M. MOORE, *o.c.*, footnote 66).

<sup>449</sup> In some cases, the trial may even only be carried out in full view of the public: A. HÜNI, "Comments on the Introduction of an International Period of Grace". As pointed out in the 1998 report on the hearing on the grace period: in some sectors, disclosure is the only option (e.g. the development of agricultural machinery, the manufacturing of footwear or orthopaedic bandages).

<sup>450</sup> Report on the 1998 hearing on the grace period issue, *o.c.*

<sup>451</sup> J. STRAUS, 2000, *o.c.*

<sup>452</sup> J. STRAUS, 2000, *o.c.*, section G.5.3

general grace period is likely to have unequal effects across scientific disciplines. In scientific disciplines with a clear distinction between basic and applied sciences, (*e.g.*, physics), the introduction of a grace period is likely to have limited effects, contrary to disciplines where the distinction between basic and applied sciences is more blurred (*e.g.*, biotechnology)<sup>453</sup>.

*g. Arguments contra*

The main argument against the introduction of a grace period in the first-to-file European patent system, is the assertion that the grace period would *reduce legal certainty* for third parties and may confuse individual inventors by giving them a false sense of security. With a general grace period, companies would face increased risk, which would make it harder for them to reasonably decide on investments<sup>454</sup>. In such a system of reduced certainty, knowledgeable parties (particularly multinationals with a good knowledge of the patent system) may be able to exploit the grace period, by using it strategically to their benefit, to the detriment of others.

A general grace period would not align with the very principles of a first-to-file patent system, which prefers legal certainty<sup>455</sup>. For example, in the (first-to-invent) United States, the invocation of the grace period will lead to costly and complex so-called "interference procedure".

Also, in countries where the general grace period applies, it seems to be infrequently invoked in practice<sup>456</sup>, which raises the question of whether the advantages for a very small group outweigh the disadvantages for the other users of the patent system<sup>457</sup>. Nevertheless, for the small number of patentees who successfully rely on the grace period, it is priceless<sup>458</sup>. This aligns with our own questionnaire survey, where 50% of the correspondents stated that the absolute novelty requirement has regularly or even frequently prevents them from filing a patent submission, while such

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<sup>453</sup> A. GEUNA and L. NESTA, 2006, *o.c.*, page 806

<sup>454</sup> Report on the 1998 hearing on the grace period issue, *o.c.* Contra: M. Moore

<sup>455</sup> M. MOORE, 1999, *o.c.*

<sup>456</sup> It should, however, be recognised that the infrequent invocation may simply be due to the fact that – given the lack of harmonisation – any invocation of the grace period will prejudice the patent application in a country subject to the EPC.

<sup>457</sup> Only 0.42 per cent of all applications in Japan in 1999 (see footnote 448 above), most were for reasons of disclosure at a scientific meeting: M. Moore (1999), *o.c.*

<sup>458</sup> M. MOORE (1999), *o.c.*



was occasionally the case for 22% of the correspondents and never the case for 28% of the correspondents. Accordingly, 68% of the correspondents agreed that a general grace period should be introduced.

Further, a general grace period would also send the wrong signal towards inventors themselves, as they may become careless and inadvertently disclose important information.

Contrary to the public research sector, large industry strongly opposes against the introduction of a general grace period<sup>459</sup>.

### *h. Provisional patent application*

As an alternative to the introduction of a general grace period, patent legislation could provide for a provisional patent application. Such provisional patent application allows patent rights to be secured quickly, and facilitates faster publication or disclosure of inventions. It offers time to check the economic value of inventions and to get in contact with potential licensees<sup>460</sup>.

Although both industry and universities are in favour of a provisional patent application<sup>461</sup>, it should be noted that provisional applications are not a magical solution, as they do not offer a "*safety net*" for inadvertent disclosures, or for situations where the industrial application of an invention only becomes apparent after the initial disclosure. It can nevertheless be an interesting addition to a general grace period, as is also evident from the adoption of the provisional patent application in the Patent Law Treaty<sup>462</sup> (2000). US law also has provisional patent applications since 1995.

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<sup>459</sup> Report from the Commission to the European Parliament and Council (2002), *o.c.* The general position of small and medium sized enterprises is less pronounced. Even so, large enterprises often invoke the grace period in Japan: see J. STRAUS, 2000, *o.c.*, section G.8

<sup>460</sup> [www.ipr-helpdesk.org](http://www.ipr-helpdesk.org), "*Grace Period and Invention Law in Europe and Selected States*", section VI

<sup>461</sup> Report from the Commission to the European Parliament and Council (2002), *o.c.*, page 12

<sup>462</sup> Signed by most Member States. Already in force in Croatia, Denmark, Estonia, Finland, Romania, Slovakia, Slovenia and the United Kingdom

*i. Evaluation*

In light of our observations expressed in section 4.1.1, we deem the possible delay in publication to be of relatively minor importance. A more important advantage of the general grace period is, in our view, the protection against accidental disclosure of inventions (*i.e.*, a grace period as a "safety net") and the opportunities for inventors and companies to disclose their invention to potential investors and partners, without being penalised for such disclosure. Statistics indeed seem to point out that accidental disclosures prevent numerous patents from being filed each year<sup>463</sup>. From a researcher's point of view, we are therefore more inclined towards the harmonised introduction of a general grace period. We do appreciate, however, the concerns regarding the reduced certainty and therefore advocate additional econometrics – legal studies in this regard.

*j. Characteristics of a general grace period*

Should a general grace period be introduced in European Member States, then the most important recommendation is to have uniformed characteristics across Europe. The most fundamental drawback of the general grace period – the increased legal uncertainty – would be enlarged even further should there be inconsistencies in the application of the grace period across European Member States.

The thirty experts attending at the 2002 workshop regarding a common European view on the features of a grace period<sup>464</sup> reached a compromise in a general grace period of six months (to be calculated as from the priority date), applicable to all kinds of disclosures (whether in writing, oral, public use, by either the inventor or by any third party), with the mandatory requirement to explicitly claim the grace period at the patent application (identifying all disclosures), and accelerated publication of patent applications for which the grace period was invoked (*i.e.*, publication before the expiry of the normal period of eighteen months). This compromise is also generally in line with the recommendations from the expert opinion of Dr. Straus<sup>465</sup>.

We follow these proposed characteristics, although it should be emphasised that any characteristics should try to be harmonised at a global level. More specifically,

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<sup>463</sup> J. STRAUS, 2000, *o.c.*, section G.9.2 (the German Fraunhofer Center loses about 1/3rd of its annual inventions due to accidental pre-publications).

<sup>464</sup> Report available at [ec.europa.eu/research/era/pdf/ipr-gp-report.pdf](http://ec.europa.eu/research/era/pdf/ipr-gp-report.pdf)

<sup>465</sup> J. STRAUS, 2000, *o.c.*, section G.11.2.1

the US patent reform acts – which receives significant (international) resistance – propose a general and broad grace period (without a declaration requirement), so that the six month period agreed in the 2002 workshop may need to be extended to twelve months.

## 4.2. Quality, readability and richness of information

**Scientific quality** – Most scientific journals apply strict quality control measures for their publications, usually in the form of a peer review process. Depending on the journal, a minor or major percentage of submitted publications is rejected. While the peer review process can be quite lengthy and can take multiple months or even years (see section 4.1.1 above), it does guarantee a certain level of quality, although mistakes – or even scientific fraud – cannot be excluded.

On the contrary, patent applications are not screened for their quality or scientific merits, and are at most submitted to a novelty search. In the same line, some commentators argue that increased academic patenting and legislation such as the Bayh-Dole Act may have reinforced an already existing trend for universities to submit lower-quality patents<sup>466</sup>. Hence, researchers cannot trust the scientific quality of patents with the same amount of certainty.

**Readability** – While both patent specifications and scientific articles describe the invention and the science associated with the invention, it should be recognised that (particularly the claims section of) a patent is slow to read and often difficult to interpret. Each statement in the patent text is attentively developed, without ambiguities or second meanings, often with unfamiliar "*legalese*" wording, which makes the text difficult and monotonous to read<sup>467</sup>.

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<sup>466</sup> MOWERY and SAMPAT, 2001, *o.c.*; R. HENDERSON, A.B. JAFFE, M. TRAJTENBERG (1998), "Universities as a source of commercial technology: a detailed analysis of university patenting 1965–1988", *Review of Economics and Statistics* 80 (1), 1998, page 119–27; MOWERY and ZIEDONIS (2002), "Academic patent quality before and after the Bayh-Dole act in the United States", *Research Policy* 31:2002, pages 399–418; J. M. AZAGRA-CARO and A. ROMERO-DE-PABLOS (2006), *o.c.*, page 3;

<sup>467</sup> T.S. PEREIRA, *The challenges and threats of the commercialisation of academic research in the European Research Area. Insights from the Portuguese experience*, 2005

**Richness of information provided** – Although there are legal minimum requirements for the information set forth in patents<sup>468</sup>, the level of detail available in a patent application is often less than that required for a successful scientific publication in a peer-reviewed scientific journal<sup>469</sup>. The patent system does not give incentives to reveal more than is strictly required from a legal point of view. Even when the amount of information gathered in the research process is not sufficient for a publication in a scientific journal, researchers can submit their invention for a patent<sup>470</sup>.

Also, the future possibility to patent certain information may have an impact on current publications. For example, in a 1997 study among academic institutions, a number of respondents indicated having become more strategic in their choice of what information to disclose in their publications, to avoid the possibility of a future patent application being compromised<sup>471</sup>.

Scientific publications in peer-reviewed magazines, on the other hand, are typically required to describe the knowledge at such a level to enable other researchers to re-perform the testing procedures described in the article.

**Evaluation** – As a result, a patent specification may be less useful, or of a lesser quality, as compared to a scientific publication. Nevertheless, it should be recognised that patent specifications can be very useful for scientific researcher. However, due to the various reasons outlined above, scientific researchers under-utilise the available patent databases. This was confirmed by 90% of the correspondents to our questionnaire survey.

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<sup>468</sup> A patent application must disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (article 83 of the European Patent Convention).

<sup>469</sup> Report from the Commission to the European Parliament and Council (2002), *o.c.*, page 22

<sup>470</sup> The opposite situation can also arise, when the research has not yet reached a stage where it can be proved that the invention is capable of industrial application, but intermediate findings are interesting for publication. See [www.ipr-helpdesk.org](http://www.ipr-helpdesk.org), "Grace Period and Invention Law in Europe and Selected States"

<sup>471</sup> A. WEBSTER, and K. PACKER, "When worlds collide: patents in public sector research", In: ETZKOWITZ, H., LLEYDESDORFF, L. (Eds.), *Universities and the Global Knowledge Economy*, Pinter, London, 1997, pages 47-59.

### 4.3. Quantity of research

The question arises whether scientific papers and patents are complementary or alternative means for the diffusion of research results. In other words, do patent submissions crowd out publications at the level of researchers, or do they have a positive impact on the amount of publications generated by a researcher?

Both publication and patenting activities are similar with respect to their intellectual challenge and nature, as both require creativity, originality and novelty<sup>472</sup>. While it seems logical that patenting activities suppress publishing activities, the empirical evidence in this regard is inconclusive. Some studies find that patenting shifts research agendas towards commercial priorities and crowds out public research<sup>473</sup>. Other studies provide evidence of complementarity between publishing and patenting. According to these studies, top scientists successfully produce both research outputs<sup>474</sup>, patenting researchers are on average more productive in terms of publications than their non-patenting peers<sup>475</sup>, and patenting activities were positively correlated with paper citations<sup>476</sup>. These studies suggest that there is no substitution effect of patents for publications. Patents and publications can therefore reinforce each other and increase knowledge dissemination<sup>477</sup>.

A hypothesis worth testing is that older researchers may have the ability to publish and patent at the same time, while for young researchers, publishing activity has a greater effect than patenting on the formation of intellectual capital<sup>478</sup>.

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<sup>472</sup> B. VAN LOOY, J. CALLAERT and K. DEBACKERE, 2006, *o.c.*

<sup>473</sup> P. AZOULAY, W. DING and T. STUART, 2004, "*The impact of academic patenting on (public) research output*", 2004, page 1

<sup>474</sup> A. GEUNA and L. NESTA, *o.c.*, page 798

<sup>475</sup> P.E. STEPHAN, S. GURMU, A.J. SUMELL, G. BLACK (2007), "Who's Patenting in the University? Evidence from the Survey of Doctorate Recipients", *Economics of Innovation and New Technology*, Volume 16, Issue 2 March 2007, pages 71 - 9

<sup>476</sup> AGRAWAL and HENDERSON, "Putting Patents in Context: Exploring Knowledge Transfer from MIT", *Management Science*, 48:44-60; K.R. FABRIZIO and A. DI MININ, "Commercializing the Laboratory: The Relationship Between Faculty Patenting and Publishing", 2005; P.E. STEPHAN, S. GURMU, A.J. SUMELL, G. BLACK (2007), *o.c.*

<sup>477</sup> D. GUELLEC and B. VAN POTTELSBERGHE DE LA POTTERIE, *o.c.*, 2007, page 188

<sup>478</sup> A. GEUNA and L. NESTA, *o.c.*, page 798

#### 4.4. Reusability and privatisation of information

**Patenting implies privatisation** – By its nature, scientific knowledge is non-rivalrous, and can be reused as input for subsequent research. Patented inventions, however, can prevent follow-on researchers from exploiting scientific knowledge, unless a licence is obtained from the patent owner. Although the nature of basic scientific knowledge typically does not allow it to be patented, some basic scientific knowledge nevertheless meets the patenting requirements<sup>479</sup>. Such "*dual-purpose*" knowledge that should be in the public domain as basic scientific knowledge ("*public commons*"), is then "*captured*" by patented inventions, so that the process of cumulative scientific knowledge is undermined. This privatisation of common scientific knowledge imposes a tax on the use of the knowledge and may restrict the diffusion of that knowledge, although the consequences of the privatisation are still up for debate<sup>480</sup>.

**Traditional v. new setup** – The privatisation of knowledge is not new, and was also present in the traditional setup. However, in the traditional setup, the knowledge reuse barrier imposed by the patenting system was not problematic, since patent legislation requires the inventions to be capable of industrial application. Those inventions that were patented, clearly fell in the area of applied research, and did not prevent subsequent basic research from being performed.

In the new research setup, with blurred boundaries between basic and applied science, patents are increasingly requested for basic research, particularly when an invention can be simultaneously regarded as both basic and applied science. Such patents on basic scientific knowledge can hinder further research and risk privatising common scientific knowledge, hurting both industrial and academic researchers in the long run. This risk is emphasised by the so-called "*anti-commons*" hypothesis. The anti-commons effect is most prominently felt:

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<sup>479</sup> See the example of the oncomouse" in M.A. HELLER and R.S. EISENBERG and F. MURRAY and S. STERN (*o.c.*)

<sup>480</sup> A survey among 70 biotechnology professionals could not identify one case where research would have been cancelled due to that effect: see J.P. WALSH, A. ARORA and W.M. COHEN, "Effects of Research Tool Patents and Licensing on Biomedical Innovation" in W.M. COHEN and S.A. MERRILL (eds.), *Patents in the knowledge-based economy*

- for knowledge produced in **public entities**<sup>481</sup>, as such entities are more inclined towards basic research and they are traditionally expected to disseminate their knowledge without any restriction;
- in scientific areas where **progress** is to a large extent **cumulative**, *i.e.* where new results build upon old research results<sup>482</sup>; and
- in scientific areas where the **boundaries** between basic and applied research are blurred. This can also be evidenced by the number of patent-paper pairs<sup>483</sup>.

**Research exception** – The privatisation of common scientific knowledge has been relatively limited up to now. Also, the potential privatisation of common scientific knowledge has been partially addressed in patent law, which provides a "*research exception*" / "*experimental use exception*" for experimenting on an invention<sup>484</sup>, so that future research cannot be blocked by a patent. However, as pointed out in chapter 4, there are substantial differences in both the statutory wording of the exception and the case law, so that there is no common European view of the exception. This gives rise to a level of uncertainty on the applicability of the exception.

Harmonisation in this regard may therefore be useful, so that all Member States would recognise that experimenting with basic research inventions in a research context qualifies as an experimental act covered by the research exception. As suggested by chapter 4 on the experimental use exception, a common approach to the exception in the line with the Community Patent Convention might assist in this regard, the formulation being "*acts done for experimental purposes relating to the patented invention*". It is arguable that under this form of the exception, basic research would fall within the scope of "*acts done for experimental purposes*".

For experimenting with an invention for the purposes of basic research, it could be useful for Member States to either impose guidelines on how licences should be executed between the inventor and researchers, or even impose a mandatory licens-

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<sup>481</sup> F. MURRAY and S. STERN, 2005, page 11. See also the ground-breaking article M.A. HELLER and R.S. EISENBERG, "Can Patents Deter Innovation? The Anticommons in Biomedical Research", *Science*, 280(1 May 1998), pages 698-701

<sup>482</sup> B. VERSPAGEN, 2006, *o.c.*, referring to the example of life sciences, where the patenting of fundamental tools (e.g. sequencing) would have a negative impact on further scientific progress.

<sup>483</sup> See section 3.4.3 above

<sup>484</sup> With the exception of Belgium and Latvia, the experimental use exemption does not cover experimenting with an invention.

ing system. This way, a balance may be reached between diminishing anti-commons effects and preserving the inventor's rights. Even so, this would perhaps be difficult to implement in practice and consideration would need to be given to the requirements of Article 30 TRIPS.

Despite the existence of the research exception, there are real dangers that important portions of future scientific knowledge will be private property and fall outside the public domain<sup>485</sup>. Even though it is possible to enter into a contract with the patent owner to receive a licence to use his patented invention(s), transaction costs may become prohibitive when there are multiple patents to take into account<sup>486</sup>.

**Comparison with publications** – Since copyright does not extend to the scientific principles and ideas underlying an article, the privations of common scientific knowledge is not caused by publications in scientific journals. Publications suffer, however, from an analogue problem (the "serials crisis"), described below.

#### 4.5. The serials crisis and the open access publishing model

**Issue: access to information** – While scientific publishers are not the "owners" of the scientific information contained in the articles they publish (copyright does not protect underlying ideas), and their role is limited to the intermediary who facilitates knowledge dissemination, the role of scientific publishers in the dissemination of knowledge cannot be underestimated. Copyright legislation allows scientific publishers to prevent the scientific articles from being copied without their permission. Scientific publishers thus control the gate to scientific information, and can keep the underlying scientific knowledge hostage when the barrier imposed to access the scientific information behind the gate becomes too high.

**Serials crisis** – In the last thirty years, the prices of scientific journals have been steadily increasing. Between 1975 and 1995, they increased 200-300% beyond inflation<sup>487</sup>, in part due to the fact that the scientific publishing market has become more concentrated after acquisitions<sup>488</sup>. It has been shown that publishers with large

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<sup>485</sup> R.R. NELSON, 2004, page 1

<sup>486</sup> F. MURRAY and S. STERN (2005), page 18

<sup>487</sup> EC study on the European scientific publication market (2006), page 5

<sup>488</sup> For example, out of a total of about 5000 high-energy physics articles, more than 80% appeared in just six peer-reviewed journals from four publishers: S. MELE, "Open Access Publishing in High-Energy Physics", Proceedings ELPUB2007 Conference on Electronic



journal portfolios have an incentive to set higher prices. Because of the declining budgets and these rapidly rising subscription fees, libraries were under considerable financial strains and were forced to reduce their subscriptions.

**Reaction from publishers** – As from 1995, scientific publishers have introduced new access models to journals, by *bundling* several journals in one contract. These contracts are signed for long periods and only offer limited selection of journals in the bundle, thereby rigidifying library budgets and creating market entry barriers<sup>489</sup>.

**Counter-reaction** – Together with the introduction of the bundling models, libraries started to form consortia with other libraries to join forces in order to bargain with publishers. This "*buyer concentration*" of libraries is rather modest, however, as the publishing market does not operate under perfect market conditions<sup>490</sup>: researchers do not see the various publishers as good substitutes (being primarily concerned with the reputation and reach of the journal<sup>491</sup>) and need access to all good journals; the price of journals is unimportant for the research community<sup>492</sup>; researchers are generally happy with the service offered by publishers<sup>493</sup>; researchers are largely unaware and unconcerned about the state of scientific publishing; and the interest for researchers to publish their article is much greater than the interest of the users to read it, or the publishers to publish it<sup>494</sup>. As a result, the substitution possibilities across scientific journals are limited. Hence, library consortia only introduce a relatively weak "*buyer-power*" counterpart to the rising concentration in the publishing market<sup>495</sup>.

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Publishing, June 2007. Also: EC study on the European scientific publication market (2006), page 13

<sup>489</sup> EC study on the European scientific publication market (2006), page 9

<sup>490</sup> EC study on the European scientific publication market (2006), page 6

<sup>491</sup> The Wellcome Trust (2003), "*Economic analysis of scientific research publishing*", 2003, page iv

<sup>492</sup> The Wellcome Trust (2003), *o.c.*, page iv

<sup>493</sup> The Wellcome Trust (2003), *o.c.*

<sup>494</sup> Reflected in the "publish or perish" phrase: J. VELTEROP (2004), "Open Access: Science Publishing as Science Publishing Should Be", *Serials Review* 2004, 30:308–309, page 309

<sup>495</sup> EC study on the European scientific publication market (2006), page 7 - 8

The bundling of journals and the forming of library consortia neutralised each other's effects, and did not solve the fundamental issues in the sector. This problematic situation is commonly referred to as the "*serials crisis*"<sup>496</sup>.

**Introduction of the open access model** – The advent of the Internet has made it possible to introduce a new model to disseminate scientific knowledge: the "open access" model, which may help in solving the serials crisis. This model was first defined by the Budapest Open Access Initiative following a meeting organised in February 2002<sup>497</sup>. Subsequent initiatives such as the *Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities* confirmed the determination of individuals, research institutions and research funding bodies to disseminate knowledge on a cost-free basis.

Following these declarations and recommendations, various research funding bodies (e.g., the US National Institutes of Health, the UK Research Councils, the Wellcome Trust and CERN) have introduced policies to publish research results in open access journals<sup>498</sup>.

**Philosophy** – The philosophy underlying the open access model is to introduce barrier-free, cost-free access to scientific literature for readers. In the past, restrictions to free access of scientific publications were accepted, as the subscription model was the only practically possible option, as printed journals were the only means of disseminating validated scientific results<sup>499</sup>.

While open access advocates free *dissemination* of scientific knowledge, this does not necessarily imply that no costs are involved in the publishing process. Open access does not indulge in the illusion of an entirely cost-free publication process<sup>500</sup>. Communication of scientific results has always been paid out of research funds, one way or another, either directly or indirectly, via institutional overhead charges. That does not change in an open access model. The open access model instead focuses on

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<sup>496</sup> T. HESS, R.T. WIGAND, F. MANN and B. VON WALTER (2007), "Open Access & Science Publishing", *Management Report* 1/2007, page 1

<sup>497</sup> M. R. HAGEMANN, "Five Years on – The Impact of the Budapest Open Access Initiative", *Proceedings ELPUB2007 Conference on Electronic Publishing*, 2007, page 153;

<sup>498</sup> EC study on the European scientific publication market (2006), *o.c.*, page 6

<sup>499</sup> J. VELTEROP, 2004, *o.c.*, page 308

<sup>500</sup> T. HESS, R.T. WIGAND, F. MANN and B. VON WALTER, 2007, *o.c.*, page 1

taking the burden of costs off the subscriber's shoulders<sup>501</sup>, often by shifting the costs from the reader to the author, so that payment for the process of peer review and publishing is made on behalf of the author, rather than the reader<sup>502</sup>.

**Operating modes** – Open access publishing currently has two operating modes: the self-archiving model and the publishing model.

- In the **self-archiving model**, researchers make their articles freely accessible online – usually by posting them on a personal website, a university website or by depositing them in an online repository – after having published them in a regular subscription journal. The self-archiving model was already popular in some scientific discipline before the formal introduction of the open access movement<sup>503</sup>.
- In the **open access publishing model**, researchers only publish in open access journals, which are freely available online. Hundreds of open access journals have already been published<sup>504</sup>.

**Hybrid model** – While several existing scientific publishers have converted to the open access publishing model, such conversion may not be viable for every publisher. A third ("*hybrid*") model of open access publishing has therefore arisen. In the hybrid model, publishers offer authors the choice of paying the article processing fee and having their article made freely available online, or they can elect not to pay and then only journal subscribers will have access to their article. The hybrid model offers publishers of traditional subscription-based journals a way to experiment with open access and allow the pace of change to be dictated by the authors themselves<sup>505</sup>.

**Impact** – In its seven year existence, the open access movement has had a large impact on the scientific publishing system, judging by the growing number of open access journals, the many repositories available today and the reaction of traditional

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<sup>501</sup> T. HESS, R.T. WIGAND, F. MANN and B. VON WALTER, 2007, *o.c.*, page 1

<sup>502</sup> J. VELTEROP, 2004, *o.c.*, page 309

<sup>503</sup> E.g. the arXiv.org archive for physics, which now includes papers from related disciplines, such as computer science and mathematics, but computer scientists

<sup>504</sup> See, for example, the Directory of open access journals: [www.doaj.org](http://www.doaj.org)

<sup>505</sup> M. R. HAGEMANN, 2007, *o.c.*, page 154

(commercial and non-profit) scientific publishers who have experimented with the open access model<sup>506</sup>.

Governments and legislators are also interested in open access publishing. For example:

- the report of the **UK House of Commons** on the state of scientific publishing market (2004) concluded that the current model of scientific publishing is unsatisfactory, and recommended that the Research Councils and other government funders mandate their funded researchers to deposit a copy of all articles in repositories<sup>507</sup>;
- the 2006 study commissioned by the **European Commission**<sup>508</sup> recommended public access to publicly-funded results;
- the **European Research Advisory Board** recommended that the European Commission encourage all Member States to promote open access, and to mandate all researchers funded under FP7 to lodge their publications in an open access repository<sup>509</sup>;
- the **European Commission** announced in 2007 the inclusion of the costs of open access publishing in Community funded projects<sup>510</sup>;
- the **European Commission** launched an open access pilot in 2008 in the framework of FP7, which gives open access to research publications resulting from EU-funded research<sup>511</sup>;
- the **Council of the European Union** recommended the European Commission and the Member States to define clear policies on access to the results of pub-

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<sup>506</sup> EC study on the European scientific publication market (2006), *o.c.*, page 9; M. R. HAGEMANN (2007), *o.c.*, page 153;

<sup>507</sup> M. R. HAGEMANN, 2007, *o.c.*, page 157; "Scientific Publications: Free for all? Select Committee on Science and Technology", Tenth Report, 7 July 2004, [www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/399/39914.htm](http://www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/399/39914.htm)

<sup>508</sup> EC study on the European scientific publication market (2006), *o.c.*

<sup>509</sup> "Scientific publication: policy on open access", EURAB 06.04

<sup>510</sup> Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee on scientific information in the digital age: access, dissemination and preservation. COM(2007) 56 final, 14 February 2007. [ec.europa.eu/research/science-society/document\\_library/pdf\\_06/communication-022007\\_en.pdf](http://ec.europa.eu/research/science-society/document_library/pdf_06/communication-022007_en.pdf)

<sup>511</sup> See press release and Frequently Asked Questions at [europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/548](http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/548)

licly financed research projects, and to investigate the possibilities of open access in this regard<sup>512</sup>;

- the **OECD** recommends "open access"-like distribution mechanisms for publicly funded research<sup>513</sup>;
- following its December 2006 statement on the attractiveness of open access, the **European Research Council** requires<sup>514</sup> that all peer-reviewed publications from research projects funded by it, be deposited on publication into an appropriate open access repository;
- it was reported by the National Correspondent from **Germany** that in the scope of the reform of the German Copyright Act, there were discussions about better integration of open access / publishing models (e.g., a proposal to allow publication in non-commercial environments six months after publication);
- as for the **United States**, a 2006 bill for the "*Federal Research Public Access Act*" intends to strike a reasonable balance among the competing needs of publishers, authors and the public at large; and
- various research institutions and research funding bodies mandate open access: examples include the US National Institute of Health<sup>515</sup>, the Wellcome Trust<sup>516</sup> and various UK institutions<sup>517</sup>, Harvard University<sup>518</sup>.

While the impact factor of open access journals still needs improvement (as outlined in the discussion below), several examples of successful open access journals exist. PLoS Biology, for example, is ranked as the most highly cited general biology journal with an impact factor of 14.7<sup>519</sup>. Other studies indicate that articles freely available online are more highly cited<sup>520</sup>, and that the attitude of researchers toward

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<sup>512</sup> Council Conclusions on scientific information in the digital age: access, dissemination and preservation, 2832nd Competitiveness (Internal market, Industry and Research) Council meeting, Brussels, 22 and 23 November 2007

<sup>513</sup> See *OECD principles and guidelines for access to research data from public funding*, 2007, available at [www.oecd.org/dataoecd/9/61/38500813.pdf](http://www.oecd.org/dataoecd/9/61/38500813.pdf)

<sup>514</sup> ERC Scientific Council Guidelines for Open Access, 17 December 2007

<sup>515</sup> See [publicaccess.nih.gov](http://publicaccess.nih.gov)

<sup>516</sup> See [www.wellcome.ac.uk/doc\\_wtd002766.html](http://www.wellcome.ac.uk/doc_wtd002766.html)

<sup>517</sup> See [ukpmc.ac.uk](http://ukpmc.ac.uk)

<sup>518</sup> See [www.fas.harvard.edu/home/news\\_and\\_events/releases/scholarly\\_02122008.html](http://www.fas.harvard.edu/home/news_and_events/releases/scholarly_02122008.html)

<sup>519</sup> See overview of PLoS Journals: [www.plos.org/journals/index.html](http://www.plos.org/journals/index.html)

<sup>520</sup> S. LAWRENCE, 2001, *o.c.*

open access is highly positive<sup>521</sup>, particularly due to the perceived higher speed of publication<sup>522</sup>.

**Criticism** – Large publishers' associations have generally shown resistance to the open access publishing model. The open access initiative received stiff criticism from publishers' associations when it was announced in February 2002, warning that the proposed publishing model would not be a viable alternative to fund the publication of content, and that problems would arise in the long tem.

Indeed, while there seems to be substantial agreement on the philosophical principles underlying the open access movement, some issues remain to be solved:

- **Critical mass** – While the attitude of researchers towards open access is very positive, only a limited number of researchers have actually experienced (or plan on) publishing in open access media<sup>523</sup>. The impact factor of open access journals, which remains the most critical criterion for researchers when deciding where to publish, is perceived as less than the impact factor of traditional scientific journals<sup>524</sup>.
- **Economic viability** – Not all researchers are convinced of the viability of the open access economic model<sup>525</sup>.
- **Long-term reliability** – the long-term preservation of electronic publications is perceived as a problem<sup>526</sup>. The 2006 EC report on the scientific publication market recommends in this regard the promotion of not-for-profit long-term preservation archives that balance interests among publishers, libraries and scholars.

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<sup>521</sup> T. HESS, R.T. WIGAND, F. MANN and B. VON WALTER, 2007, *o.c.*, page 8; EC study on the European scientific publication market (2006), *o.c.*, page 9 (a majority of researchers are willing to self-archive if induced by their employer or funding body)

<sup>522</sup> T. HESS, R.T. WIGAND, F. MANN and B. VON WALTER, 2007, *o.c.*, page 9

<sup>523</sup> T. HESS, R.T. WIGAND, F. MANN and B. VON WALTER, 2007, *o.c.*, page 8

<sup>524</sup> 60% of the surveyed participants think that publishing in open access media has a negative impact on gaining promotion, 58% perceive the impact factor as a barrier, and 51% stated that open access is not well-known enough to use it as a medium for publishing their own work: T. HESS, R.T. WIGAND, F. MANN and B. VON WALTER, 2007, *o.c.*, page 9

<sup>525</sup> 53% of surveyed participants think that open access publications lack a guarantee of long-term availability: T. HESS, R.T. WIGAND, F. MANN and B. VON WALTER, 2007, *o.c.*, page 10

<sup>526</sup> EC study on the European scientific publication market (2006), *o.c.*, page 11

**Recommendations** – There is an important role for funding bodies to define policies which will improve access and dissemination of publications, as they have a central role in determining researchers' publishing practices. They should therefore promote and support the archiving of publications in open repositories<sup>527</sup>. While scientific quality, approximated for example by citation counts, should remain the dominant criterion, dimensions related to the quality of dissemination (self-archiving authorisation, publisher archiving provisions, copyright provisions, abstracting and indexing services, reference linking, etc.) could be tracked explicitly and possibly valued by research funding bodies<sup>528</sup>.

## 5. Recommendations

- As patenting and publishing are complementary activities, the purpose of this chapter is not to make a selection between patenting or publishing, but rather to investigate which bottlenecks currently exist and should be removed to foster a better dissemination of knowledge. We see two such major bottlenecks: the "*anti-commons effect*" (the privatisation of basic scientific knowledge) and the "*serials crisis*" (increased prices and non-free availability of scientific information).
- In order to assist in solving the **anti-commons effect**, it may be useful to ensure that, at least in respect of patents, there is a consistent application of the experimental use exception amongst Member States. As suggested by chapter 4, a common approach to the exception in the line with the Community Patent Convention might assist in this regard, the formulation being "*acts done for experimental purposes relating to the patented invention*". It is arguable that under this form of the exception, basic research would fall within the scope of "*acts done for experimental purposes*".
- As regards the purposes of the basic research, this could be carried out in relation to the "patented invention". For basic research that is not carried out for this purpose, perhaps guidelines or a mandatory licensing system could be introduced. Even so, this would perhaps be difficult to implement in practice, and consideration would need to be given to the requirements of Article 30 TRIPS.
- We note the efforts of the European Commission, the research funding institutes and various policy-related institutions to promote the use of open access

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<sup>527</sup> EC study on the European scientific publication market (2006), *o.c.*, page 11

<sup>528</sup> EC study on the European scientific publication market (2006), *o.c.*, page 12

journals, thereby combating the serialisation crisis. In particular, we think that the "*author pays*" model for the dissemination of scientific knowledge solves part of the **serials crisis**. Further efforts should be delivered in this regard, both on a national, European and international level. Coupled with this, greater, researcher awareness of open access journals should be encouraged. 68% of the correspondents to our own questionnaire survey agreed or strongly agreed with this recommendation, while only 11% disagreed.

- As regards the controversial debate regarding the introduction of a **general grace period**, we are of the opinion that the balance of the advantages and disadvantages associated with such introduction, is not clear. In light of the limited statistical figures available, we think no convincing arguments exist that obviously render either option more preferable than the other option. If, however, the balance on an international level would tilt towards a general grace period – *e.g.*, due to changes in US patent law – we would find the introduction on an EU level to also be acceptable, as a general grace period can provide a safety net for inadvertent disclosures and allow researchers and companies to disclose their inventions to potential investors and partners, without being penalised under patent law. It is highly questionable, however, whether the proposed changes in the US patent law will eventually be adopted.
- As may be evident when looking at the content of this chapter, the issue of patenting vs. publishing entails multiple other (often fundamental) issues in the area of patent law, public research policy, budgeting and incentivisation of researchers. Any discussion should be situated in such widened context.
- We think the following separate studies might prove useful to provide a better insight in the publishing vs. patenting debate:
  - the use of publicly available patent specifications by academic researchers and industry researchers, including their appreciation of the quality of patents and the facilities offered by the available databases; and
  - statistical data about cases where patent claims were denied (or narrowed down) due to a lack of novelty or inventive step.





# Chapter 6

## Technological know-how

"Most European countries have developed legislation to protect technological *"trade secrets"* or *"know-how"* which are not protected by formal IP mechanisms such as patents or copyright. However, regarding this topic as well, the legal situation varies considerably from one Member State to the other, potentially resulting again in a detrimental lack of uniformity."

### 1. Structure of this chapter

In this chapter, we first consider the concept and typical characteristics of the legislation applicable to technological know-how in section 2.

In section 3, we review the existing laws of the Member States and related EU and international laws.

In section 4, we provide an overview of the law as it stands in the United States and Japan for comparative purposes.

In section 5, we provide an assessment of the practical impact of legislation applicable to technological know-how by reference to existing studies and the results of our survey of relevant stakeholders.

In section 6 we analyse our findings.

In section 7 we provide a summary of our conclusions.

In section 8 we provide our recommendations.

## 2. The concept of technological know-how

### 2.1. Introduction

Technological know-how is not a term that is common usage and falls to be considered within the wider context of the protection of confidential information and trade secrets. As noted by the Canadian Report on Trade Secrets, in the context of categories of trade secrets:

*"The second category involves technological secrets. Every business enterprise uses a combination of labour, energy and raw materials to produce some product or service. Faced with soaring costs for all three items, contemporary businesses rely on technology to reduce costs and increase productivity. The ability of an enterprise to do well or even survive in today's highly competitive climate is directly related to its success in acquiring, protecting and exploiting some aspect of modern technology. Knowledge of these processes that increase efficiency is usually referred to as technological "know how".<sup>529</sup>*

In the EU, the scope of protection of technological know-how depends on the extent to which it falls within the specific protection afforded by Member States either in the context of specific laws regarding, for example, trade secrets or in the context of laws on unfair competition.

Technological know-how is not protected as an intellectual property right as such but is a complementary right. It is clear that technological know-how may be patentable. If so, an owner will have the option, where trade secret protection is sufficient, to either patent the technological know-how or to keep it secret. Indeed,

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<sup>529</sup> Institute of Law Research and Reform, Edmonton, Alberta and A Federal Provincial Working Party "Trade Secrets" Report No. 46, July 1986, page 37

there may be occasions where trade secret protection is preferable for a business to patent protection (which is necessarily limited in time). If the technological know-how is not patentable, for whatever reason, the owner will not have this option. It is here that proper trade secret protection most complements the patent system.

Further, copyright may be useful in the protection of technological know-how if documents comprising the technological know-how have been copied (and this can be demonstrated) but generally copyright protection will be of limited use as it protects the expression of information rather than information itself.

However, the reasons for protecting information such as technological know-how can be quite similar to the reasons for protecting IPR.

Like IPR, the protection of technological know-how is intended to act as an incentive for parties to conduct research and development and innovate in a competitive but secure environment. The downside to this approach, which, unlike patent law, does not require disclosure, can be the added costs and expense of third parties duplicating research or, for example, of conducting reverse engineering in order to discover the confidential (technological) know-how.

Furthermore, the interest of the owner in information such as technological know-how is similar to that of a property right: it is generally something that can be assigned and licensed and is considered proprietary by its owners.

## 2.2. Typical characteristics

The following typical characteristics are found in Member States which recognise some form of protection for know-how, trade secrets or similar concepts. The reader is referred to section 3 for a detailed discussion of the specific characteristics found in each Member State.

### 2.2.1. Subject Matter

The nature of the subject matter covered varies from Member State to Member State. For example, it is found as:

- *"specific, proper, non-apparent business data"* in Austria;
- *"commercial, manufacturing and technological information"* in the Czech Republic;
- *"[information] relating to a commercial business"* in Denmark;

- *"business or professional secrets or other corresponding business information"* in Finland;
- *"knowledge regarding the manufacturing of products, marketing of goods and services as well as the management and financing of companies"* and industrial processes in France;
- *"secret information and non-patented inventions"* in Italy;
- *"economic, technical and organisational knowledge and experience"* in respect of all know-how and *"all facts, information, solutions or data pertaining to business activities"* in respect of trade secrets in Hungary;
- *"information of an economic, technical or scientific nature, recorded in writing or by other means, or not recorded, held or associated with the undertaking of a merchant"* in Latvia;
- *"information"* in Lithuania;
- *"information of a trading, manufacturing and technological nature related to a business"* in Slovakia; and
- *"information regarding a business"* in Sweden.

### 2.2.2. Value

Many Member States require that the protected subject matter must have some value. For example, the protected subject matter generally must:

- have *"actual or potential, material or non-material"* value in the Czech Republic;
- be of a type *"which a person is willing to pay money for"* in France;
- have *"economic value"* in Italy;
- have *"pecuniary value"* in Hungary<sup>530</sup>;
- have *"actual or potential financial or non-financial value"* in Latvia;
- have *"real or potential, commercial value"* in Lithuania;
- have *"commercial value for being secret"* in Portugal; and
- have *"actual, or at least potential, tangible or intangible value"* in Slovakia.

### 2.2.3. Secret

A key factor for protection in Member States is the requirement that the protected subject matter be secret. This is found as a requirement that the protected subject matter be:

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<sup>530</sup> In respect of know-how only.

- *"not apparent"* in Austria;
- *"not commonly available in the relevant market"* in the Czech Republic;
- *"not normally known to the general public"* in Denmark;
- *"secret"* in Finland;
- *"not immediately accessible to the public" or "known to only one or very few industrial actors"* in France;
- *"secret information not known by and not available to the public"* in Italy;
- *"not part of the public domain"* in respect of know-how in Hungary;
- *"not generally accessible to third persons"* in Latvia;
- *"not known to third parties"* in Lithuania;
- *"not of general knowledge or easily accessible"* in Portugal; and
- *"not normally available in the respective business field"* in Slovakia; and
- *"secret"* in Sweden.

#### 2.2.4. Protective measures must be taken

Many Member State laws require that the party who owns the protected subject matter must have taken protective measures to keep the protected subject matter secret. This requirement takes several forms. For example, it is a requirement that:

- it be *"protected in a suitable manner"* in the Czech Republic;
- it is *"that [which] a businessman keeps secret"* in Finland;
- *"that the owner has taken all necessary steps to keep such information confidential"* in respect of trade secrets in Hungary;
- *"adequate measures [exist] aimed at maintaining secrecy"* in Italy;
- the merchant has *"taken reasonable measures to preserve the secrecy thereof"* in Latvia;
- it is not *"freely accessible because of the reasonable efforts of the owner of such information... to preserve its confidentiality"* in Lithuania;
- it has been *"subject to considerable efforts by the interested party to keep them secret"* in Portugal;
- the entrepreneur has *"adequately secured their confidentiality"* in Slovakia; and
- *"the trader keeps [it] secret"* in Sweden.

### 2.2.5. Unfair competition

Other Member States, broadly in line with the requirements of TRIPS<sup>531</sup>, protect know-how via unfair competition laws. Some of these Member States therefore refer in general to the prohibition on unfair competition rather than specifically identifying the protection of know-how. These Member States include Austria, Belgium, Estonia, Finland, Germany, Italy, Luxembourg and Spain.

### 2.2.6. Breach of confidence

In Ireland and the United Kingdom, know-how may be protected by the law of breach of confidence which does not define know-how, trade secret or other similar terms as such.

## 3. The current situation in the EU

### 3.1.1. Legal background

Other than in respect of the Research and Development Block Exemption Regulation and the Technology Transfer Block Exemption Regulation,<sup>532</sup> the EU has not legislated in the area of technological know-how. However, there are legal reasons why there is some degree of uniformity in Member States' laws regarding the protection of know-how and trade secrets especially in the context of unfair competition as set out below.

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<sup>531</sup> In line with Article 39 TRIPS which provides, *inter alia*, that in the course of ensuring effective protection against unfair competition, Members shall protect undisclosed information in accordance with Articles 39(2) and 39(3) TRIPS. For further details, please see section 3 of this chapter.

<sup>532</sup> Commission Regulation (EC) No 2659/2000 on the application of Article 81(3) of the Treaty to categories of research and development agreements and Commission Regulation (EC) No 772/2004 on the application of Article 81(3) of the Treaty to categories of technology transfer agreements. See section 6.2.2 of this chapter for more information.

a. *Paris Convention*

Article 10*bis* of the Paris Convention for the Protection of Industrial Property<sup>533</sup> provides that:

- (1) *The countries of the Union are bound to assure to nationals of such countries effective protection against unfair competition.*
- (2) *Any act of competition contrary to honest practices in industrial or commercial matters constitutes an act of unfair competition.*
- (3) *The following in particular shall be prohibited:*
  1. *all acts of such nature as to create confusion by any means whatever with the establishment, the goods, or the industrial or commercial activities, of a competitor;*
  2. *false allegations in the course of trade of such a nature as to discredit the establishment, the goods, or the industrial or commercial activities, of a competitor;*
  3. *indications or allegations the use of which in the course of trade is liable to mislead the public as to the nature, the manufacturing process, the characteristics, the suitability for their purpose, or the quantity, of the goods.*

b. *TRIPS Agreement*

Article 39 TRIPS states that:

1. *In the course of ensuring effective protection against unfair competition as provided in Article 10bis of the Paris Convention (1967), Members shall protect undisclosed information in accordance with paragraph 2 and data submitted to governments or governmental agencies in accordance with paragraph 3.*
2. *Natural and legal persons shall have the possibility of preventing information lawfully within their control from being disclosed to, acquired by, or used by others without their consent in a manner contrary to honest commercial practices*<sup>534</sup> *so long as such information:*

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<sup>533</sup> Paris Convention for the Protection of Industrial Property of March 20, 1883 as revised at Brussels on December 14, 1900, at Washington on June 2, 1911, at The Hague on November 6, 1925, at London on June 2, 1934, at Lisbon on October 31, 1958, and at Stockholm on July 14, 1967, and as amended on September 28, 1979.

<sup>534</sup> For the purpose of this provision, "a manner contrary to honest commercial practices" shall mean at least practices such as breach of contract, breach of confidence and inducement to



*(a) is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question;*

*(b) has commercial value because it is secret; and*

*(c) has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.*

*3. Members, when requiring, as a condition of approving the marketing of pharmaceutical or of agricultural chemical products which utilise new chemical entities, the submission of undisclosed test or other data, the origination of which involves a considerable effort, shall protect such data against unfair commercial use. In addition, Members shall protect such data against disclosure, except where necessary to protect the public, or unless steps are taken to ensure that the data are protected against unfair commercial use.*

c. *Member States*

**Austria** – In Austria, there is no specific statutory protection of know-how as such but protection can be achieved by entering into a binding contract before disclosure. Trade secrets in general, which includes both technical information and commercial information, are protected under the Austrian Unfair Competition Act<sup>535</sup>. However the scope of protection of technical information (technical documents or instructions) is wider under the Austrian Unfair Competition Act than for other trade secrets. Disclosure without authorisation is subject to civil sanctions. Disclosure without authorisation of any technical documents or requirements entrusted to a person in the course of business may be subject to criminal sanctions including a fine or imprisonment. These rules also apply to employees.

**Belgium** – In Belgium, there is no specific legislation which governs the protection of confidential information, trade secrets or know-how. However, civil protection is afforded to know-how under general provisions of the Civil Code<sup>536</sup> and the Fair

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breach, and includes the acquisition of undisclosed information by third parties who knew, or were grossly negligent in failing to know, that such practices were involved in the acquisition.

<sup>535</sup> "UWG" or "*Gesetz gegen den unlauteren Wettbewerb*"

<sup>536</sup> Article 1382

Trade Practices Act<sup>537</sup>. Criminal protection only applies in limited circumstances usually relating to specific professions. Specific laws<sup>538</sup> apply to employees restricting use of company secrets, trade secrets or secrets with respect to personal and confidential matters of which they obtain knowledge through their profession, both during and after employment. Protection of know-how can be achieved by entering into a binding contract before disclosure.

**Cyprus** – The position in Cyprus is quite distinct from most other Member States in that it was reported that there is no relevant legislation or common law principles that apply. However, as a common law jurisdiction, English decisions on the matter will be of highly persuasive authority. Therefore, while there is no court precedent, the UK law of confidence might be applied in the future. Know-how in Cyprus is protected by entering into a binding contract before disclosure.

**Czech Republic** – In the Czech Republic, trade secrets and know-how are protected under the Commercial Code<sup>539</sup> with civil sanctions attaching to breach. The Criminal Code<sup>540</sup> provides for fines and for imprisonment terms of one to twelve years. Employees are covered by the general terms of the Labour Code and know-how can be protected by entering into a binding contract before disclosure.

**Denmark** – The Marketing Act is the principal act protecting know-how in Denmark. The Danish Marketing Act, section 19, protects knowledge and trade secrets vis-à-vis employees, consultants and co-operators<sup>541</sup> who have lawfully acquired them. Breach of this obligation can result in civil and criminal sanctions. However, it was reported that 'scientific work' is not protected under the Marketing Act. Protection of know-how can be achieved by entering into a binding contract before disclosure.

**Estonia** – In Estonia, there is no specific statutory protection for know-how, confidential information or trade secrets as such. It appears that some protection is afforded by the Competition Act 2001 which provides that the misuse of unlawfully

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<sup>537</sup> Article 93

<sup>538</sup> Act regarding Employment Agreements

<sup>539</sup> Art. 17-20, 51

<sup>540</sup> Sections 128-149

<sup>541</sup> The term "*co-operator*" is intended to mean "*business partner*" or a similar term referring to any person (physical or legal) which co-operates with the person who has the knowledge in question, e.g. in connection with a research or development project.

obtained confidential information regarding a competitor can amount to unfair competition. Employees are only prevented from disclosing or using know-how or trade secrets if prevented from doing so under the relevant employment agreement<sup>542</sup>. As with other Member States, protection of know-how can be achieved by entering into a binding contract before disclosure.

**Finland** – In Finland, there is no specific statutory protection for know-how, confidential information or trade secrets but know-how and trade secrets are protected by a number of other statutes. They are protected as "business secrets" under the Unfair Business Practices Act<sup>543</sup> and, in respect of employees, under the Employment Contracts Act<sup>544</sup>. Employee obligations end on termination of the employment relationship (although a two-year post-termination period may apply under the Penal Code). Damages may be claimed for breach under the Damages Act only where there are especially weighty reasons for compensation. There are both civil and criminal sanctions available. Know-how can be protected by entering into a binding contract before disclosure.

**France** – In France, there is no specific statutory protection for know-how, confidential information or trade secrets. A claim may lie in tort<sup>545</sup> or contract (if there is privity) for the misappropriation or misuse of know-how (*savoir faire*) or manufacturing secrets (*secrets de fabrique*). Criminal sanctions may apply in respect of the misappropriation of manufacturing secrets<sup>546</sup> but not in respect of the misappropriation of know-how. Employees are also bound not to disclose know-how both during and after their employment. Know-how can be protected by entering into a binding contract before disclosure.

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<sup>542</sup> According to the new Employment Contracts Act, entering into force on 1 July 2009, the employer has the right to determine the information that is to be considered a trade secret and must be held confidentially. The parties may agree upon a contractual penalty to be paid if the employee is in breach of the confidentiality obligation. The employer will have the right to claim compensation for damages not covered by the contractual penalty.

<sup>543</sup> Section 4. "Business Secret" is defined under the Penal Code, however, and not the Unfair Business Practices Act.

<sup>544</sup> Chapter 3, Section 4

<sup>545</sup> Sections 1382 et seq. of the French Civil Code.

<sup>546</sup> Art. L.621.1 of the IPC

**Germany** – In Germany, know-how is protected as a trade secret<sup>547</sup> under the Unfair Competition Act<sup>548</sup> which contains criminal sanctions<sup>549</sup>. Civil sanctions may apply<sup>550</sup>. Generally, an employee is entitled to pass on know-how (s)he has lawfully obtained after but not before termination of the employment relationship (unless prohibited by contract). Know-how can be protected by entering into a binding contract before disclosure.

**Greece** – In Greece, trade secrets, confidential information and know-how are protected by Law 146/14 on Unfair Competition<sup>551</sup>. The law primarily applies to employees and therefore may be of limited value but penalties may apply to any person who makes unauthorised use of secrets for competition purposes and has knowledge of the secret, through his or her own acts, in violation of law or moral principles. Civil and criminal sanctions apply. Know-how may be protected by entering into a binding contract before disclosure.

**Hungary** – In Hungary, know-how may be protected under S.86(4) of the Civil Code which protects *"economic, technical and organisational knowledge and experience that has pecuniary value"*. Know-how may also be protected as a 'trade secret' under S.81(1) of the Civil Code and under Act 57 of 1996 on the Prohibition of Unfair Competition. Employees are subject to general obligations to protect trade secrets under S.103(3) of the Hungarian Labour Code and trade secrets may be protected by entering into a binding contract before disclosure. Criminal sanctions may apply under S300(1) of the Hungarian Criminal Code.

**Ireland** – In Ireland, know-how is protected under the law of confidence which is an equitable remedy applied by a court on a case-by-case basis (the principle of *stare decisis* applies in Ireland). Know-how will be protected where there is an obligation of confidence and the know-how in question is confidential. The law is similar to that of the United Kingdom as outlined below. There is an obligation of confidence

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<sup>547</sup> There is no statutory definition of "trade secret". According to case law, the term refers to any information, procedure and/or circumstance in relation to a business operation that is only accessible to a limited number of persons, that remains secret according to the express or implied will of the owner of such operation and whose secrecy is of justified business interest.

<sup>548</sup> See sections 17 and 18 of the *Gesetz zum Schutz gegen den unlauteren Wettbewerb*, "UWG".

<sup>549</sup> *Ibid* and Section 242 Criminal Code (theft)

<sup>550</sup> Section 823 Civil Code

<sup>551</sup> Articles 16-18

on employees which survives termination of the employment relationship. It is normal to protect the disclosure of know-how in Ireland by entering into a binding contract before disclosure.

**Italy** – In Italy, know-how is protected under the Italian Civil Code under general provisions relating to unfair competition and specifically where it is secret, it has economic value and it is subject to measures aimed at maintaining secrecy<sup>552</sup>. Criminal sanctions can apply to misuse under the Italian Criminal Code<sup>553</sup>. Employees are obliged to keep know-how secret during their employment<sup>554</sup> and this may be extended by contract to apply post-employment (subject to restrictions)<sup>555</sup>. Know-how may be protected by entering into a binding contract before disclosure.

**Latvia** – In Latvia, know-how, or commercial secrets, are protected by Section 19 of the Commercial Law<sup>556</sup>. Economic, technical or scientific information is protected if it is associated with an undertaking, is not generally accessible, has actual or potential value in respect of which the owner has taken reasonable measures to preserve its secrecy and by coming into the disposition of any person it may cause loss to the owner. Employees are under a duty not to disclose any information brought to his/her attention, which is a commercial secret of the employer. However, the employer has a duty to indicate in writing what information is to be regarded as a commercial secret<sup>557</sup>. Know-how may be protected by entering into a binding contract before disclosure. Criminal sanctions may apply<sup>558</sup>.

**Lithuania** – In Lithuania, know-how or commercial secrets are protected by the Lithuanian Civil Code<sup>559</sup> and the Law on Competition<sup>560</sup>. Under the Law on Competition, commercial secrets may not be disclosed without the owner's consent. In order to bind employees to confidentiality obligations, employers must identify the information to be kept confidential and notify this to employees and enter into

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<sup>552</sup> Sections 98,99 and 2598

<sup>553</sup> Section 623

<sup>554</sup> Section 2105

<sup>555</sup> Section 2125

<sup>556</sup> Section 19

<sup>557</sup> Labour Law, section 83

<sup>558</sup> Criminal Law, section 200

<sup>559</sup> See Articles 1.116 and 6.669

<sup>560</sup> See Article 16

appropriate confidentiality provisions. Know-how can be protected by entering into a binding contract before disclosure. Criminal sanctions may apply to the unlawful acquisition or transfer of a commercial secret.

**Luxembourg** – In Luxembourg, there is no specific legislation relating to the protection of confidential information, trade secrets or know-how. However, protection is afforded under contract, labour and fair trade practices acts<sup>561</sup>. Employees are obliged to maintain know-how secret both during and after employment<sup>562</sup>. Know-how can be protected by entering into a binding contract before disclosure. Criminal sanctions may apply<sup>563</sup>.

**Malta** – Together with Cyprus, minimal protection is afforded to know-how in Malta. It is possible that relevant provisions of the Professional Secrecy Act might be extended to cover confidential know-how but this is not certain. However, protection can be sought by entering into binding contracts before disclosure but this approach has never been tested before the Maltese courts.

**Netherlands** – There is no specific legislation in the Netherlands which governs the protection of confidential information, trade secrets or know-how. However, know-how may be protected under Tort Law (unfair competition)<sup>564</sup>. Criminal sanctions may apply<sup>565</sup>. An employee is required to keep company information confidential<sup>566</sup>. Know-how can be protected by entering into a binding contract before disclosure.

**Poland** – In Poland, know-how may be protected under the Unfair Competition Act<sup>567</sup> which prohibits the transfer, disclosure or use of another party's trade secrets

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<sup>561</sup> See Art. 14 of the Law of July 30, 2002

<sup>562</sup> Article 1134 of the Civil Code and Employment Court Luxembourg, 4 October 1991, No. 3046/91.

<sup>563</sup> Article 309 Criminal Code

<sup>564</sup> For example, it can be tortious to use know-how which was provided within a certain relationship, if the receiver of the know-how should have understood that, in the circumstances, the know-how was not to be used outside the relationship, i.e. for the development by the receiver of its own product. Another example of an act of unfair competition is to use know-how which has been obtained through unseemly behaviour (i.e. espionage, theft, bribery, etc.)

<sup>565</sup> Sections 272 & 273 Penal Code

<sup>566</sup> Section 7:678 ss 2 sub i BW, Civil Code

<sup>567</sup> Section 11, Act of 16 April 1993

if it poses a threat to or violates another's interests. Employees are bound by duties of confidentiality to their employer and the provisions of the Unfair Competition Act apply for a period of three years post-termination of the relationship. Know-how can be protected by entering into a binding contract before disclosure. Criminal sanctions may apply.

**Portugal** – In Portugal, the unauthorised disclosure, acquisition or use of trade secrets from a competitor is unfair competition subject to a fine under Article 318 of the Portuguese Intellectual Property Code. Employees are subject to secrecy obligations relating to the production methods, business and organisational aspects of the employer which includes know-how under Article 121.1(e) of the Portuguese Labour Code. It is standard practice to include a term in employment agreements that these secrecy obligations survive termination of the employment relationship. Know-how can be protected by entering into a binding contract before disclosure.

**Slovakia** – In Slovakia, know-how may be protected for so long as it is a "business secret" within the meaning of the Commercial Code. This may have limitations where the know-how does not relate to a business (enterprise). Criminal sanctions may apply for breach under the Criminal Code<sup>568</sup>. Under the Labour Code, employees are subject to confidentiality obligations relating to information entrusted to them as part of the employment relationship. Know-how can be protected by entering into a binding contract before disclosure.

**Slovenia** – In Slovenia, know-how is protected under the Companies Act<sup>569</sup> which prevents third parties from disclosing a business secret of a company where they were aware or should have been aware that the data was a business secret. Know-how may also be protected under the general provisions of the Civil Code<sup>570</sup>. Employees are under a duty to protect the business secrets of his/her employer<sup>571</sup> and know-how can be protected by entering into a binding contract before disclosure. Criminal sanctions may apply under the Penal Code.

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<sup>568</sup> Section 264

<sup>569</sup> The company should prepare a written resolution by which the method of protecting business secrets and the responsibility of persons obliged to protect business secrets shall be determined. The partners, employers etc. and other persons obliged to protect business secrets shall be aware of the resolution.

<sup>570</sup> Article 10, Article 715

<sup>571</sup> Employment Relations Act

**Spain** – In Spain, know-how may be protected under the Unfair Competition Act<sup>572</sup> where the exploitation or disclosure, without authority, of trade secrets or any other business secrets legally obtained but subject to a confidentiality obligation, or illegally obtained as a result of espionage or similar acts or inducement of breach of contract, is deemed to be unfair competition. Employees are subject to these general obligations of confidence in respect of trade or business secrets<sup>573</sup>. Know-how can be protected by entering into a binding contract before disclosure. Criminal sanctions may apply<sup>574</sup>.

**Sweden** – In Sweden, know-how may be protected under the Act on Trade Secrets. The intentional or negligent use or disclosure of a trade secret may be subject to sanction and the use or disclosure of an unlawfully obtained trade secret may also be subject to sanction in accordance with the Act on Trade Secrets. Employees are subject to obligations of non-disclosure in respect of trade secrets: he or she must not reveal trade secrets which he or she had received knowledge of in the course of employment and under such circumstances that he or she understood, or ought to have understood, that he or she was not allowed to reveal it. Know-how can be protected by entering into a binding contract before disclosure. Criminal sanctions may apply.

**United Kingdom** – In the United Kingdom, know-how may be protected under the law of confidence, an equitable remedy similar to that which exists in Irish law. Generally, three elements are required to establish a duty of confidence, namely the information must have the necessary quality of confidence about it, the information must be imparted in circumstances importing an obligation of confidence and the information must be used in an unauthorised manner. Confidence obligations apply to employees both during and post-termination of employment though the standard is lower post-termination of employment. Know-how can be protected by entering into a binding contract before disclosure.

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<sup>572</sup> Article 13, Article 14

<sup>573</sup> Article 5.1(a) of the Workers Statute

<sup>574</sup> Section X, Chapter 1, Criminal Code.



Fig. 1: Overview

	Distinction know-how & technological know-how	Protected Protected under Unfair Competition / Fair Trade Practices Laws	Protected under Other Statutes	Protectable Under Laws of Confidence	Protected under Contract Law (NDAs)	Employee Obligations	Criminal Sanctions
Austria	■	■			■	■	■ Employees
Belgium		■	■ Civil Code		■	■	■ Very limited cases only
Cyprus				No Court Precedent, however	■		
Czech Republic		■	■ Commercial Code		■	■ Labour Court	■
Denmark		■ Distinction in respect of 'scientific work'	■ Marketing Act		■	■	■

	Distinction know-how & technological know-how	Protected Protected under Unfair Competition / Fair Trade Practices Laws	Protected under Other Statutes	Protectable Under Laws of Confidence	Protected under Contract Law (NDAs)	Employee Obligations	Criminal Sanctions
Estonia		■			■	■ Optional	■
Finland		■	■ Penal Code		■	■ Employment Contracts Act	■
France			■ Civil Code		■	■	■ In respect of "secret de fabrique"
Germany		■	■ Civil Code		■	■	■
Greece		■			■	■	■
Hungary		■	■ Civil and Criminal Codes		■	■ Labour Court	■

## Technological know-how

	Distinction know-how & technological know-how	Protected Protected under Unfair Competition / Fair Trade Practices Laws	Protected under Other Statutes	Protectable Under Laws of Confidence	Protected under Contract Law (NDAs)	Employee Obligations	Criminal Sanctions
Ireland				■	■	■	
Italy			■ Civil Code		■	■ Civil Code	■
Latvia			■ Commercial Law		■	■	■
Lithuania		■	■ Civil Code		■	■	■
Luxembourg		■	■ Contract and Labour Laws		■	■	■
Malta					■		

	Distinction know-how & technological know-how	Protected Protected under Unfair Competition / Fair Trade Practices Laws	Protected under Other Statutes	Protectable Under Laws of Confidence	Protected under Contract Law (NDAs)	Employee Obligations	Criminal Sanctions
Netherlands			■ Tort Law		■	■	■
Poland		■	■ Protection of Confidential Information Act / Labour Code / Civil Code		■	■	■
Portugal			■ Intellectual Property		■	■ Labour Court	■
Slovakia		■	■ Commercial Code		■	■	■

Technological know-how

	Distinction know-how & technological know-how	Protected Protected under Unfair Competition / Fair Trade Practices Laws	Protected under Other Statutes	Protectable Under Laws of Confidence	Protected under Contract Law (NDAs)	Employee Obligations	Criminal Sanctions
Slovenia			■ Employment, Civil and Companies		■	■	■
Spain			■ Act on Trade Secrets		■	■	■
Sweden			■ Act on Trade Secrets		■	■	■
UK				■	■	■	

## 4. The current situation in the United States and Japan

### 4.1. United States

Generally, trade secrets are protected by State law (as opposed to federal law) in the United States. However, the Uniform Trade Secrets Act, which provides a definition of a "trade secret", has been adopted in over forty US States.<sup>575</sup>

The Uniform Trade Secrets Act defines as a trade secret as:

*Information, including a formula, pattern, compilation, program, device, method, technique or process that:*

*(i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and*

*(ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.*

Furthermore, "misappropriation" of a trade secret means:

*(i) acquisition of a trade secret of another by a person who knows or has reason to know that the trade secret was acquired by improper means; or*

*(ii) disclosure or use of a trade secret of another without express or implied consent by a person who*

*(A) used improper means to acquire knowledge of the trade secret; or*

*(B) at the time of disclosure or use, knew or had reason to know that his knowledge of the trade secret was*

*(I) derived from or through a person who had utilised improper means to acquire it;*

*(II) acquired under circumstances giving rise to a duty to maintain its secrecy or limit its use; or*

*(III) derived from or through a person who owed a duty to the person seeking relief to maintain its secrecy or limit its use; or*

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<sup>575</sup> See [www.nccusl.org/Update/uniformact\\_factsheets/uniformacts-fs-utsa.asp](http://www.nccusl.org/Update/uniformact_factsheets/uniformacts-fs-utsa.asp)

*(C) before a material change of his position, knew or had reason to know that it was a trade secret and that knowledge of it had been acquired by accident or mistake.*

Between the original 1979 and the 1985 revision of the Uniform Trade Secrets Act, 48 States have implemented these provisions. The definition of "trade secret" is the same in the original 1979 and the 1985 revision of the Uniform Trade Secrets Act.

These provisions also apply to employees. However, most states also have a common law of trade secrets which would apply to employees and such law in most states imposes an implied obligation on employees not to disclose the trade secrets of their employers.

It is common practice in the United States to enter into non disclosure or confidentiality agreements.

#### 4.2. Japan

In Japan, confidential know-how will be protected insofar as it is a trade secret within the meaning of the Unfair Competition Prevention Act of 1993.

This Act defines "trade secrets" as *"technical or business information useful in commercial activities, such as manufacturing or marketing methods, that is kept secret and is not publicly known"*.

The unauthorised acquisition, use and disclosure of trade secrets are deemed unfair competition insofar as such acquisition, use or disclosure was in the knowledge that the trade secret was wrongfully acquired or disclosed.

Employees are subject to these provisions to the extent that the company sets out clear internal policies covering the management and protection of trade secrets. Courts have ruled against plaintiffs in suits alleging violations of trade secrets because such internal policies were not in place, were not clear or were not enforced.

The fraudulent acquisition, use or disclosure of trade secrets is subject to criminal sanction.

The use of non disclosure and confidentiality agreements is possible in Japan.

## 5. Practical impact

### 5.1. Existing surveys

There do not appear to be any existing surveys in relation to the practical impact of legislation applicable to technological know-how or know-how generally.

One related survey does report, however, the importance of the protection of know-how as an incentive. In that survey, four fifths of the surveyed members of the Intellectual Property Owners Association said that their competitive advantage would quickly erode without protection for trade secrets. This compares with two thirds in respect of patents.<sup>576</sup>

### 5.2. Workshop

A workshop of key stakeholders invited by the European Commission was held to discuss our draft findings<sup>577</sup>. It was noted by a participant that the licensing of know-how *"is a very viable means of commercialising technology"*.

Some participants expressed surprise at the recommendation in favour of harmonisation despite the fact that there is *"little empirical data"* on the issue. One participant commented while there may not be any applicable legislation in Holland, unlike some other Member States, it is not known whether this type of disparity between national laws affects the functioning of the internal market.

It was noted that trade secrets were often under-protected and, in terms of legal protection, do not have the same status as an IP right. While TRIPS provides a definition of trade secrets, it is not certain that TRIPS is directly applicable in the Member States. Its provisions may not therefore be used directly to protect trade secrets; *"this will only be possible with harmonisation"*. It was also suggested by a participant that sanctions for breach of any harmonising legislation should be civil rather than criminal in nature.

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<sup>576</sup> Survey of the Intellectual Property Owners Association by Cockburn and Henderson (2003) reported in 'Innovation and Incentives', Suzanne Scotchmer, 2004, Massachusetts Institute of Technology.

<sup>577</sup> Held in Brussels, 15 January 2009



A debate followed as to whether the information, in order to amount to a commercially protectable trade secret, must have economic value. It was noted that any "economic value" criterion would be subjectively interpreted. When a researcher is at the beginning stages of a research project, he or she does not know whether the final result of the research project will have economic value. The value of information can change over time. The definition of "trade secrets" should thus be drafted and interpreted as broadly as possible in order to maximise the protection of information which warrants protection. While some participants opined that the definition of trade secrets must be linked to a requirement that the information have economic value, others disagreed. It was stated, for example, that such a requirement would exclude secret information which could have economic value in the future. Such secret information may be disclosed at a time when it has economic value, but has no protection because it previously did not have economic value (at the time of assessment for the purposes of legal protection). It was further stated that it would be impossible to choose a moment in time to assess the economic value of information for these purposes. Another complex question would be whether the economic value to be assessed would be the value to the giver or the receiver of the information.

### 5.3. Current survey

In response to our questionnaire survey, 37% of respondents indicated that they had encountered difficulties in relation to the protection of trade secrets, including technological know-how, in the EU, whereas 63% of respondents indicated that they had not. Some respondents had experienced difficulties in relation to technological know-how whilst dealing with specific patents resulting from research activity. Other respondents had experienced problems with the definition and specification of the secret technological know-how during technology transfer agreements negotiations.

One respondent indicated that technological know-how had been very significant in terms of value in their organisation and that know-how can be very important in practice. Another respondent stated that trade secrets are usually the most valuable assets for companies but, assuming that they cannot be protected, are difficult to exploit with third parties. The fact that the information must be kept secret to ensure value makes setting up an efficient exploitation strategy with partners extremely difficult, as such joint efforts require the sharing of information. The respondent noted that, in the event of a breach of secrecy, there is no adequate

remedy as third parties cannot be prevented from using the information once disclosed. Therefore, damages payable by a party (for example following a court order if the wronged party initiated proceedings) in breach of a non-disclosure agreement is generally an unsatisfactory means of redress.

Another respondent stated that his organisation no longer relies on trade secrets in the manner that it used to.

Another respondent noted that often commercially-minded researchers will be those who rely on confidential know-how.

100% of respondents either agreed (63%) or strongly agreed (37%) that there should be a common framework for the protection of trade secrets, including technological know-how, in the EU. One of the respondents suggested that a common framework in this area is not feasible as it would be difficult or impossible to reach agreement on central provisions such as a common definition. 95% of respondents either agreed (63%) or strongly agreed (32%) with our main recommendation, namely that in devising any harmonisation measures, consideration is given to developing a common definition of trade secrets to include technological know-how. 5% of respondents did not express an opinion on this issue.

One respondent was of the view that the divergences between the legal regimes of individual Member States are significant, despite the fact that they may be based on TRIPS. The respondent suggested that harmonisation would improve this situation, but should not add an additional layer of complexity by taking the form of a complex number of exceptions or additions.

## 6. Analysis

### 6.1. Analysis of the situation in the EU

#### 6.1.1. Overview

It appears from the characteristics of the protection of know-how or trade secrets in section 3 that there is a marked divergence between Member States as to what type of know-how will be protected or not.

Generally, the Member States do not distinguish between the protection of technological know-how and know-how as such. Only two countries were reported as making such a distinction and that is Austria (in favour of protection) and Denmark (against protection in the case of 'scientific work').

Therefore, in most Member States protection will be afforded to technological know-how to the extent that it falls within the local protection of trade secrets, business secrets, unfair competition law, and so on. As such technological know-how may be seen as one aspect of a wider issue relating to know-how, or more commonly expressed as "trade secrets".

No relevant protection was reported for Cyprus or Malta<sup>578</sup>.

### 6.1.2. Contract law

The use of non-disclosure or confidentiality agreements has been reported for all Member States. These agreements do not appear to be limited in time and appear to be in common usage throughout the EU. The widespread use of these agreements might indicate a reluctance to rely on domestic laws relating to know-how or trade secrets for protection, relying instead on the enforcement of contract to protect know-how or trade secrets.

Therefore, contract law provides another basis under which technological know-how may be protected in the Member States.

### 6.1.3. Employees

Generally, all Member States provide for some measure of protection of know-how or trade secrets by employees. In the context of regulating the protection of know or trade secrets, it is important to balance protection with the free movement of employees within the EU and with the experience and expertise that they can bring to other enterprises. Any overly restrictive protection of technological know-how or trade secrets could have the effect of restricting the use of experience or expertise gained by an employee in the course of employment.

This point was usefully summarised by the Supreme Court of Pennsylvania in *Wexler v Greenberg*:

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<sup>578</sup> See section 3 of this chapter

*"[There is] a problem of accommodating competing policies in our law: the right of a businessman to be protected against unfair competition stemming from the usurpation of his trade secrets and the right of an individual to the unhampered pursuit of the occupations and livelihoods for which he is best suited. There are cogent socio-economic arguments in favour of either position. Society as whole greatly benefits from technological improvements. Without some means of post-employment protection to assure that valuable developments or improvements are exclusively those of the employer, the businessman could not afford to subsidise research or improve current methods. In addition, it must be recognised that modern economic growth and development has pushed the business venture beyond the size of the one-man firm, forcing the businessman to a much greater degree to entrust confidential business information relating to technological development to appropriate employees. While recognising the utility in the dispersion of responsibilities in larger forms, the optimum amount of "entrusting" will not occur unless the risk of loss to the businessman through a breach of trust can be held to a minimum.*

*On the other hand, any form of post employment restraint reduces the economic mobility of employees and limits their personal freedom to pursue a preferred course of livelihood. The employee's bargaining position is weakened because he is potentially shackled by the acquisition of alleged trade secrets; and thus, paradoxically, he is restrained, because of his increased expertise, from advancing further in the industry in which he is most productive. Moreover, as previously mentioned, society suffers because competition is diminished by slackening the dissemination of ideas, processes and methods.*<sup>579</sup>

#### 6.1.4. Protection of Technological Know-How as Intellectual Property

Though protecting similar interests, technological know-how or trade secrets are not IPR, as such, and they are not generally protected by the intellectual property laws though there may be a degree of overlapping.

For example, Article 52(1) of the European Patent Convention ("EPC") provides that European patents shall be granted for any inventions, in all fields of technology, provided that they are new, involve an inventive step and are susceptible of industrial application. However, Article 52(2) of the EPC provides that discoveries,

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<sup>579</sup> (1960) 160 A.R. 430, at pp. 434 – 435 and quoted in the Canadian Report on Trade Secrets, *supra* note 1

scientific theories and mathematical methods, aesthetic creations, schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers and presentations of information are not patentable.

Therefore, whilst it is clear that some technological know-how or trade secrets will be patentable it is also clear that some technological know-how or trade secrets will not be patentable and therefore fall outside the patent system.

In the case of copyright, it is generally the case that copyright protection will only protect technological know-how or trade secrets from copying in a particular form. However, copyright protection will not protect the underlying information; copyright protects the expression of information rather than the information itself.

## 6.2. Formulation of a European definition of "trade secrets"?

### 6.2.1. What information should be protected?

The context of this chapter is the protection of technological know-how and we have seen above how the protection of technological know-how in the EU depends on the extent to which it falls within some other concept which is protected locally such as trade or business secrets or the law of unfair competition (or contract law).

It is perhaps too limited, in an EU context, to consider further action in respect of technological know-how alone and not to consider at least some other types of information which might justly be protected on an EU basis. Rather, it may be that technological know-how is one aspect of what might be considered for further action in terms of policy and law.

In this regard, consideration should be given to the following types of information which were also considered by the United Kingdom Law Commission and the Canadian Report on Trade Secrets:

1. **Product Secrets:** These are secrets relating to specific products. The classic example of this type of secret is the formula for Coca Cola.
2. **Technological Know-How:** As described above, this is a reference to know-how or trade secrets relating to the acquisition, protection and exploitation of some aspect of modern technology.

3. **Strategic Business Information:** These are secrets such as business plans and customer lists.
4. **Compilations:** These are compilations of publicly available information in a unique or useful manner most likely in the form of a database.<sup>580</sup>

### 6.2.2. Elements of a common approach to trade secrets

There are at least two Community definitions of "know-how" but, as indicated earlier in this chapter, there is no EU regulation of know-how or trade secrets. These are instructive if harmonisation is to occur in the EU.

These definitions are found in Commission Regulation (EC) No 2659/2000 on the application of Article 81(3) of the Treaty to categories of research and development agreement (the "R&D BER") and Commission Regulation (EC) No 772/2004 on the application of Article 81(3) of the Treaty to categories of technology transfer agreements (the "TT BER"). These definitions are substantially similar in their terms.

Under the R&D BER, "know-how" means:

*a package of non-patented practical information, resulting from experience and testing, which is secret, substantial and identified: in this context, 'secret' means that the know-how is not generally known or easily accessible; 'substantial' means that the know-how includes information which is indispensable for the manufacture of the contract products or the application of the contract processes; 'identified' means that the know-how is described in a sufficiently comprehensive manner so as to make it possible to verify that it fulfils the criteria of secrecy and substantiality.*

Under the TT BER, "know-how" means:

*a package of non-patented practical information, resulting from experience and testing, which is:*

- (i) secret, that is to say, not generally known or easily accessible,*
- (ii) substantial, that is to say, significant and useful for the production of the contract products; and*

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<sup>580</sup> Law Commission on 25 November 1997 (see [www.lawcom.gov.uk/misuse\\_trade.htm](http://www.lawcom.gov.uk/misuse_trade.htm)) at pp. 32 - 33 and Law Institute of Law Research and Reform, Edmonton, Alberta and A Federal Provincial Working Party "Trade Secrets" Report No. 46, July 1986, pp. 36 - 39

*(iii) identified, that is to say, described in a sufficiently comprehensive manner so as to make it possible to verify that it fulfils the criteria of secrecy and substantiality.*

Therefore, the essential requirements of know-how, as defined, is that it must be (i) secret, (ii) substantial and (iii) identifiable.

In Canada, the Canadian Report on Trade Secrets formulated the following definition of "trade secret":

*"[T]rade secret" means information including but not limited to a formula, pattern, compilation, programme, method, technique, or process, or information contained or embodied in a product device or mechanism which*

*(i) is, or may be used in a trade or business,*

*(ii) is not generally known in that trade or business,*

*(iii) has economic value from not being generally known, and*

*(iv) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.<sup>581</sup>*

From these definitions, it is possible to summarise the possible elements of a common approach to the protection of technological know-how and trade secrets. Some of these elements already appear in Member States' laws as summarised in Section 3 of this chapter.

*a. Subject Matter*

It seems appropriate that the definition should apply to "information". This is in common with TRIPS, the US, Canada and Japan.

In TRIPS, no further clarification of "information" is given. However, in order to remove any ambiguities surrounding the meaning of "information", it is expanded in the United States to include *"a formula, pattern, compilation, program, device, method, technique or process"*. In Canada, the proposed definition is expanded in much the same manner as the US but with the additional reference to *"or information contained or embodied in a product, device or mechanism"*. The reason for this additional wording appears in the substance of the report, namely: *"That is, the protection*

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<sup>581</sup> Law Institute of Law Research and Reform, Edmonton, Alberta and A Federal Provincial Working Party, "Trade Secrets", Report No. 46, July 1986, p. 256

*should extend to the knowledge itself, and any formal embodiment of that knowledge*"<sup>582</sup>. In Japan, "information" is qualified by being *"technical and business"* information.

This is not necessarily on all fours with the approach in the R&D BER and TT BER which refers to *"a package of non-patented practical information, resulting from experience and testing"*. However, these definitions are intended to cover only one aspect of what might be expected to be covered by a definition of "trade secret".

As noted by the UK Law Commission, it is perhaps useful that any reference to "information" be expressly stated to include a compilation (category four of what might be expected to be covered by such a definition)<sup>583</sup>.

#### *b. Secret*

Almost all definitions of trade secrets identified in this chapter expressly require an element of secrecy. In Canada, the proposed definition refers to *"not generally known in the trade or business"*. In Japan, the information is information that is kept secret and is not publicly known and under TRIPS the information must be secret *"in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question"*.

The formulation in TRIPS therefore refers in part to the possibility that the information may be a compilation of publicly available information (something which is expressly dealt with in the United States and Canadian formulations).

#### *c. Value*

All but the Japanese formulation require that there be some value attached to the fact that the information is secret. In TRIPS, the information must have *"commercial value because it is secret"*. In the United States, the information must *"derive[s] independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure of use"* and in Canada, the information must have *"economic value from not being generally known"*.

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<sup>582</sup> *Ibid.*, at p. 161

<sup>583</sup> Law Commission on 25 November 1997 (see [www.lawcom.gov.uk/docs/cp150.pdf](http://www.lawcom.gov.uk/docs/cp150.pdf))



d. *Protective measures must be taken*

All but the Japanese formulation require that the owner of the information takes steps to keep it secret. Thus, under TRIPS, the information must have been "*subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret*". In the United States, the information is "*the subject of efforts that are reasonable under the circumstances to maintain its secrecy*" with the same formulation adopted in the proposed definition in Canada.

e. *Use in the course of trade?*

The Canadian and Japanese formulations require some connection with trade. Therefore, in the Canadian version the information "*is, or may be used in a trade or business*" and in Japan the information must be "*useful in commercial activities such as manufacturing or marketing methods*".

### 6.2.3. Criminal sanctions

The majority of Member States provide for criminal sanctions of varying levels for misuse of know-how or trade secrets. Some of these are outlined below in Fig. 2 below.

Although not currently a criminal offence in the UK, criminalisation of the misuse of trade secrets has been recommended<sup>584</sup>.

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<sup>584</sup> Law Commission on 25 November 1997 (see [www.lawcom.gov.uk/docs/cp150.pdf](http://www.lawcom.gov.uk/docs/cp150.pdf))

Fig. 2 Overview of Criminal Sanctions in EU

	Criminal Sanctions	Fine	Imprisonment	Specific Offence
Austria	■	■	■	3 months or up to 180 rates of their average daily income in respect of employees
Belgium	■	■	■	Imprisonment between 8 days and 6 months and a fine between €550 and €2,750. Limited to specific professionals only
Czech Republic	■		■	One to twelve years
Denmark	■	■		Fine if within 3 years of relevant period
Estonia	■	■	■	Imprisonment up to 1 year for natural person Pecuniary punishment of between €30 and €500 daily rates for a natural person and between €3,195 and €15,974,440 for a legal person
Finland	■	■	■	Fine and/or imprisonment for up to 2 years
France	■	■	■	A fine of up to €30,000 (€150,000 in the case of legal entities) and imprisonment up to 2 years.
Germany	■	■	■	For breach of s. 17 UWG, imprisonment up to 3 years (5 years if use abroad) and a fine depending on severity of the violation. For breach of s. 18 UWG, penalty is imprisonment up to two years and a fine depending on severity of the violation. Separate penalties may apply under s. 242 Criminal Code (for theft)
Greece	■	■	■	Imprisonment up to 6 months and a fine of up to 3,000 Greek Drachmas (euro equivalent)

## Technological know-how

	Criminal Sanctions	Fine	Imprisonment	Specific Offence
Hungary	■	■ (in mitigation)	■	Generally imprisonment for up to 3 years but a fine may be imposed in mitigation at daily rates of between 30 and 540 days
Italy	■		■	Imprisonment up to 2 years
Latvia	■		■	Imprisonment up to 8 years
Lithuania	■	■	■	Prohibition to act in certain activities or employment from 1-5 years, a fine of up to €4,000 or imprisonment from 15 days to 2 years.
Luxembourg	■	■	■	Imprisonment of 3 months to 3 years and a fine ranging from €251 to €12,500
Netherlands	■			See sections 272 and 273 Penal Code
Poland	■	■	■	Imprisonment up to 2 years and a maximum fine of PLN 720,000
Portugal	■	■		Fine of €3,000 to €30,000 for a legal person or €750 to €7,500 for an individual
Slovakia	■	■	■	Imprisonment of between 6 months and 3 years or in severe circumstances, 3 to 9 years or 7 to 12 years. A fine of up to €331,930 may apply
Slovenia	■		■	Imprisonment for 1 to 5 years
Spain	■	■	■	Sanctions vary by offence but include imprisonment of between 2 and 4 years and 12 to 24 months' revenue
Sweden	■	■	■	Fine and/or imprisonment up to 2 or 6 years

There are various reasons why, as a matter of policy, criminal sanctions may be proposed in an EU formulation of a trade secret. As provisionally concluded by the UK Law Commission:

*"...the case for creating such offences is a strong one. It rests primarily on the argument that the "theft" of a trade secret is closely analogous to the theft of property in the strict sense, and on the economic importance of protecting businesses' investment in research, coupled with the inability of the civil law alone to provide effective protection."*<sup>585</sup>

Prior to 2005 it had generally been understood that the EC Treaty did not confer power on the EU institutions to create criminal sanctions in EU primary or secondary legislation. The creation of criminal offences with accompanying sanctions remained the exclusive jurisdictions of the Member States, save for the limited sphere of so-called "Third Pillar" matters contained in the Treaty of European Union (police and judicial co-operation in criminal matters).

In case C-176/03 *Commission v Council*<sup>586</sup>, the European Court of Justice held that while in general criminal law and criminal procedures fell outside the EC treaties, that did not prevent the Community legislature taking measures which related to the criminal laws of the Member States<sup>587</sup> *"when the application of effective, proportionate and dissuasive criminal penalties... is an essential measure for combating serious environmental offences..."*. However the scope and extent and the application of this principle was for a short period unclear (it may have been limited to environmental matters). The "ancillary competence" principle was confirmed subsequently by the Court in the *Ship Source* case<sup>588</sup> when the Court held that the Community had *"an implied competence, [in criminal matters] linked to a specific legal basis and may adopt criminal law measures, provided that there is a need to combat failure to implement Community objectives and that the aim of those measures is to ensure that the Community measure in question is fully effective"*. The scope was therefore expressly broadened from the environmental field. The measure in question before the Court (a Framework Decision) did not specify the penalties to be imposed, giving the member

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<sup>585</sup> Law Commission on 25 November 1997 (see [www.lawcom.gov.uk/misuse\\_trade.htm](http://www.lawcom.gov.uk/misuse_trade.htm)) at page 15

<sup>586</sup> Judgment of 13 September 2005

<sup>587</sup> At page 48

<sup>588</sup> Case C-440/05, Judgment of 23 October 2007

States "a certain latitude in that regard". The Court<sup>589</sup> held that the determination of the type and level of criminal penalties did not fall within the sphere of Community competence.

This case law has a very direct impact on IPR protection and the harmonisation measures available to the Community to strengthen those rights. In 2006, the UK's House of Lords Select Committee on the European Union<sup>590</sup> commented<sup>591</sup> that one of the very first measures adopted by the Commission after Case C-176/03 was for a Directive on criminal measures aimed at ensuring the enforcement of IPR, which was subsequently amended<sup>592</sup>. What had been proposed as a Framework Decision is now a proposal for Directive, subject to parliamentary scrutiny. However a Dutch constitutional law issue (and other procedural issues) with this measure has delayed its implementation.

The content of the proposal as it currently stands includes (without prejudice to any more stringent measures which may apply under national laws) an obligation on Member States to consider infringements of IPR "on a commercial scale"<sup>593</sup> as criminal offences and also includes attempting, aiding or abetting and inciting such offences. The infringement would need to be wilful. The Directive suggests possible penalties to include seizure of goods, and total or partial closure of the premises used to commit the infringement, with or without the publication of judicial decisions in this field. While the proposed Directive does not detail minimum offences, it does suggest some maximum offences in limited circumstances (where the offences were committed as part of a criminal organisation).

Following the European Parliament's first reading of the Directive, significant amendments were proposed<sup>594</sup> and the Commission may refer an amended proposal

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<sup>589</sup> Disagreeing with the position of the Commission in the instant case

<sup>590</sup> Report on the Criminal law Competence of the European Union, 2006, available at [www.publications.parliament.uk/pa/ld200506/227/22704.htm](http://www.publications.parliament.uk/pa/ld200506/227/22704.htm)

<sup>591</sup> At page 77 of the report

<sup>592</sup> Com (2006) 168 Final (Amended Proposal).

<sup>593</sup> The concept is taken from Article 61 TRIPS

<sup>594</sup> Codec 391/8732/07 Outcome of First Reading, 22-27 April 2007, for example there is now a "*misuse of rights*" provision included, and the insertion of defences such as a genuine belief on the part of the suspect in the invalidity of the IPR involved in the commission of the alleged offence.

to the Parliament in the future<sup>595</sup>. Know-how is not listed in the IP rights covered by the proposed Directive (in keeping with its usual classification as being outside the traditional meaning of the term "intellectual property right"). In any amendment to the Proposed Directive, the merit of the specific addition of measures to protect know-how should be carefully considered.

## 7. Conclusions

It appears from our analysis that the laws of the Member States do not generally distinguish between the protection of technological know-how and know-how *per se*. Rather the laws of the Member States broadly fall into four categories:

- (i) those that specifically protect trade secrets or similar concepts;*
- (ii) those that generally protect trade secrets or similar concepts by general unfair competition rules (or a combination of (i) and (ii));*
- (iii) those that protect trade secrets or similar concepts via the common law remedy of breach of confidence (UK, Ireland); and*
- (iv) those that do not appear to afford any protection (Cyprus, Malta).*

Notwithstanding the requirements of Article 10*bis* of the Paris Convention and Article 39 of TRIPS, there is a disparity between the Member States regarding the protection of trade secrets and technological know-how.

However, there appear to be two strong counterbalancing factors here which militate against harmonisation of this area at EU level.

First, there is an absence of empirical data indicating that the current disparity between Member States' laws gives rise to difficulties generally or specifically in the context of cross-border research although respondents to our questionnaire survey were (i) divided on whether they had experienced difficulties and (ii) supportive of harmonisation.

Secondly, there is a consistent approach across the EU for the protection of trade secrets and technological know-how by the use of non disclosure agreements or confidentiality agreements. This practice, common to all Member States, may act to negate any differences between Member States laws. Any proposal for harmonisa-

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<sup>595</sup> For current status of the Proposal, see [www.europarl.europa.eu/oeil/file.jsp?id=5263692](http://www.europarl.europa.eu/oeil/file.jsp?id=5263692)

tion of the protection of trade secrets including technological know-how in the EU should be in addition to and not in replacement for the protection afforded under contract law in the Member States. If anything, it should be expressly confirmed that contracts of this nature are permissible. It might also be considered that any protection be in addition to and not in replacement for existing local laws based on trade secrets, equity or unfair competition.

Furthermore, the issue of trade secret protection including the protection of technological know-how and the rights of employees must be balanced in terms of policy and law.

## 8. Recommendations

- Whilst there are broad similarities between the laws of the Member States regarding know-how and technological know-how insofar as they fall within trade secrets or within the protections against unfair competition, there is nonetheless capacity for marked divergences in protection across the EU.
- Whilst there is little empirical data relating to any practical impact of these divergences in the EU, harmonisation should be considered and this was supported by the respondents to our questionnaire survey.
- Whilst there is heavy reliance placed on the use of non disclosure and confidentiality agreements, this is not an appropriate replacement for a common approach to the protection of trade secrets including technological know-how.
- In devising any harmonisation measures it is recommended that consideration is given to developing a common definition of trade secrets to include technological know-how in order to in turn develop a common playing field across the EU.

# Chapter 7

## Co-ownership default regimes

"The intellectual property laws of most Member States define a "default" regime for joint ownership which applies in the absence of specific arrangements. However, these regimes usually differ among the Member States, *e.g.* regarding whether or not the granting of licences requires the agreement of the other co-owner(s), the sharing of costs and possible licensing revenues, etc.

At a time where R&D collaborations are increasingly frequent and result accordingly in more frequent joint ownership situations, the question arises whether some uniformity at European level might be desirable."



## 1. Structure of this chapter

This chapter first explains in a general section 3.1 what should be understood by "co-ownership" or "joint ownership" of IPR, and in which situations such co-ownership or joint ownership arises. Section 3.2 reports in particular on patent co-ownership and the differences in regulation on the subject between Member States, while section 3.3 covers copyright co-ownership.

Section 4 then analyses the various aspects of co-ownership through four different questions:

- Can co-owners exploit (e.g. assign or licence) the IPR separately, or are they required to act jointly?
- Does your jurisdiction contain provisions regarding the termination of IPR co-ownership? Can co-owners be forced to remain co-owners?
- Can co-owners enforce their rights separately, or only together?
- What happens to the other co-owners upon bankruptcy or insolvency of one of the co-owners?

Section 5 summarises the analysis in a table. Subsequently, sections 6 and 7 set forth the conclusions and recommendations resulting from the analysis.

## 2. IPR covered

Due to the relatively limited number of statutory provisions regarding co-ownership of IPR, this chapter focuses on patents, industrial design rights, copyright and trademarks.

Utility models, topography rights, plant breeders' rights, database rights and know-how are not covered. *"Collective trademarks"* are not discussed either. A collective trademark is a mark used by a collective group of shareholders of a legal person (or members of an association), where the holder of the collective trademark does not use the trademark itself, and instead merely supervises the use of the mark by its shareholders or members. Although collective trademarks entail – to a certain extent – an element of shared ownership, they cannot be considered co-ownership as such.

### 3. The concept of co-ownership

#### 3.1. General

"Co-ownership" or "joint ownership" of IPR refers to the situation where the ownership of some IPR is somehow shared between several natural or legal persons (the "co-owners").

Co-ownership is typically created when an IPR comes into existence by the efforts of two or more persons, such as through a collaborative invention or joint creation<sup>596</sup>. For those types of IPR that are subject to registration (patents, utility models, industrial designs and trademarks), it will be clear on the basis of the registration which persons need to be considered as co-owners. For joint copyright works, however, it will be less obvious who needs to be considered a co-owner, as copyright is not subject to registration<sup>597</sup>.

Co-ownership can also arise through subsequent dealings, such as a transfer of the IPR, either deliberately (*e.g.*, by selling the right to several persons at once), or due to a transfer of the right after the original owner's death (for natural persons) or merger or liquidation (for legal entities). Although this report is primarily concerned with the relations between the initial co-owners (researchers, designers, authors or their employers), it is clear that the need for a set of rules which have predictable results becomes even more important when a set of secondary owners becomes involved, as the probability of legal disputes then increases even more.

There is no common European legal concept of co-ownership, so that the legal treatment is left to each national legislature, resulting in a significant degree of variation across the Member States. This cannot surprise, as the European Community is not competent to directly regulate matters of property, following article 295 of the EC Treaty of the European Community<sup>598</sup>. Although there are some common patterns in the legal treatment of co-ownership due to the common historical bases of certain national laws, there are several large or small differences, even in neighbouring Member States.

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<sup>596</sup> IPR Helpdesk, "Joint Ownership in Intellectual Property Rights", available at [www.ipr-helpdesk.org](http://www.ipr-helpdesk.org)

<sup>597</sup> See section 5.3 below.

<sup>598</sup> See section 7.2 below.

In most cases, the default regime typically relies on a mix of a few explicit rules regarding co-ownership, combined with more general, supplemental rules of law (*e.g.*, the provisions of the Civil Code). Even when explicit rules exist, the number of rules is generally limited, so that not all of the questions triggered by co-ownership are explicitly dealt with, and the more general rules are still relied upon. As this creates legal uncertainty, it should not come as a surprise that it is strongly recommended to enter into a contract as soon as possible to deal with all questions triggered by the co-ownership.

Please note that this report does not deal with the possible *contractual* arrangements of co-ownership. Instead, it focuses exclusively on the default regime that applies when no contract has been concluded between the co-owners.

### 3.2. Co-ownership of patents

There are no common European provisions regarding co-ownership of patent rights. Instead, specific national rules – if available – can be found dispersed across national jurisdictions. The issue of co-ownership can also be regulated in the general rules of the Civil Code or, for some countries<sup>599</sup>, in a general law on co-ownership. Such provisions in the Civil Code or in a general law on co-ownership are typically drafted for dealing with tangible goods, which differs substantially from immaterial goods such as patent rights. Generally, few cases exist where the legal provisions have been tested before the courts in respect of patent rights.

Based on this information, Member States can be subdivided into two main categories:

**1. Countries with specific statutory provisions** – Member States such as Austria, France, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Slovakia, Spain, the Netherlands and the United Kingdom have adopted specific legal provisions on co-ownership in their national patent laws.

Generally, such specific provisions on co-ownership are not mandatory, so that parties can deviate from them through specific contractual arrangements, within the ordinary limits of contractual freedom. The rules and scope of co-ownership will

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<sup>599</sup> Finland (the Law governing certain relationships based on co-ownership) and Sweden (the Act on Joint Ownership)

therefore be governed by the agreement of the parties and, additionally, by the specific provisions on co-ownership in the national patent laws.

Even so, some minor exceptions<sup>600</sup> exists where there exists only a limited possibility for co-owners to freely organise their co-ownership arrangements. In such cases, the co-owners of a patent right can only regulate their relationship by contract when the relevant law provides for an option of discretion.

Co-ownership issues that are not handled by the specific statutory provisions, are generally dealt with by the Civil Code, or by a general act on co-ownership. Only one country (Luxembourg) provides that the default regime concerning co-ownership, as set forth in the Luxembourg Civil Code, is not applicable to the joint-ownership of a patent application.

**2. Countries without specific statutory provisions** – Member States, such as Belgium, Cyprus, Czech Republic, Estonia, Finland, Germany, Italy, Portugal and Sweden do not provide specific statutory provisions that deal with the co-ownership of patent rights.

Nevertheless, some of these countries<sup>601</sup> provide an explicit provision in their national patent law that recognises the possibility for a patent right to be held collectively. However, such provisions do not stipulate the legal consequences of the co-ownership.

In these Member States, in the absence of an agreement, the legal relationship of the co-owners will be governed by the general legal provisions of the Civil Code, or the provisions of general acts on co-ownership.

### 3.3. Co-ownership of copyright

The Berne Convention does not specify whether a work to which several persons have made contributions should be considered as a work of co-authorship, or as a composite work consisting of separately exploitable components<sup>602</sup>. As a result, Member States differ to a certain extent in the treatment of types of co-owned

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<sup>600</sup> Hungary and Latvia

<sup>601</sup> Cyprus, Czech Republic, Finland, Germany, Italy and Sweden

<sup>602</sup> S. RICKETSON and J.C. GINSBURG, *International Copyright and neighbouring rights. The Berne Convention and Beyond*, 2006, section 7.06

works they recognise in the field of copyright. The difficulties that arise because of the multiplicity of co-owned works are specific to copyright and are generally not present for the other types of IPR covered by this report (patents, designs and trademarks).

Some Member States<sup>603</sup> only recognise one statutory type of co-ownership for copyright works. Other Member States make a specific distinction:

- **Collaborative works** – Collaborative works are unitary works (*e.g.*, scientific publications) that are created by the creative effort of two or more persons.  
Some Member States require that the contributions of each co-author in collaborative works are “fused” or inseparably connected. If the inseparable connection requirement is not met in these Member States, the work may still be regarded as a collective work or as a collection of fully separate copyrights. Other Member States make a further distinction between *indivisible* collaborative works and *divisible* collaborative works, depending on whether the different contributions can still be recognised. Some Member States<sup>604</sup> also explicitly require that the individual contributions must have been created with the intention that the contributions would become part of a unitary whole.
- **Collective works** – A collective work (also called “compound work”<sup>605</sup> or “combined copyright work”<sup>606</sup> in some Member States) consists of a number of contributions constituting separate and independent works in themselves, that are assembled into a collective whole under the supervision of one person. Examples include newspapers, anthologies, works of reference, scientific collections, journals and encyclopaedias. Member States which recognise collective works, differentiate between the ownership of the collective work as a whole and the ownership of the individual contributions.

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<sup>603</sup> such as Austria, Cyprus and the United Kingdom

<sup>604</sup> Belgium, France and the United Kingdom

<sup>605</sup> (The English translation of) article 7.3 of the Greek Copyright Act also uses the term “compound work”. However, the Greek notion of “compound work” approximates a divisible collaborative work, as used in this report — i.e. a single work composed of several distinguishable contributions.

<sup>606</sup> See section 9 German Copyright Act. Its authors are not regarded as co-owners as such: no consent is required in case of exploitation of the separate parts

- **Derived works** – A derived work (also called "composite work" in some Member States<sup>607</sup>) depends on a pre-existing work, of which the original elements are reused in the derived work. Examples include translations and adaptations of a work. Contrary to collective works and collaborative works, derived works do not involve a collaboration between persons, or a plan to create a single work.

## 4. Analysis

In order to analyse the legal treatment of co-ownership of IPR, the following questions were asked to the network of National Correspondents:

- Can co-owners exploit (e.g. assign or licence) the IPR individually, or are they required to act jointly?
- Does your jurisdiction contain provisions regarding the termination of IPR co-ownership? Can co-owners be forced to remain co-owners?
- Can co-owners enforce their rights separately, or only together?
- What happens to the other co-owners upon bankruptcy or insolvency of one of the co-owners?

The answers to these questions are explored in this section 4.

Considering that no default regime exists for Denmark, Denmark is not included in the list of answers below. Compared with other Member States, Danish co-owners are therefore even more encouraged to enter into a contractual agreement to clarify their rights with respect to the co-ownership of intellectual property.

### 4.1. Exploitation of the IPR

#### 4.1.1. Consent for using the intellectual property for own purposes

When a co-owner wants to use the co-owned intellectual property for his own purposes, some jurisdictions require the co-owner to obtain the prior consent of the other co-owners.

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<sup>607</sup> (The English translation of) article 10 of the Latvian Copyright Act also uses the term "composite work". However, the Latvian notion of "composite work" approximates a collective work, as used in this report. The same applies to the Swedish Copyright Act.

It should be noted that, independent from the question of whether prior consent is required, some Member States also require the co-owner to compensate the other co-owners for the use of the intellectual property (see section 4.1.2 below).

**Patents** –Member States, such as Belgium, Cyprus, Czech Republic, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Luxembourg, Slovakia, Spain, the Netherlands, and the United Kingdom do not require a co-owner of a patented invention to obtain the consent of the co-owners to use the patent for his own purposes. This is also the case for Japan and the United States.

Even so, it was reported that the general Italian regime on joint ownership holds that the use of the co-owned property without consent assumes that none of the co-owners are prevented from using the property themselves<sup>608</sup>. Also, additional requirements for the individual exploitation of a co-owned patent have been provided for in the legal framework of some countries. Spain, for example, allows each of the co-owners to individually exploit the invention, subject to prior notification of the other co-owners. As another example, co-owners of a patent right in Finland shall not be required to obtain the permission of the other co-owners as long as such exploitation is customary and does not impede the use of the patent right by the other co-owners<sup>609</sup>. This view has, however, not been put to the test before Finnish Courts.

Considering that no consent is required from co-owners to use the patented invention, co-owners who have the capacity to use the patent themselves (*e.g.*, who have manufacturing capabilities themselves) are in a strong position in these Member States, compared to co-owners that do not have such facilities or capabilities<sup>610</sup>. Interestingly, the statutory provisions of Ireland, Malta and the United Kingdom even allow the use of the co-owned patent by an agent of each co-owner.

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<sup>608</sup> Considering the immaterial property of patents, we assume that this situation will normally not arise.

<sup>609</sup> N. BRUUN, K. HARENKO, J. KARTTUNEN, E. KORKEAMAKI, J. LINDBERG, M. NORRGARD, P. SALOMAA and A. SOININEN, “The impact of co-ownership of Intellectual Property Rights on their exploitation”, AIPPI, 2007, p. 3.

<sup>610</sup> W. CORNISH and D. LLEWELYN, *Intellectual property: patents, copyright, trade marks and allied rights*, 6th edition, 2007, nr. 7-18, page 281

**Copyright** – Contrary to patents, Member States<sup>611</sup> are clearly divided on the issue of whether the use of a co-owned copyrighted work for a co-owner's own purposes requires the consent of all other co-owners.

For *collaborative copyrighted works*, three groups of countries can be recognised:

- In a first group (Czech Republic and the United Kingdom), consent is **always** required.
- A second group (Belgium, Estonia, France, Germany<sup>612</sup>, Greece, Latvia, Lithuania, Luxembourg, the Netherlands, Portugal and Spain<sup>613</sup>) only imposes the consent when it concerns **indivisible works**, or when the work can only be exploited as a whole<sup>614</sup>. Consequently, no consent is required when a co-owner wants to use his own contribution of a divisible copyrighted work, provided some additional requirements are also met. These additional requirements are either that the use of the individual contribution does not hinder the use by the co-owners<sup>615</sup>, or that the individual contribution is not used as part of another collaborative work<sup>616</sup>, or that the individual contributions are of a different genre<sup>617</sup>.
- In a third group (Italy and the United States), consent of the other co-owners is **not required**, not even to use the entire copyrighted work. Italian law nevertheless requires that such individual exploitation does not prevent the other co-owners to use the copyrighted work equally.

For those Member States which recognise *collective works* (Estonia, France, Germany<sup>618</sup>, Greece, Latvia, Lithuania, Malta, Portugal, Sweden and the United States), the ownership of the collective work and the ownership of the individual

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<sup>611</sup> Belgium, Czech Republic, Estonia, Finland, France, Germany, Greece, Italy, Latvia, Lithuania, Luxembourg, Portugal, Spain, the Netherlands and the United Kingdom.

<sup>612</sup> Under German law, if the copyright work can be exploited separately, its authors are not regarded as co-owners as such and no consent is required in case of exploitation of the separate parts (this is called a "combined copyright work": see section 9 German Copyright Act).

<sup>613</sup> In Portugal, the majority's consent suffices

<sup>614</sup> e.g., Germany

<sup>615</sup> Belgium, France, Luxembourg, Portugal and Spain

<sup>616</sup> Belgium, Luxembourg and Spain

<sup>617</sup> France

<sup>618</sup> "Collective works" are called "combined copyright works" under German law (see section 9 of the German Copyright Act).



contributions must be distinguished. Each author of an individual contribution is allowed to exploit his contribution without the consent of the other co-authors, while the ownership of the collective work lies with the person who supervised (or took the initiative) for the collective work. In addition, French copyright legislation does not allow the owner of the collective work to change the ultimate use of a collective work without the consent of all contributing authors.

For those Member States that recognise *derivative works* (Belgium, France, Portugal, Ireland and Spain), the author of the derived work is required to obtain the consent of the owner of the original work.

**Design rights** – As regards design rights, Member States also adopt different legal solutions. As a first category, the legislations of Member States such as Belgium, France, Latvia, Luxembourg, the Netherlands, Slovenia and Sweden **do not provide specific legal provisions** regarding the individual exploitation of a design right.

As a second category, Member States such as Austria, Cyprus, Germany, Hungary and Italy do not require a co-owner of a design right to obtain the consent of the other co-owners for using the design, unless in case of **doubt** (Austria), or in case the use by one co-owner would **impact the use by the other co-owners** (Austria and Italy).

The only Member State for which it was reported that consent is required, is the Czech Republic.

**Trademarks** – Most Member States for which data was available<sup>619</sup> require a co-owner to obtain the consent of the other co-owners of a trademark in order to use the trademark. Conversely, several other Member States – Austria, Italy, Malta, Poland and the United Kingdom – do not require such consent.

It should be noted that the shared use of a trademark is a rather exceptional situation, considering the very nature and purpose of a trademark. For Italy, it was explicitly reported that the general rules of civil law for using co-owned property do not apply as such for trademarks (unless the trademark would be used for different types of products / services), as the shared use of a trademark is liable to violate the prohibition to deceive the public on the nature, quality or source of the products bearing the trademark.

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<sup>619</sup> Belgium, Cyprus, Estonia, France, Germany, Lithuania, Luxembourg, the Netherlands, Slovak Republic, Slovenia and Sweden

#### 4.1.2. Compensation when using the intellectual property for own purposes

Irrespective of the question of whether a co-owner is required to obtain the consent of the other co-owners to use the co-owned intellectual property for his own purposes, several National Correspondents reported that their jurisdiction required a co-owner to compensate the other co-owners for such use. Member States are divided on this subject, too.

**Patents** – The national laws of France, Hungary, Luxembourg and Poland explicitly require a co-owner to **compensate** the other co-owners for the individual use of the co-owned patent.

**Finland**, on the contrary, does not provide for a specific regulation concerning the compensation of the other co-owners in the case of individual exploitation by one of the co-owners. When taking into account Finnish case law, however, it can be deemed a general principle of property law that when a patent is used individually by one of the co-owners, compensation should be awarded to the other co-owners, provided that the co-owner uses more than his / her share of the co-owned patent and to the extent that such use precludes the other co-owners from using their shares in full. Polish law limits the compensation to one quarter of the profits generated from the patent. As for Hungary, the applicable law provides for “adequate” compensation in proportion to the shares owned by the other joint patentees.

The other countries for which information was reported by the National Correspondents (Belgium, Czech Republic, Germany, Ireland, Latvia, Slovak Republic, the Netherlands and the United Kingdom), do **not require compensation**. The same applies for the United States and Japan, where there is no statutory provision on profits which may result from exploitation of a jointly owned patent right. In Germany, the compensation duty has been subject to a long and controversial debate. The German Supreme Court eventually decided that there was no such obligation under the German default regime<sup>620</sup>.

**Copyright** – None of the countries for which data was reported (Belgium, Czech Republic, Estonia, France, Germany, Hungary, Italy, Japan, Latvia, Luxembourg, the Netherlands, Portugal and the United Kingdom) require a co-owner to compensate the other co-owners for the use of his own contribution of a divisible co-owned work. This indeed seems to be a reasonable approach. The sole exception is

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<sup>620</sup> "Gummielastische Masse II", 22 March 2005, described by M. HUENGES, "Joint ownership of patents", in *Managing Intellectual Property*, 2006, 107

Finland, where the aforementioned principles under patent law could potentially apply to all IPR, including copyright. However, this interpretation has not yet been tested before the courts, and is therefore subject to some legal uncertainty.

**Italian law** goes one step further, and allows each co-owner to use the entire copyrighted work without compensation. When the use of the work is subject to the consent of the other co-owners (see section 4.1.1 above), the compensation obligation will be determined in the agreement between the co-owners.

**Design rights** – Member States such as Austria, Belgium, France, Latvia, Luxembourg, the Netherlands, Slovenia, Spain and Sweden have not adopted specific rules regarding compensation for the use of co-owned design rights.

The only Member States reported that do require compensation are Finland (similar approach as for patents and copyright) and Hungary (“adequate” compensation in proportion with the ratio of ownership). Austria, Germany<sup>621</sup>, Italy and Japan do not require any compensation at all.

**Trademarks** – As for design rights, **no specific rules** were reported for the majority of Member States (Belgium, Cyprus, Estonia, France, Germany, Lithuania, Luxembourg, the Netherlands, Slovak Republic, Slovenia and Sweden).

Similar to design rights, only **Finland**<sup>622</sup> and **Hungary** require a co-owner to compensate the other co-owners for the use of the co-owned trademark.

Conversely, **no compensation is required** in Austria, Malta, Japan, Poland and the United Kingdom.

### 4.1.3. Consent to assign own share to a third party

Most countries require the joint consent of all co-owners to assign the IPR to a third party<sup>623</sup>. The question arises, however, whether a co-owner must also obtain the consent of his fellow co-owners in case he wants to assign his own share to a third party. The importance of this question cannot be underestimated, as the lack

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<sup>621</sup> unless the other co-owners would be harmed by the use of the design right by one co-owner

<sup>622</sup> again, similar approach as for patents, copyright and design rights

<sup>623</sup> A counterexample is the assignment of co-owned copyright in Malta: see section 4.1.4 below.

of required consent constitutes a possibility for a co-owner to unilaterally escape the co-ownership.

**Patents** – In most Member States<sup>624</sup>, the consent of the other co-owners is **not required** in order to transfer one's own share in a patent. Except for Finnish law – where it is defined that such transfer may not violate the rights and interests of other co-owners – no special conditions are imposed, other than the formal requirements for the transfer of such a right, regarding the assignment of a share in a patent right.

However, in several of these countries, the co-owners of the patent have a **pre-emption or revocation right**, which they can use to prevent the share transfers to a third party. Such pre-emption right exists in Belgium, France, Hungary, Luxembourg and Spain. For example, under Hungarian law, upon transferring a share of a patent right, a co-owner must offer to transfer the share to the other co-owners on the same conditions as offered to third parties.

On the contrary, the **consent of all co-owners is required** to transfer one's share in a co-owned patent under Czech law, Irish law, Japanese law and the law of the United Kingdom. Czech law nevertheless mitigates this requirement, by allowing a co-owner to assign his share to another co-owner without the consent of all other co-owners. Furthermore, Czech law also accepts the assignment of a share to a third party if none of the co-owners has accepted a written offer of assignment within a period of one month.

Austrian case law also requires the consent of all co-owners. However, it was reported that the purpose of this obligation is only to allow all parties to **determine the size of the share**.

**Copyright** – Out of those countries for which data was reported in the field of copyright law, only Japanese law requires a co-owner to obtain the consent of the fellow co-owners in order to assign his share to a third party. Belgium and Luxembourg also require consent to be obtained, although this is limited to *indivisible* copyrighted works. Conversely, no consent needs to be obtained under Austrian, Irish, Italian, Polish, Swedish and UK law.

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<sup>624</sup> Including Belgium, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, the Slovak Republic, Spain and the Netherlands

**Design rights** – Countries such as Austria, Cyprus, Finland, Germany, Greece, Hungary, Italy, Portugal and the United Kingdom<sup>625</sup> **do not require joint consent** for design rights. Nevertheless, a pre-emption right exists in Hungary and Portugal. In Belgium, France, Luxembourg, the Netherlands, Slovenia or Sweden, no specific rules apply.

Only the **Czech Republic** requires joint consent to allow a co-owner to assign his share to a third party. However, similar to the transfer of patent shares, this requirement is mitigated because the co-owner is entitled to transfer his share to a co-owner without the consent of the other co-owners. He can also transfer his share to a third party without joint consent when none of the co-proprietors accepts the written offer of transfer within a time limit of one month.

**Trademarks** – Similar to design rights, **no specific rules** apply in Belgium, Cyprus, Estonia, France, Germany, Luxembourg, the Netherlands, Slovak Republic, Slovenia and Sweden. Austria, Finland, Hungary, Italy, Lithuania, Poland, Portugal and Spain **do not require consent**, while Malta and the United Kingdom **do require consent**.

#### 4.1.4. **Consent when licensing co-owned intellectual property to third parties**

This fourth subsection deals with the question of whether the licensing of co-owned intellectual property requires the joint consent of all co-owners. Although joint consent is indeed a requirement in most Member States, there exist several exceptions, which merit a closer analysis.

**Patents** – The **consent of all co-owners** is necessary for the valid conclusion of a licence contract in most Member States<sup>626</sup>. Joint consent is also required in Japan. In Germany, some confusion remains as to whether a unanimous or a majority decision by the co-owners is required to grant a licensing contract to third parties. The highest court has not yet decided whether a dissenting minority of co-owners may be forced to grant a licence by a majority of co-owners. In Italy, a licence to third parties for less than nine years must be authorised by a qualified majority (2/3

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<sup>625</sup> It was reported that the situation in the United Kingdom is not entirely clear.

<sup>626</sup> Austria (*"in case of doubt"*), Belgium, Cyprus, Czech Republic, Estonia, Finland, Greece, Hungary, Ireland, Latvia, Lithuania, Malta, Poland, Slovak Republic, Spain, Sweden, the Netherlands and the United Kingdom

of the co-owners) while a licence which is granted for more than nine years must be agreed upon by all co-owners.

France and Luxembourg distinguish between *exclusive* and *non-exclusive* licences. In both countries, joint consent is **only required for exclusive licences** as opposed to non-exclusive licences, where joint consent is not required, although the other co-owners need to be informed and compensated.

**Copyright** – Joint consent for licensing a co-owned copyrighted work is **not required** in Malta and the Slovak Republic, although Maltese law allows co-owners to object against licensing (or assignment) of the copyright if they are unsatisfied with the terms of the licence (or assignment).

In all other Member States reported<sup>627</sup>, as well as Japan, joint consent is **required**. As for patents, Italy makes a distinction between licences which are granted for less or more than nine years. Licences for less than nine years require a qualified majority, while licences for more than nine years require unanimity of the co-owners in order to grant licences to third parties on copyright works.

**Design rights** – Member States such as Austria, Cyprus, Czech Republic, Estonia, Finland, Germany, Hungary, Ireland, Latvia, Portugal and the United Kingdom<sup>628</sup> require a co-owner to obtain the **prior joint consent** of all co-owners in order to licence the co-owned design. Not a single country was reported that did not require joint consent, although Spain requires a majority decision rather than a unanimous decision. The legislation of several countries<sup>628</sup> has **not adopted specific rules**.

**Trademarks** – Belgium, Cyprus, Estonia, France, Germany, Lithuania, Luxembourg, the Netherlands, the Slovak Republic, Slovenia and Sweden were reported **not to have adopted any specific rules** with respect to the consent required to licence a trademark.

All countries that have adopted specific rules in this area<sup>629</sup> require the **joint consent** of all co-owners in order to licence an (exclusive or non-exclusive) trademark right.

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<sup>627</sup> Austria, Belgium, Czech Republic, Estonia, Finland, France, Germany, Hungary, Ireland, Latvia, Lithuania (prohibition is only possible for a valid reason), Luxembourg, the Netherlands, Portugal, Slovenia, Spain, Sweden and the United Kingdom.

<sup>628</sup> Belgium, France, Luxembourg, the Netherlands, Slovenia and Sweden

<sup>629</sup> Austria, Finland, Hungary, Ireland, Malta, Poland, Portugal, Spain and the United Kingdom

Not a single country was reported to *not* require joint consent. Moreover, it was reported that under Maltese law, joint consent is mandatory and cannot be derogated from.

### 4.2. Enforcement of co-owned IPR

**Patents** – In a large number of Member States for which data was available<sup>630</sup>, as well as in the United States and Japan, each co-owner is **allowed to enforce a patent right**, for example by initiating court proceedings in the case of a licence infringement, autonomously and independent of each other. Among these Member States, some impose additional obligations on the co-owner that initiates the enforcement procedure. In France, Luxembourg, and Spain, for example, the co-owner who instigates these proceedings is required to notify the other co-owners. In Germany and Portugal, the default regime requires the enforcement procedure to be undertaken for the benefit of all co-owners.

In Belgium, however, the enforcement decision must be **jointly taken** by all co-owners. Similarly, one co-owner can sue for infringement in Ireland, Malta and the United Kingdom but the other co-owners must join the procedure in order to allow it to continue.

**Copyright** – Similar to patents, most Member States, as well as Japan and the United States, allow a single co-owner to **initiate legal proceedings** to protect the jointly-held copyright (Austria, Belgium, Estonia, Finland, Germany, Hungary, Latvia, Netherlands, Poland, Portugal, Slovenia, Sweden and the United Kingdom).

Even so, some countries impose **additional rules**. In Germany and Poland, as well as in the United States, the financial compensation obtained by the co-owner, appertains to all authors. In the United Kingdom, one co-owner can only claim damages in respect of his share of the copyright.

France and Spain do **not allow** a single co-owner to initiate copyright enforcement procedures. In France, the joint consent of all co-owners is required, as the court procedure will be declared inadmissible when not all co-owners are involved, al-

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<sup>630</sup> Austria, Czech Republic, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Portugal, Spain and the Netherlands

though this involvement is a mere formal requirement. In Spain, this type of procedure requires the consent of a majority of co-owners.

**Designs** – National Correspondents confirmed that design infringement proceedings can be **initiated** by a single co-owner in Austria, Cyprus, the Czech Republic, Finland, Greece, Hungary and Spain<sup>631</sup>.

**No specific rules** are available in Belgium, Luxembourg or the Netherlands.

Only two countries (Malta and the United Kingdom) were reported to follow a different system, where proceedings initiated by one co-owner **must necessarily be joined** by the other co-owners in order to allow the proceedings to continue.

Finally, Latvia also requires the consent of all the co-owners. However, contrary to Malta and the United Kingdom, the other co-owners are not required to join the proceedings as the instigating co-owner must rather obtain a **power of attorney** from the remaining co-owners before initiating any proceedings.

**Trademarks** – Most countries allow a single co-owner to **initiate proceedings** against trademark infringers. Such is the case for Austria, Finland, Hungary, Italy, Poland and Spain, as well as Japan.

Spanish law nevertheless requires the co-owner to **notify** the other co-owners of the legal proceedings, in order to allow them to join the trial.

Belgium, Cyprus, Luxembourg and the Netherlands were reported to **not have adopted specific rules** for trademarks.

Similar to design infringements, only two countries (Malta and the United Kingdom) follow a different system. In these jurisdictions, proceedings **can only be initiated by one co-owner**, and the other co-owners must join the suit in order to continue it.

As is the case for design rights, a **power of attorney** is required in Latvia.

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<sup>631</sup> In Spain, however, this is subject to notification of the other co-owners in order to allow them to join the proceedings



### 4.3. Termination of co-ownership

When a co-owner is no longer interested in the intellectual property at stake, the question arises as to whether he/she is entitled to request the co-ownership to be terminated (liquidated or dissolved). As is the case with the other legal questions, the answer to this question varies across the different Member States, and across the different types of IPR.

It should be noted that, independent of the question of whether the co-ownership can be terminated, co-owners may be able to transfer their share in the joint ownership to the other co-owners, or to a third party. Even though such transfer does not terminate the co-ownership, it may provide an equitable way for a co-owner to withdraw from the co-ownership. This subject is further dealt with in section 4.1.3 of this report.

**No specific provisions** – The National Correspondents of the Czech Republic, Estonia, Malta and the United Kingdom reported that the legislation of their Member State does **not provide any rules** regarding this issue.

**Termination request allowed** – Co-owners in Austria, Belgium, Poland, Portugal, Spain and Sweden (according to legal doctrine) **can request the termination** of the co-ownership at any time. Interestingly, under Polish law, the prerogative of requesting termination of the co-ownership can be excluded by an agreement, although this possibility is limited to a (renewable) period of five years.

**Termination request not allowed** – Contrary to most Member States' law, it was explicitly reported that under German law, co-owners of patents, utility models, industrial designs and copyright **cannot request** the termination of the co-ownership<sup>632</sup>. Similarly, in the United States, the Patent Act does not provide for termination of joint ownership, so that co-owners can be **forced to remain co-owners**. Finally, as regards copyright, Finnish law does not allow co-owners to request the termination of the co-owned copyright.

**Renouncing rights** – Considering that the ownership of a patent involves the payment of maintenance fees, some Member States (Belgium, Germany, Hungary and the Slovak Republic) allow co-owners to **renounce** their co-ownership rights. In the case of renouncement, the renouncing co-owner will be discharged from all rights and obligations relating to the patent, and his share will be distributed across the

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<sup>632</sup> However, co-owners can transfer their share to the other co-owners under German law.

remaining co-owners. In Hungary, the possibility of renouncement also applies to utility models, trademarks, designs, topography rights and plant breeders' rights.

#### 4.4. Provisions in case of bankruptcy or insolvency

A co-owned property may be affected by the bankruptcy or insolvency of one of the co-owners. National Correspondents of countries from which data was available, indicated that **no specific rules exist** with regard to IPR. Instead, the general provisions of national bankruptcy law apply, so that the legal impact of a bankruptcy or insolvency procedure will differ across the Member States.

In general, the rights and obligations of the bankrupt or insolvent co-owner are transferred to the trustee in bankruptcy. Subject to the rules applicable to the IPR, the trustee in bankruptcy may then continue to exploit the co-owned intellectual property, liquidate the share or request the termination of the co-ownership.

With respect to Austria, however, it was reported that the copyright exploitation rights are **not subject to any bankruptcy or insolvency proceedings**, so that the joint copyright is not affected by a bankruptcy or insolvency.

With respect to the United States, it was reported that no cases are known that relate to the effects of bankruptcy on co-ownership of patents, copyrights, or trademarks. Even so, it was predicted that the bankruptcy courts **would permit the transfer** of the ownership interest, even if such was prohibited by contract (if such contract is an "*executory contract*" as defined in bankruptcy law). However, some US commentators suggest that upon a bankruptcy filing, the bankrupt party could take the co-owner as an unsecured creditor.

## 5. Schematic overview

● = yes	○ = no	/ = no specific legal provisions
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	Consent required for use for own purposes				Compensation required for use for own purposes				Consent required to assign own share to third party			
	Patents	Copyright	Designs	Trademarks	Patents	Copyright	Design	Trademarks	Patents	Copyright	Designs	Trademarks
Austria	○		○	○			○	○	●	○	○	○
Belgium	○	Indivis	/	●	○	○	/	/	○(e)	Indivis	/	/
Cyprus	○		○	●				/			○	/
Czech R.	○	●	●		○	○			●		●	
Denmark	<i>No default regime</i>											
Estonia	○	Indivis		●		○		/				/
Finland	○				●				○		○	○
France	○	Indivis	/	●	●	○	/	/	○(e)		/	/
Germany	○	●	○	●	○	○	○	/	○		○	/
Greece	○	Indivis							○		○	

	Consent required for use for own purposes				Compensation required for use for own purposes				Consent required to assign own share to third party			
	Patents	Copyright	Designs	Trademarks	Patents	Copyright	Design	Trademarks	Patents	Copyright	Designs	Trademarks
Hungary	○		○		●	○	●	●	○ <sup>(e)</sup>		○	○
Ireland	○				○				●	○		
Italy	○	○	○	○		○	○		○	○	○	○
Latvia	○	Indivis	/		○	○	/		○			
Lithuania	○	Indivis		●				/	○			○
Luxembourg	○	Indivis	/	●	●	○	/	/	○ <sup>(e)</sup>	Indivis	/	/
Malta	○			○				○	○			●
Netherlands	○		/	●	○	○	/	/	○		/	/
Poland	○			○	●			○	○	○		○
Portugal	○					○					○	○
Slovak Rep.	○			●	○			/	○			/
Slovenia	○		/	●			/	/			/	/
Spain	○						/		○ <sup>(e)</sup>			○
Sweden	○		/	●			/	/		○	/	/

## Co-ownership default regimes

	Consent required for use for own purposes				Compensation required for use for own purposes				Consent required to assign own share to third party			
	Patents	Copyright	Designs	Trademarks	Patents	Copyright	Design	Trademarks	Patents	Copyright	Designs	Trademarks
UK	○	●		○	○	○		○	●	○	○ (?)	●

Japan	○				○	○	○	○	●	●		
US	○	○			○							

	Consent required to licence intellectual property				Individual enforcement allowed				Termination of co-ownership possible
	Patents	Copyright	Designs	Trademarks	Patents	Copyright	Designs	Trademarks	
Austria	●	●	●	●	●	●	●	●	●
Belgium	●	●	/	/	○	●	/	/	●
Cyprus	●		●	/			●	/	

	Consent required to licence intellectual property				Individual enforcement allowed				Termination of co-ownership possible
	Patents	Copyright	Designs	Trademarks	Patents	Copyright	Designs	Trademarks	
Czech R.	●	●	●		●		●		/
Denmark	<i>No default regime</i>								
Estonia	●	●	●	/		●			/
Finland	●	●	●	●	●	●	●	●	○ (copyright)
France	e/n-e	●	/	/	●	○			
Germany	●	●	●	/	●	●			○ (patents)
Greece	●						●		
Hungary	●	●	●	●	●	●	●	●	
Ireland	●	●	●	●	○				
Italy	●	●			●			●	
Latvia	●		●		●	●	○	○	
Lithuania	●	●		/	●				
Luxembourg	e/n-e	●	/	/	●		/	/	
Malta	●	○		●	○	●	○	○	/

## Co-ownership default regimes

	Consent required to licence intellectual property				Individual enforcement allowed				Termination of co-ownership possible
	Patents	Copyright	Designs	Trademarks	Patents	Copyright	Designs	Trademarks	
Netherlands	●	●	/	/	●		/	/	
Poland	●			●		●		●	●
Portugal		●	●	●	●	●			●
Slovak Rep.	●	○		/		●			
Slovenia		●	/	/		●			
Spain	●	●	●	●	●	○	●	●	●
Sweden	●	●	/	/		●			●
UK	●	●	●	●	○	●	○	○	/

Japan	●	●			●	●			
US					●	●			○ (patents)

**Notes:** (i) for the sake of clarity, only collaborative copyrighted works are shown in the table (see section 4.1.1 for additional details regarding collective works and derived works); (ii) boxes left empty refer to inconclusive data

## 6. Conclusions

### 6.1. Legal uncertainty caused by the default regimes

With the exception of Denmark, all Member States have a default regime for dealing with the co-ownership of intellectual property rights. However, the intellectual property laws of most Member States are rather sparse on the number of statutory provisions dedicated to this default regime. Even when the cross-border aspects are not taken into account, a default regime creates uncertainty, for the reasons outlined below<sup>633</sup>.

**Mix of explicit rules and general rules** – Our national reports indicate that in almost each of the Member States, the default regime for at least one type of IPR does not consist of explicit provisions, but instead relies on the more general (supplemental) rules of law to deal with the co-ownership, *e.g.* the provisions of the Civil Code. Even when explicit rules exist, the number of rules is generally limited, so that not all of the questions triggered by co-ownership are explicitly dealt with, and the more general rules are still relied upon. This reliance creates a certain amount of uncertainty, as the supplemental rules were generally drafted with tangible (movable or immovable) goods in mind.

**Legal issues** – It should come as no surprise that all National Correspondents, as well as the legal doctrine we consulted on this topic, strongly recommended co-owners to enter into a contract as soon as possible to deal with all questions triggered by co-ownership, irrespective of the existence of – or (explicit) rules imposed by – the default regime<sup>634</sup>. A similar position was expressed by the various stakeholders we interviewed: a significant majority of stakeholders never (37%) or only occasionally (21%) relied on the default regime. This view was also expressed by the UK Patent Office Hearing Officer<sup>635</sup>:

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<sup>633</sup> Only 10% of the stakeholders interviewed by us disagreed with this view.

<sup>634</sup> See also the statements made by W.E. BIRD (*"Usual legal advice: AVOID IT IF POSSIBLE"*) and K. CULLEN (*"Ensure that you have an agreement in place!"* and *"avoid joint ownership"*), presentations at the Association of European Science & Technology Transfer Professionals (ASTP), Venice, 2007)

<sup>635</sup> [www.ipso.gov.uk/pro-types/pro-patent/pro-p-os/o27205.pdf](http://www.ipso.gov.uk/pro-types/pro-patent/pro-p-os/o27205.pdf), nr. 100



*"I am acutely aware that joint ownership causes problems at the best of times, and is a recipe for disaster if the joint owners are at daggers drawn. I would therefore strongly urge the parties, in their own interests, to try and negotiate some settlement or compromise in the light of my findings."*

Such recommendations are linked to the issue that the default regime of co-ownership is regarded by many as being fraught with legal problems, even in a strictly national context, because it differs among the types of intellectual property and is inherently associated with an amount of uncertainty<sup>636</sup>. Such is particularly the case for patents, which are subject to several administrative obligations during the registration and maintenance procedure, and which usually cover multiple countries at once.

**Factual issues** – Even when a national default regime is clear and predictable, a contract is still recommended in order to describe and delineate the facts linked to the co-ownership. For example, in the field of copyright, the default regime of some Member States does not require a co-owner to obtain the consent of the other co-owners in case it concerns a "divisible" work, *i.e.* a work in which the separate contributions can still be recognised. The question of whether or not a work is divisible, may lead to substantial disputes in practice, *e.g.* when a part that was initially drafted by one author is partially changed by another author. Joint owners can avoid this uncertainty by concluding a contract that describes the roles, responsibilities and ownership of each party.

**Managerial issues** – Legal doctrine also recommends making contractual arrangements in order to allow one (natural or legal) person to manage the IPR, to avoid all co-owners needing to give their permission for each and every act of exploitation. In practice, this often leads to the creation of a dedicated company<sup>637</sup>.

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<sup>636</sup> D. MARCHESE, "Joint ownership of intellectual property" in E.I.P.R. 1999, 21(7), 364-369

<sup>637</sup> F. GOTZEN and MC JANSSENS, *Wegwijs in het intellectueel eigendomsrecht*, 2007, page 192

## 6.2. Legal uncertainty caused by the wide variation of default regimes

Based on the schematic overview provided in section 5, it is clear that the default regimes differ to a considerable degree across Member States, and across intellectual property types. Member States obviously provide different answers to the questions that are triggered by co-ownership – in particular in the areas of required consent and compensation of co-owners.

Even Member States that give approximately the same answer to a co-ownership question, may impose second-level requirements that will again lead to differences. For example, a number of Member States do not require one co-owner to obtain the consent of the other co-owners in order to assign his share to a third party. Several of these Member States nevertheless allow the co-owners to exercise a pre-emption right, which may still lead to practical differences between these Member States.

These differences do not consist of mere theoretical differences, but lead to significant differences in practice. With the exception of questions 4.1.1 (consent for use of patent for own purpose) and 4.1.2 (compensation for use of own copyright contribution), all questions and sub-questions led to a clear dissension across the EU.

In fact, we have not found two Member States that provide the same answer to the questions raised, and it is difficult to group or cluster Member States according to the answers provided. This should not come as a surprise, as a large number of default regimes lack explicit rules and instead rely on more general rules of ownership. The general legal treatment of (co-)ownership is, however, not harmonised in the EU (see also section 7.2 below).

## 7. Recommendations

### 7.1. Need for harmonisation, but no priority

Considering the wide variation in legal approaches across the EU, we are of the opinion that, from the perspective of researchers, there are merits in harmonising various aspects of the default regime, for at least patents, design rights and copyright.

Although the default co-ownership regime for trademarks reflects the same discrepancy, the need for a harmonised approach is lower, as trademarks are not found at the core of the research activity. Co-owned trademarks occur infrequently in practice, and are also less relevant from a research perspective, so that we deem harmonisation in this area to be less imperative.

If harmonisation is undertaken, we would recommend the harmonisation, in particular, of:

- required consent of other co-owners to **use** the co-owned intellectual property;
- (*for copyright:*) required consent of other co-owners to use and licence a co-owner's **own share**;
- required consent of all co-owners to allow a co-owner to **assign his share** to a third party, or to one or more other co-owners;
- possibility for each co-owner to **request the termination / liquidation** of the co-owned intellectual property;
- possibility for each co-owner to independently **initiate enforcement procedures**;
- requirement of **compensation** of other co-owners for:
  - the use of the co-owned intellectual property for own purposes;
  - third-party licensing of one's own share of the co-owned intellectual property;
  - third-party licensing of the entire co-owned intellectual property at the initiative of one co-owner; and
  - awards obtained in a third party enforcement procedure.

We think that a balanced and clear default regime will decrease the complexity of the current legal labyrinth, as parties must currently pay for their own legal advisers<sup>638</sup>. This may be a deterrent to research for SMEs whose resources may not allow for such expenditure.

It should be recognised, however, that a default regime will almost never be a substitute for a sound contract, considering the reasons outlined above in section 6.1. Hence, although there are merits in harmonising the default regime, we are not convinced that this harmonisation should receive high priority. When confronted

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<sup>638</sup> unless they take the considerable risk of drafting themselves, for which there is usually little or no available public funding

with our position, most stakeholders we interviewed (70%) agreed or strongly agreed, while only a minority (10%) disagreed. No stakeholder interviewed by us strongly disagreed.

Furthermore, care should be taken to avoid conveying the message to researchers that an EU-wide default regime (once adopted) would render the necessity for a contract redundant. Researchers must be made aware of the applicable "default regime" for co-ownership of IPR, the lack of harmonisation in the default regimes that apply across the EU, the risks associated with reliance on a default regime, as well as the benefits of entering into a contract before any research is jointly undertaken.

## 7.2. Competence of the European Community

Should an EU-level default regime be adopted, then article 295 of the EC Treaty needs to be taken into account, which holds:

*"This Treaty shall in no way prejudice the rules in Member States governing the system of property ownership."*

Although at first sight it seems that article 295 has a wide scope, the Court of Justice has limited the scope in its case law, ruling that article 295 does not mean that property law cannot be touched at all by European law<sup>639</sup>, but instead *"merely signifies that each Member State may organise as it thinks fit the system of ownership of undertakings whilst at the same time respecting the fundamental freedoms enshrined in the Treaty"*.

Article 295 therefore does not absolutely prohibit the adoption of ownership-related provisions in European law. Although European law did not initially affect property law directly, several examples exist of EU legal instruments that directly deal with property regulations. Examples include Council Directive 93/77/EEC on the return of cultural objects unlawfully removed from the territory of a Member

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<sup>639</sup> S. VAN ERP, *European and National Property Law: Osmosis or Growing Antagonism?*, 2006, Europa Law Publishing, Groningen, page 8 (also available at [www.law.kuleuven.ac.be/ccl/pdf/wvug6.pdf](http://www.law.kuleuven.ac.be/ccl/pdf/wvug6.pdf))

State, Directive 2000/35/EC on late payments and council regulation 1346/2000 on insolvency and Financial Collateral Directive 2002/47/EC<sup>640</sup>.

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<sup>640</sup> ECJ 4 June 2002, Cases 367/98, C-483/99 and C-503/99 ("Golden Shares" cases).

## Chapter 8

# IPR provisions in the Community Framework Programmes

"The IPR provisions of the EC R&D Framework Programmes ("FPs") are important, because of the significant budget of each FP, and because they are used as a reference in the design of the IPR provisions of some R&D national programmes. While these provisions are reviewed from one FP to the other, there is a need to more accurately analyse their benefits and drawbacks – relating to their impact on both the execution of a project and the exploitation of its results – and to identify recommendations which could be used in the design of the rules relating to future FPs. Account should evidently be taken of the need to reach a balance between the

amount of obligatory rules (which simplify the negotiation of an individual project, as well as the management of multiple projects) and the flexibility required by the particulars of each project."

### **1. Structure of this chapter**

Section 2 of this chapter introduces the relevant EC documents containing the IPR provisions of the FPs.

Section 3 considers key aspects of the current and previous IPR provisions applicable in the FPs, as they evolved through each FP from their form in the 1980s to their current form. The key aspects on which this chapter focuses are access rights; ownership; protection; and dissemination & use.

Section 4 addresses issues which have been encountered by Participants in the negotiation of IPR in relation to the FPs.

Section 5 considers specific IPR issues in relation to SMEs (Small and Medium Enterprises).

Section 6 addresses practical impact of the IPR provisions of the FPs by reference to existing studies and commentary from both academic and research institutions and industry.

In section 7, we provide our conclusions to this chapter.

In section 8, we provide our recommendations for current and future IPR provisions of the FPs.

Finally, section 9 contains a table detailing each FP and its corresponding model contract / grant agreement.

### **2. Introduction to EC documents containing IPR provisions throughout the FPs**

#### **2.1. The EC model contracts and grant agreements**

Until 1988, different forms of contract were used by the Community, creating considerable confusion among Participants, particularly where Participants were party to contracts under different schemes. On 1 October 1988, the Commission issued

two European Community Model Contracts ("ECMCs") to be used in research projects funded under the FPs<sup>641</sup>. By this time the second framework programme<sup>642</sup> was already in place<sup>643</sup>.

The ECMC which was issued on 1 October 1988 continued to be used under FP3. A new ECMC was approved by the Commission in July 1995 when FP4 was in place; and the version of this contract most widely used, the "actual cost reimbursement" model was published in mid-September 1995, and, with minor amendments, again in 1998<sup>644</sup>. The 1998 contract was itself amended on 9 September 1999<sup>645</sup> when FP5 was in place. The next ECMC was approved by the Commission on 23 October 2003 (during FP6), and the most recent version of the "general model grant agreement" ("GA"), as it is now known<sup>646</sup>, is that of 10 April 2007, which applies to projects under FP7<sup>647</sup>.

The ECMCs / GAs are drawn up by the Commission<sup>648</sup> and the annexes thereto<sup>649</sup>, together with the Council Decisions adopting each FP, and the EC Regulations

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<sup>641</sup>For an explanation of the relationship between the Grant Agreements and the FPs, see [cordis.europa.eu/fp7/calls-grant-agreement\\_en.html](http://cordis.europa.eu/fp7/calls-grant-agreement_en.html)

<sup>642</sup> Council decision of 28 September 1987 concerning the framework programme for Community activities in the field of research and technological development (1987 to 1991) (87/516/Euratom, EEC) OJ L 302/1

<sup>643</sup> Initially the FPs were not known by number: The FPs were numbered from FP4 onwards, and the numbering was applied retroactively to the earlier FPs

<sup>644</sup> The contribution of the Commission was set against a statement of actual costs. The other version of the 1995 ECMC was the "fixed contribution contract", whereby the contribution of the Commission was fixed by percentage instalments

<sup>645</sup> FP5 ECMC, Cost Reimbursement for research and technological development projects 09.09.1999, is available at [www.ipr-helpdesk.org/FP5-EC-model-contracts.html](http://www.ipr-helpdesk.org/FP5-EC-model-contracts.html)

<sup>646</sup> The "model contract" is now referred to as "grant agreement" under FP7, as was the case also under FP5

<sup>647</sup> The most recent version of Annex II, FP7 GA (which contains the IPR provisions), is Version 3, dated 15 June, 2009

<sup>648</sup> The Rules for Participation under FP7 (Regulation (EC) No 1906/2006 OJ L 391/1, 30.12.2006) provide that "*the Commission shall draw up ... a grant agreement between the Community and the Participants*" (article 18(2)); and "*Participants shall make no commitments incompatible with the grant agreement*" (article 18(3))

<sup>649</sup> The IPR provisions are contained in Annex II, General Conditions, to the ECMC / GA. Thus, references in this Chapter to "article II.14.4" refer to article 14.4 of annex II ECMC / GA



laying down the Rules for Participation of undertakings, research centres and universities ("RfP"), contain the IPR provisions applicable in the FPs. For ease of reference, the table at Section 9 of this chapter sets out the dates of, and Decisions adopting, each successive FP, and their corresponding ECMC/GA and RfP.

### 3. Key aspects of the IPR provisions

There are, in our view, four key aspects to the IPR provisions of the FPs, each of which are interrelated: access rights, ownership, protection, and use & dissemination. Each of these aspects will be dealt with individually in the following sections.

#### 3.1. Access rights

Collaborative research necessitates the sharing of knowledge. Participants must exchange information, know-how, software, etc. to work together in order to execute a project and exploit its results. This knowledge exchange is facilitated by the provisions on access rights as between Participants to a project.

The mandatory granting of access rights are considered by some commentators to be a disincentive to applying for funding under the FPs. For example, Rohll, *FP7 - IP Tricks and Traps*<sup>650</sup>, states, in relation to access rights, that

*"the rights which you have to grant can be limited, but not totally avoided. Therefore, if the project requires use of potentially very valuable background IP with real possibilities for commercial exploitation in the near future, FP7 may not be the best source of funding for the project".*

Rohll notes that it is therefore key that Participants clearly comprehend the "price" of the funding which they receive, before embarking on a project under the FPs<sup>651</sup>.

##### 3.1.1. Access rights under the 1995 ECMC (FP4)

The obligations set out in the 1995 ECMC on Participants<sup>652</sup> to grant access rights to IP, were considered by some to be quite complex<sup>653</sup>. For example, Byrne<sup>654</sup> states

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<sup>650</sup> C. ROHLL, "FP7 - IP Tricks and Traps" Feb 29, 2008, Mondaq Business Briefing, 4EUUK, available at [www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727](http://www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727)

<sup>651</sup> *Ibid.*

that "the Commission's attempt at reductionism and simplification [from the 1988 ECMC] resulted in a document which some would see as being far from a "model", if it is not indeed a somewhat grotesque version". Annex II of the 1988 ECMC contained the IPR provisions and was divided into eight parts, while in the 1995 version, Annex II was divided into four similarly titled parts. However, as Byrne and McBratney<sup>655</sup> state, in essence there was no real difference between these two versions. Thus, as the IPR provisions of the 1995 ECMC did not change significantly from those contained in the 1988 ECMC, for the purpose of brevity, this chapter summarises the IPR provisions of the 1995 ECMC.

For access rights for use in research and development, under FP4 each Participant was required to licence its foreground rights on a royalty free and non-exclusive basis to other Participants<sup>656</sup> in the same contract. Further, each contractor was required to licence its foreground information<sup>657</sup> to associated Participants established in the Community or in an associated country<sup>658</sup>, and to "complementary Partici-

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<sup>652</sup> *Participants* were referred to as *Contractors* in previous ECMCs. As they are now referred to as *Participants* under FP7. The FP7 GA refers to them as *Beneficiaries*. For the purposes of continuity they are referred to as *Participants* throughout this Chapter.

<sup>653</sup> See, for example, BYRNE, NOEL J., "The European Community's Model Research and Development Contract", 1996 *I.C.C.L.R.* 7(3), pages 82 - 90

<sup>654</sup> BYRNE, NOEL J., Byrne, Noel J., "The European Community's Model Research and Development Contract", 1996 *I.C.C.L.R.* 7(3), pages 82 - 90

<sup>655</sup> BYRNE, NOEL J., MCBRATNEY, AMANDA, Byrne, Noel J., McBratney, Amanda, *Negotiating and Drafting Technology Transfer Agreements* 3<sup>rd</sup> Edition, 2005, at page 401

<sup>656</sup> Associated Participants were required to comply with the ECMC's obligations on access rights as if they were Participants (Article II.3.2 1995 ECMC)

<sup>657</sup> "Foreground information" was defined as information, including all kinds of results, generated by any Contractor, or third parties working for any Contractor, in the execution of the project: article 14(3) 1995 ECMC. "Background information" was defined as information, excluding foreground information, owned or controlled by any Contractor in the same or related fields to the research under the project, and generated outside any Community Research Programme and without a financial contribution from the Commission, or under a contract concluded with the Community Research Programme, but in respect of which the Contractor is no longer under any obligations by that contract still to grant licences or user rights to third parties: article 14(5) 1995 ECMC

<sup>658</sup> "Associated Countries" are those which have in place science and technology cooperation agreements which involve contributing financially to the framework programme budget. All legal entities established in Associated Countries are eligible for funding on the same footing as legal entities from the Member States. The current Associated Countries of FP7, as of 11

pants" where, and to the extent that, a licence was necessary for the performance of their own research and development under the contract or a complementary contract within the FP<sup>659</sup>. The following table illustrates the persons entitled to access rights under the 1995 ECMC.

**Summary of Access Rights to Background and Foreground IPR under FP4 (1995 ECMC)**

Persons Entitled	Foreground necessary for R&D	Background necessary for R&D	Foreground necessary for Exploitation	Background necessary for Exploitation
<b>Participants in Same Contract</b>	Royalty-free, non-exclusive	Transfer conditions, for project work	Royalty-free, non-exclusive	Subject to (major) business interests, on (favourable or) commercial conditions to exploit foreground
<b>Associate Participants</b>	Royalty-free, non-exclusive	Subject to major business interests, on favourable conditions for project work	On favourable conditions, to exploit results of own RTD work on project	
<b>Complementary Participants</b>	Royalty-free non-exclusive	Transfer conditions, for complementary contract work	Royalty-free, non-exclusive	Subject to (major) business interests, (favourable or) commercial conditions to exploit foreground
<b>Certain Community and</b>	Transfer conditions	Subject to business interests, on	Subject to major business inter-	

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March 2009, are: Switzerland, Israel, Norway, Iceland, Lichtenstein, Turkey, Croatia, The Former Yugoslav Republic of Macedonia and Serbia, Albania and Montenegro, Bosnia and Herzegovina.

See [ftp://ftp.cordis.europa.eu/pub/fp7/docs/third\\_country\\_agreements\\_en.pdf](ftp://ftp.cordis.europa.eu/pub/fp7/docs/third_country_agreements_en.pdf)

<sup>659</sup> Article II.16.1.1 1995 ECMC

Other RTD Undertakings <sup>660</sup>		favourable conditions for use of foreground	ests, on favourable conditions to exploit results of own RTD work in community programme	
Other Community RTD Undertakings <sup>661</sup>	Subject to major business interests, favourable conditions			
Other Community Legal Entity <sup>662</sup>			Subject to major business interests and other conditions, on open market commercial conditions to exploit own RTD work or for any manufacture and exploitation	
The European Community	Royalty-free, non-exclusive			

It can thus be seen that the 1995 ECMC (and the 1988 ECMC) listed the various categories of persons and entities entitled to access rights and their respective entitlements. The terms upon which access rights had to be granted varied with the status of the would-be licensee, the purpose of the proposed licence and whether foreground or background rights were involved. For example, a third party could demand a licence in respect of foreground rights from the contract owner<sup>663</sup>, and

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<sup>660</sup> Article II.13.1 1995 ECMC

<sup>661</sup> Article II.13.2 1995 ECMC

<sup>662</sup> Article II.14.3 1995 ECMC

<sup>663</sup> Article II.16.1.3 1995 ECMC provided that *"each of the contractors shall not unreasonably refuse, upon request and on favourable conditions, to make available its foreground information and grant non-exclusive licences for its foreground patents to community undertakings provided that such information is, or such licences for the patents are, necessary for the execution of their own research and development work in the same or related fields in conformity with the Community interests; and no major business interests of the contractor oppose the disclosure or grant of a licence; and suitable arrangements required by the contractor are concluded to ensure that the information will not be used for any other purpose than that*

this possibility was said to deter companies in certain sectors from participating in Community research programmes<sup>664</sup>. However, as Byrne and McBratney<sup>665</sup> note,

*"in the 2003 ECMC model contract, entitlements to access rights (were) whittled down to a mere shadow of their original form<sup>666</sup>".*

### 3.1.2. Access rights under the 1999 ECMC (FP5)

In the 1999 ECMC, the general principles relating to access rights were as follows:

- access rights for knowledge were to be granted by Participants on request to principal Participants and assistant Participants on a royalty-free basis, or on market conditions, or on preferential conditions<sup>667</sup>, and in any case the rights may have been granted on more favourable financial terms<sup>668</sup>;
- a grant could be made conditional on specific agreements being concluded to ensure that the access rights were used only for the intended purpose and to maintain confidentiality<sup>669</sup>;
- access rights did not confer any right to grant sublicences<sup>670</sup>;
- the essential transfer costs<sup>671</sup> of a grant had to be borne by the grantee<sup>672</sup>;

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*for which it was supplied; and the contractor may refuse if it, or any of its licensees, has taken or is taking adequate steps to exploit or commercialise the information or patents in the Community".*

<sup>664</sup> BYRNE, NOEL J., MCBRATNEY, AMANDA, *Negotiating and Drafting Technology Transfer Agreements* 3<sup>rd</sup> Edition, 2005, at page 401

<sup>665</sup> *Ibid.*

<sup>666</sup> *Ibid.*

<sup>667</sup> i.e. conditions which were more favourable than market conditions, as a result of the granting of any kind of rebate – article II.11.21 1999 ECMC.

<sup>668</sup> Article II.11.2 1999 ECMC

<sup>669</sup> Article II.11.3 1999 ECMC

<sup>670</sup> Article II.11.4 1999 ECMC

<sup>671</sup> Participants were required to make available their background and foreground information and grant non-exclusive licences "on transfer conditions" (article II.16). Transfer conditions were defined as "conditions that have a value lower than favourable conditions, normally the cost of making the licences and user rights available" (article II.14)

<sup>672</sup> Article II.11.5 1999 ECMC

- a consortium agreement<sup>673</sup> between the Participants could provide for the grant of additional access rights or supplement the rules on access rights in the model contract<sup>674</sup>.

It can therefore be seen that those entitled to access rights under the 1999 version were reduced to two categories: principal contractors and assistant contractors. Principal contractors were those contractors with wide-ranging roles in the project throughout its lifetime, and assistant contractors were those contractors who supported one or more principal contractors<sup>675</sup>.

### 3.1.3. Access rights under the 2003 ECMC (FP6)

The 2003 ECMC further reduced the number of persons entitled, as of right, to a grant of access rights: only Participants who requested them in writing were entitled to access rights<sup>676</sup>; the 1995 ECMC specified that access rights had to be granted "on request" but did not stipulate that such request had to be in writing. This provision has been maintained under FP7 and is specifically provided for in the RfP and GA: all requests for access rights must be made in writing<sup>677</sup>.

### 3.1.4. Access rights under the 2007 GA (FP7)

The table below displays the economic conditions for the granting of access rights to other Participants for the implementation of projects under FP7:

Access Rights		For project execution purposes	For use purposes
To Background	Yes, if a Par-	Royalty free, unless	Subject to agree-

<sup>673</sup> The Consortium Agreement is between the Participants and supplements the standard grant agreement. The Consortium Agreement can cover management issues relating to the project, with particular reference to IP rights. There is no official model for Consortium Agreements issued by the European Commission. Certain organisations do provide models. Participants must adapt these to fit their consortium and it is the responsibility of the consortium to subject the agreement to legal examination.

<sup>674</sup> Article II.11.6 1999 ECMC

<sup>675</sup> Article II.1 1999 ECMC

<sup>676</sup> Condition II.35.1(a) 2003 ECMC

<sup>677</sup> Article 48(1) FP7 RfP ; Condition II.32.1, FP7 GA

	participant needs them for carrying out its own work under the project	otherwise agreed before signature of the Grant Agreement <sup>678</sup>	ment: Royalty-free, or On fair and reasonable conditions <sup>679</sup>
To Foreground	Yes, if a Participant needs them for carrying out its own work under the project	Royalty free <sup>680</sup>	

3.1.5. Change in terminology

The terminology of "foreground" and "background" information, which was used in the 1988 and 1995 versions of the ECMC, was replaced in the 1999 version of the model contract with the terms "knowledge" and "pre-existing know-how", although these definitions carried all the elements of the earlier definitions of background and foreground. The "new" terminology was used in the 2003 model contract<sup>681</sup>.

The "old" terminology of "foreground" and "background" was reintroduced in FP7. This ensures symmetry of terms as foreground is the natural corollary to background and this term is more widely understood in the research and IPR-communities than the term "knowledge". Studies suggest that the term "foreground" is, in fact, more widely used among researchers<sup>682</sup>. The definition of foreground is expressed more clearly than was the case in FP6<sup>683</sup>. The meaning of *background* was changed under FP7<sup>684</sup>. *Background* is defined as

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<sup>678</sup> Article 49(2) FP7 RfP

<sup>679</sup> Article 50(1) and (2) FP7 RfP

<sup>680</sup> Article 49(1) FP7 RfP

<sup>681</sup> See generally the Commission's *Guide to Intellectual Property Rights for FP6 Projects*, published by DG Research on 17 March 2004

<sup>682</sup> EFP Consulting (European Framework Program Consulting Limited), "The European Union's ICT Program in FP7", Myer W Morron, Version 1.13, 28 August 2008, at para 14.1

<sup>683</sup> IPR Helpdesk: "The IPR Regime under FP7: Overview and Comparison with FP6", January 2007. *Foreground* is defined as "the results, including information, whether or not they can be protected, which are generated by the indirect action concerned. Such results include rights re-

*"information which is held by Participants prior to their accession to the grant agreement, as well as copyrights or other intellectual property rights pertaining to such information, the application for which has been filed before their accession to the grant agreement, and which is needed for carrying out the indirect action"<sup>685</sup> or for using the results of the indirect action"<sup>686</sup> (emphasis added).*

### 3.1.6. New approach for access to background information and IP

Article 47 of the FP7 RfP, and article II.31 of the FP7 GA, allow Participants to define the background information needed for the purposes of the project in a written agreement, and, where appropriate, to exclude specific background.

Article II.31 of the FP7 GA provides that:

*"beneficiaries may define the background needed for the purposes of the project in a written agreement and, where appropriate, may agree to exclude specific background".*

There is therefore no need for long lists of exclusions, as was the case under previous FPs<sup>687</sup>. Article II.35.1 (d) of the 2003 ECMC (FP6), provided that:

*"a contractor may explicitly exclude specific pre-existing know-how from its obligation to grant access rights, by means of a written agreement between the contractors established before the contractor concerned signs the contract or before a new contractor joins the project. The other contractors may only withhold their agreement if they demonstrate that the implementation of the project or their legitimate interests will be significantly impaired thereby".*

Thus, under FP6, only *specifically defined* elements of pre-existing know-how ("background") could be excluded from the obligation to grant access rights<sup>688</sup>. This

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lated to copyright, design rights, patent rights, plant variety rights or similar forms of protection" (article 2(4) FP7 RfP)

<sup>684</sup> In the FP6 RfP, "pre-existing know-how" was defined as *"information which is held by participants prior to the conclusion of the contract or acquired in parallel with it, as well as copyrights or rights pertaining to such information following applications for, or the issue of, patents, designs, plant varieties, supplementary protection certificates or similar forms of protection"*.

<sup>685</sup> Research projects funded under the FPs are referred to as "indirect actions"

<sup>686</sup> Article 2(4) FP7 RfP

<sup>687</sup> EFP Consulting (European Framework Program Consulting Limited), "The European Union's ICT Program in FP7", Myer W Morron, Version 1.13, 28 August 2008, at para 14.1



created problems (e.g. in relation to background of other departments of the same legal entity) and was not applied in a consistent manner. This was restrictively interpreted; the rule was intended to encourage sharing, and not excluding<sup>689</sup>.

The reasoning behind the new approach to background information may be seen in the *Commission Staff Working Paper – Annex to the Proposal for the Council and European Parliament Decisions on the 7th Framework Programme (EC and Euratom) 2005*<sup>690</sup> which considered, in relation to the adjustment of IPR provisions, that:

*"some improvements and adjustments to the standard grant agreement are necessary based on the experience gained from the implementation of FP6 contracts, and greater flexibility for pre-existing know-how could be introduced in order to avoid some of the unnecessary misunderstandings that have arisen in some FP6 consortia. The latter could be achieved by allowing Participants to identify only the pre-existing know-how that they propose to provide access to and by underlining that only that pre-existing know-how necessary for the project is required".*

UNICE, in its Comments on the Proposal for a 7<sup>th</sup> FP<sup>691</sup> in 2005, commented that:

*"the issue of pre-existing know-how also needs to be properly dealt with. It is currently impossible for larger companies with a broad knowledge base to describe all pre-existing know how in advance. Solutions are needed which prevent the unwanted transfer of non-described pre-existing knowledge".*

Rohll<sup>692</sup> notes that the downside of the approach in relation to access rights to background under FP7 is that there is effort involved in defining background which

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<sup>688</sup> Article 25(3) FP6 RfP provided that *"a participant may explicitly exclude specific pre-existing know-how from the obligation to grant access rights by means of a written agreement between the participants, before the participant concerned signs the contract or before a new participant joins the indirect action. The other participants may only withhold their agreement if they demonstrate that implementation of the indirect action or their legitimate interests will be significantly impaired thereby"*.

<sup>689</sup> Blaya, Alicia, IPR Helpdesk 2007 "Intellectual Property Rights in FP7", London, 5 July 2007.

<sup>690</sup> Commission Staff Working Paper "Annex to the Proposal for the Council and European Parliament Decisions on the 7<sup>th</sup> Framework Programme (EC and Euratom): Main Report Overall Summary – Impact Assessment and Ex Ante Evaluation" COM (2005) 119 final, SEC (2005) 430/3

<sup>691</sup> UNICE Position Paper on FP7, July 2005, available at [ftp://ftp.cordis.europa.eu/pub/fp7/docs/unice\\_fp7.pdf](ftp://ftp.cordis.europa.eu/pub/fp7/docs/unice_fp7.pdf)

<sup>692</sup> C. ROHLL, "FP7 - IP Tricks and Traps" Feb 29, 2008, Mondaq Business Briefing, EUUK, available at [www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727](http://www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727)

is needed for the project, and there is the possibility that background information which is required for the project may be omitted. However, it is arguably an exercise which would consume less time than the enumeration of background information which is to be excluded from the project.

Further, under FP6, the written agreement to exclude specific pre-existing know-how (which was to be excluded from the obligation to grant access rights) was required to be concluded prior to signature of the grant agreement or before a new participant joined<sup>693</sup>. Under FP7, there is no such time limit for exclusion of specific background. Participants under FP7 are, as a result, in a better position as it is not necessary for them to define excluded background until they have sufficient knowledge of the project expectations as to be in a position to list the information which will be required for its implementation.

The definition and possible exclusion of background is also a useful exercise for Participants. It can lead Participants to further familiarise themselves with the project, and possibly to reconsider its scope, or even the identity or numbers of members of the consortium in the event that rights which are necessary for the project are being withheld.

### 3.1.7. Access to background information which is "needed" for the project

The FP7 definition of background makes it clear that only "needed" background is to be excluded – by definition if not needed, it is not necessary to exclude it.

Under article II.1.4 FP7 GA, "background" is defined as "information which is held by beneficiaries prior to their accession to this agreement, as well as copyrights or other IPR pertaining to such information, the application for which has been filed before their accession to this agreement, *and which is needed for carrying out the project or for using foreground*".

The FP6 definition of background<sup>694</sup> did not explicitly include a limitation to information which was "needed" for implementation or use of background. Article II.35.2 of the 2003 ECMC (FP6), in relation to access rights for execution of the

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<sup>693</sup> Article 25(3) FP6 RfP; article II.35.1 (d) 2003 ECMC

<sup>694</sup> "Pre-existing know-how" was defined by article II.1.18 2003 ECMC as *"the information which is held by contractors prior to the conclusion of the contract, or acquired in parallel with it, as well as copyrights or rights pertaining to such information following applications for, or the issues of, patents, designs, plant varieties, supplementary protection certificates or similar forms of protection"*.

project, stipulated that access rights were to be enjoyed by Participants "if the knowledge or pre-existing know-how is *needed* to carry out their own work under that project". Similarly, article II.35.3 of the 2003 ECMC, in relation to access rights for use of knowledge, stipulated that access rights were to be enjoyed by Participants "if the knowledge or pre-existing know-how is *needed* to use their own knowledge".

Despite this limitation in the FP6 provisions on access rights, some Participants were concerned because they did not make the link between the definition of pre-existing know-how in the 2003 ECMC (which, as noted, did not contain an express limitation to information which was "needed" for the project) and these access rights provisions, which did contain such limitation<sup>695</sup>. Thus, some Participants feared that they needed to give access to all their pre-existing know-how and were therefore hesitant to participate or to make large lists excluding all pre-existing know-how. The clarification of the definition of background in FP7 has thus eased any such concerns of Participants.

The explicit limitation is also included in the FP7 provisions on access rights<sup>696</sup>. Article 49(2) of the FP7 RfP provides that *"access rights to background shall be granted to the other Participants in the same indirect action, if it is needed to enable those Participants to carry out their own work under that indirect action provided that the participant concerned is entitled to grant them"*. Article II.33 and article II.34 of the FP7 GA (concerning access rights for implementation and access rights for use) contain similar limitations to access to information which is "needed" in relation to background and foreground.

Background that has no relevance to the project is therefore not subject to the obligation to grant access rights to other Participants for the implementation of the project. Such access rights need only be granted to the extent that a party is entitled to grant them<sup>697</sup>. As Rohll states, *"concerns about pre-existing third party rights over background are therefore taken care of"*<sup>698</sup>.

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<sup>695</sup> Article II.35.2 and article II.35.3

<sup>696</sup> EFP Consulting (European Framework Program Consulting Limited), "The European Union's ICT Program in FP7", Myer W Morron, Version 1.13, 28 August 2008, at para 14.1

<sup>697</sup> Article II.33.2 and article II.34.2 FP7 GA.

<sup>698</sup> C. ROHLL, "FP7 - IP Tricks and Traps" Feb 29, 2008, Mondaq Business Briefing, 4EUUK, available at [www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727](http://www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727)

### 3.1.8. Exclusion of sideground

It can be seen that under FP7, "background" includes only *prior* information and IPR which have been granted or applied for, and does not include information parallel to the project, i.e. what is commonly referred to as "sideground". The inclusion of sideground (any results, data and information outside the project) in the obligation to grant access rights was avoided in FP7 after the uncertainty created by its inclusion in FP6<sup>699</sup>. There is therefore no longer a need to include information generated in parallel but outside the project. This has been commended by the Helmholtz Association of German Research Centres<sup>700</sup> as avoiding the drawing in of results and know-how outside the project, and unnecessary for the results of the projects. The inclusion of sideground was seen as creating uncertainty as it was an "unknown variable". It avoids unnecessarily complicating negotiations for agreements on the project and pressurising the research Participants to bring in additional know-how when, for example, industry Participants threaten to abandon the project. Furthermore, it has been stated that the inclusion of sideground was considered to "create uncertainty and, in practice, was rarely needed"<sup>701</sup>.

### 3.1.9. Access rights: period for request

Under FP6, access rights could be requested for up to two years after the end of the project or the participation of a contractor as the case may have been, unless a longer period was agreed between the Participants<sup>702</sup>. Earlier versions of the ECMC set the limit at five years, with the possibility of a longer term being agreed between Participants.

Under FP7, the period during which access rights for use may be requested is reduced from a period of two years to one year<sup>703</sup>, unless the Participants agree on a different time-limit. As the two year time limit in FP6 was considered too long by most FP6 Participants, a default time limit of one year was introduced with the

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<sup>699</sup> Helmholtz Association of German Research Centres "Comments on the Innovative Medicine Initiative (IMI) IPR Policy Agreement from the perspective of research organisations" August 2007

<sup>700</sup> *Ibid.*

<sup>701</sup> C. ROHLL, "FP7 - IP Tricks and Traps" Feb 29, 2008, Mondaq Business Briefing, 4EUUK, available at [www.thefreelibrary.co./\\_/\\_print/PrintArticle.aspx?id=175684727](http://www.thefreelibrary.co./_/_print/PrintArticle.aspx?id=175684727)

<sup>702</sup> Article 27(2) FP6 RfP

<sup>703</sup> Condition II.34.4, FP7 GA; Article 50(4) FP7 RfP

flexibility for the Participants to choose a different either longer or shorter limit<sup>704</sup>. Under FP6, Participants could only agree to a *longer* period over two years; under FP7, Participants are free to choose either a *shorter or longer* period under or over one year, thus affording Participants flexibility in this regard.

### 3.1.10. Right to grant sub-licenses

In FP7<sup>705</sup>, as in FP6<sup>706</sup>, access rights confer no entitlement to grant sub-licenses, unless otherwise agreed by the owner of the foreground or background. The right to grant sub-licenses with the agreement of the owner is seen as sufficient and guarantees the ability of the owner to commercialise its foreground<sup>707</sup>. Rohll<sup>708</sup> considers the reason for the prohibition on the right to sub-licence (even to affiliates of consortium members), without the consent of the owner, to be that, in a large consortium, the ability for each participant to sub-licence to its affiliates could significantly increase the number of entities entitled to a licence and include many who have had little or no involvement in the project:

*"This would cause uncertainty for the owner of the relevant foreground or background, who may quickly lose trace of all those entitled to use its IP. On the other hand, preventing access to affiliates may, in some cases, deny a participant the chance to exploit its rights. For example, a university or other academic institution is unlikely to exploit its IP directly but may licence it to a third party in return for royalties or other benefits and sub-licensing of access rights should not be unreasonably withheld in these circumstances"*<sup>709</sup>.

### 3.1.11. Access rights: grant of exclusive licences

As noted above, under the 1995 ECMC, a third party was able to demand a licence in respect of foreground rights from the Participant in certain situations, which may

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<sup>704</sup> Condition II.36 2003 ECMC

<sup>705</sup> Condition. II.32.5 FP7 GA; Article 48(2) FP7 RfP

<sup>706</sup> Article II.35.1 (e) 2003 ECMC

<sup>707</sup> Helmholtz Association of German Research Centres, "Comments on the Innovative Medicine Initiative (IMI) IPR Policy Agreement from the perspective of research organisations" August 2007

<sup>708</sup> C. ROHLL, "FP7 - IP Tricks and Traps" Feb 29, 2008, Mondaq Business Briefing, 4EUUK, available at [www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727](http://www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727)

<sup>709</sup> *Ibid.*

have deterred firms from participating in Community research programmes. Byrne<sup>710</sup> notes that it is proper that, where a project has been funded by the Community, its taxpayers should be able to benefit from that funding. Byrne<sup>711</sup> points out that under the 1995 ECMC, where Participants may have funded half of the actual costs of a project, the 1995 ECMC probably struck an appropriate balance having regard to access rights for third parties, but not all would-be Participants may have thought so<sup>712</sup>.

In earlier versions of the ECMC, a grant of access rights was, in most cases, to be non-exclusive. There was no rule to that effect in the 2003 model. However, it was unclear whether exclusive licences could be provided if other Participants waived their access rights, as this was not explicitly indicated in the 2003 ECMC, thus raising the possibility of contradiction between the consortium agreement and contract<sup>713</sup>.

A provision on exclusive licences has been introduced under FP7. The FP7 RfP provides that exclusive licences for foreground or background may be granted, subject to written confirmation by all other Participants that they waive their access rights thereto<sup>714</sup>. This increases the freedom of the Participants concerned, the potential strength and value of their IPR and the likelihood that the results will be exploited.

### 3.1.12. Notification to Commission in event of restriction on ability to grant access rights

#### *a. Notification of Restrictions under the 1988 ECMC*

Article II.18 of the 1988 ECMC required a Participant to give notice to the Participants, complementary Participants and the Commission prior to the signature

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<sup>710</sup> BYRNE, NOEL J., "The European Community's Model Research and Development Contract", 1996 I.C.C.L.R. 7(3), pages 82 – 90

<sup>711</sup> BYRNE, NOEL J., "The European Community's Model Research and Development Contract", 1996 I.C.C.L.R. 7(3), pages 82 - 90

<sup>712</sup> *Ibid.*

<sup>713</sup> EFP Consulting (European Framework Program Consulting Limited), "The European Union's ICT Program in FP7", Myer W Morron, Version 1.13, 28 August 2008, at para 14.1

<sup>714</sup> Article 48(3) FP7 RfP; Article II.32.7 FP7 GA

of, and promptly during the period of, the contract and any complementary contract, of:

- (a) any contractual limitation that may apply:*
  - (i) to the disclosing or granting of licences or user rights of any of its own background information or patents; and*
  - (ii) the disclosure or licensing of information or patents of any third party specifically granted to it,*  
*which may have been necessary for the execution of the contract or a complementary contract, or the exploitation or commercialisation of the results thereof;*
- (b) any obligation which may have bound the Participant to disclose or grant licences or user rights for any foreground information to any third party, neither being an affiliated company nor eligible to benefit (pursuant to the IPR provisions), where such licences or rights concerned a substantial part of the contract or a complementary contract, or affected the exploitation or commercialisation of the results thereof; and*
- (c) any restriction arising from governmental or similar regulations that may have limited*
  - (i) the availability of any information or patents used or intended to be used by the Participant in the contract or a complementary contract;*  
*or*
  - (ii) rights or licences in respect thereof,*  
*which would materially and adversely affect the execution of this contract or a complementary contract, or the exploitation or commercialisation of the results thereof.*

Following a notification, under the 1988 ECMC, the other Participants were required to submit any observations which they wished to make to the Commission on the impact of the notified restriction or obligation within one month of the notification, and if this was not done, they were deemed to have accepted the restrictions or obligations specified in the notice. The Commission had a further month to submit its observations, failing which it was deemed to have accepted the same. The contract could be terminated if it appeared that the notified restriction or obligations could materially and adversely affect performance of the project or lead to a

material change in the exploitation potential of the results and if the contracting parties could not agree to amend the contract in a suitable form<sup>715</sup>.

*b. Notification of Restrictions under the 1999 ECMC*

Article II.21.1 of the 1999 ECMC, entitled "incompatible or restrictive commitments", required contractors to take all necessary steps to avoid commitments which were incompatible with the IPR provisions on access and use of information and IP. Article II.21.2 stated that "contractors shall be informed, as soon as possible, by the contractor required to grant access rights ... of any limitations on the granting of access rights to pre-existing know-how, obligations to grant rights to knowledge, or any restriction which might substantially affect the granting of access rights". It will be noted that this provision was a neater and more simple version than that contained in the 1988 ECMC.

*c. Notification of Restrictions under the 2003 ECMC*

The provision was further simplified in the 2003 ECMC, Article II.36 of which, entitled "Incompatible or Restrictive Commitments", provided that:

*"Contractors shall be informed as soon as possible by the contractor required to grant access rights of any limitations to the granting of access rights or of any restriction which might substantially affect the granting of access rights, as the case may be".*

*d. Notifications of Restrictions under the 2007 GA*

This simplified provision remains in FP7. The obligation now appears under "Access Rights: Principles". Article II.32.3 of the 2007 GA provides that:

*"without prejudice to their obligations regarding the granting of access rights, beneficiaries shall inform each other as soon as possible of any limitation to the granting of access rights to background, or of any other restriction which might substantially affect the granting of access rights".*

It should be noted that there is also a general provision in the General Conditions in Annex II, under "II.3 General Principles, Specific Performance Obligations of each beneficiary"<sup>716</sup> at indent (i) and provides that:

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<sup>715</sup> Article II.18.4 1988 ECMC

<sup>716</sup> The term "*Beneficiary*" replaced the term "*Contractor*" in FP7 GA



*"each beneficiary shall take all necessary steps to avoid commitments that are incompatible with the obligations provided for in this grant agreement and inform the other beneficiaries and the Commission of any unavoidable obligations which may arise during the duration of the grant agreement which may have implications for any of its obligations under the grant agreement".*

### 3.1.13. Access rights of affiliated entities

Affiliated entities are defined as any legal entities which are under the direct or indirect control of a Participant, or under the same direct or indirect control as a Participant. Article II.34.3 of the FP7 GA, provides that any affiliated entity to a Participant will enjoy access rights on the same conditions as the Participant to which it is affiliated. These Access Rights are limited to affiliated entities based in the EU or the Associated Countries. This has been commended by the Helmholtz Association of German Research Centres<sup>717</sup>, which commented that:

*"the benefit of the projects will favor the European market. It is not in the interest of the Member States and Associated Countries to support industry outside their own market".*

The possibility of affiliated entities to exercise access rights of foreground / background is limited to the purpose of their exploitation of their own foreground from the project. As the Helmholtz Association of German Research Centres<sup>718</sup> states, *"usually this is very limited. A wide use of the project results as such is certainly not bad. However, this can limit the owner's chance of direct exploitation of results, especially if this access is negotiated to be royalty-free".*

UNICE, in its Comments on the Proposal for a 7<sup>th</sup> FP<sup>719</sup>, stated that:

*"a problem also exists under the current rules with regard to affiliated companies within one corporation. It is that affiliated companies cannot freely exchange knowledge generated under the FP within their corporations. For example, given that it is impossible to predict how knowledge generated will be used, having to mention (as the rules currently require) future users means that multina-*

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<sup>717</sup> Helmholtz Association of German Research Centres "Comments on the Innovative Medicine Initiative (IMI) IPR Policy Agreement from the perspective of research organisations" August 2007

<sup>718</sup> *Ibid.*

<sup>719</sup> UNICE Position Paper on FP7, July 2005, available at [ftp://ftp.cordis.europa.eu/pub/fp7/docs/unice\\_fp7.pdf](ftp://ftp.cordis.europa.eu/pub/fp7/docs/unice_fp7.pdf)

*tional companies whose structures change frequently are not able to fully benefit from the FP. Dissemination and preservation activities should be allowed unconditionally under the new participation rules and future standard contract articles of FP7".*

The provision under the FP7 GA which provides that an affiliated entity established in a Member State or associated country shall also enjoy access rights to foreground and background under the same conditions as the Participant to which it is affiliated, only applies to the extent that ownership of foreground was transferred to an affiliate entity established in a Member State or associated country. The beneficiaries may provide for arrangements regarding access rights for affiliated entities in their consortium agreement, including regarding any notification requirements.

#### 3.1.14. Objection by Commission to grant of access

Under FP6, the Commission could object to the grant of access rights to a third party on competitiveness or ethical grounds. Under FP7, as seen above, the Commission can object to the grant of an *exclusive licence* to a legal entity in a *third, not-associated country* on competitiveness or ethical grounds. Thus, there is greater freedom to grant non-exclusive licences to third parties in MS/Associated countries, which encourages greater use and dissemination of results<sup>720</sup>.

### 3.2. Ownership

It is important that ownership of IPR is clear to Participants<sup>721</sup>. This issue, with its attendant costs for SMEs as well as larger companies, recurs frequently. The Royal

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<sup>720</sup> EFP Consulting (European Framework Program Consulting Limited), "The European Union's ICT Program in FP7", Myer W Morron, Version 1.13, 28 August 2008, at para 14.1

<sup>721</sup> In general in non-FP research projects, ownership of IP is usually a major issue for negotiation between parties. For example, in the UNU-MERIT: ASTP (Association of European Science and Technology Transfer Professionals) Survey for Fiscal Year 2007, October 2008, ASTP members were asked who owned the IP rights for inventions created at their affiliated institution. 75% said that only their affiliated institutions held the IP rights, 12% stated that IP rights were held either by the institution or by others (usually the inventor or the government), and 13% stated that the affiliated institution did not own any of the IP. In the latter case, IP rights were held by the inventor. The results were very similar for non-member technology transfer organisations: 72% stated that only their affiliated institutions held the IP rights, 15% reported that the IP rights were held either by the institution or by others, and 13% replied that the affiliated institution did not own any of the IP.

Society of Chemistry's response to the UK Office of Science and Technology's *"7<sup>th</sup> EU R&D Framework Programme – a consultation document"*<sup>722</sup>, suggested that "more emphasis needs to be given to clarification of the ownership of Intellectual Property".

As in FP5 and FP6, under FP7 each contractor is the owner of the foreground which it generates<sup>723</sup>.

The FP7 RfP provides that if employees or other personnel working for a Participant are entitled to claim rights to foreground, the Participant shall ensure that it is possible to exercise those rights in a manner compatible with its obligations under the GA<sup>724</sup>. The scope of persons employed by Participants in this regard is widened as, unlike under FP6, "other personnel" are now mentioned. This clarifies the obligation of the Participant to ensure that the rights which "any" personnel (for example, collaborators, scholars, etc.) may claim to the results of the project by virtue of any national law or agreement will not prejudice the obligations assumed by the GA.

The *European Commission Guide to Intellectual Property Rules for FP7 Projects*<sup>725</sup> states that:

*"Participants must ensure that, where necessary, they reach an agreement with their employees and other personnel if the latter are entitled to claim rights to foreground (including personnel of third parties such as sub-participants, students, etc.), in order for the participant to be able to meet its contractual obligations"*<sup>726</sup>. Such agreements may for instance involve a formal transfer of ownership, or at least the granting of appropriate access rights (with a right to sublicense). For academic institutions, this is especially relevant regarding (a) non-employees such as students, both undergraduate and post-graduate, e.g. PhD stu-

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<sup>722</sup> RSC Response to OST Consultation, available at [www.rsc.org](http://www.rsc.org)

<sup>723</sup> FP7 RfP (Regulation 1906/2006 OJ L 391/1, 30.12.2006), article 39(1) and article II.26.1 GA. In actions specific to SMEs, foreground is owned by the SMEs or the SME Associations. However, they may agree to the contrary and decide, for example, that the owners of some of the foreground will be some of the RTD performers which generated the results concerned.

<sup>724</sup> Article 39(2) of Regulation 1906/2006 OJ L 391/1, 30.12.2006

<sup>725</sup> Version 28/06/2007

<sup>726</sup> For example, for the granting of access rights to foreground to other Participants – see Article 39.2 RfP and Article II.26.3 GA.

*dents), and (b) researchers in those countries having a specific type of "professors' privilege" regime (according to which the researchers concerned may have some personal rights to the results of university research)".*

### 3.2.1. Joint ownership

Under FP7, where several Participants have jointly carried out work generating foreground and where their respective share of the work cannot be ascertained, they will have joint ownership of such foreground<sup>727</sup>.

Under FP7, a default joint ownership regime was introduced<sup>728</sup>. The IPR provisions of preceding FPs did not provide specifically for a situation where a joint ownership agreement was not reached. The FP6 RfP<sup>729</sup> simply stated that:

*"where several Participants have jointly carried out work generating the knowledge ... and where their respective share of the work cannot be ascertained, they shall have joint ownership of such knowledge. They shall agree among themselves on the allocation and the terms of exercising the ownership of the knowledge in accordance with the provisions of this Regulation and of the contract".*

There was no provision for a situation where an agreement was not reached between the joint owners. The absence of a default joint ownership regime permitted a joint owner to block licensing deals with third parties whilst not using the results themselves.

Under FP7, in the absence of an agreement on the allocation and terms of exercising the joint ownership, each of the owners is entitled to grant non-exclusive licenses to third parties, without any right to sublicense, subject to (1) prior notification to the other joint owners, and (2) the payment of fair and reasonable compensation to the other joint owners<sup>730</sup>.

The introduction in FP7 of a joint ownership regime has made it easier for Participants to regulate their joint ownership in cases where Participants have not agreed on the management of the joint ownership<sup>731</sup>. This facilitates exploitation of jointly

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<sup>727</sup> Article 40(1) FP7 RfP

<sup>728</sup> Article 40(2) FP7 RfP

<sup>729</sup> Article 21(3) FP6 RfP

<sup>730</sup> Article 40(2) FP7 RfP

<sup>731</sup> Article 40.1 RfP; Article II.26.2 GA

owned results; but different provisions can still be agreed by the Participants concerned.

The default regime under FP7 will make certain that the results can be fully used while ensuring that the other joint owners receive fair and reasonable compensation. The default regime may also serve as an incentive to conclude a joint ownership agreement<sup>732</sup>. The default rule serves the self-sustainability of the rules, and adds legal certainty for Participants if they want to make use of it.

### 3.2.2. Transfer of ownership

The owner of foreground may transfer that foreground to any legal entity<sup>733</sup>, but must pass on its obligations regarding that foreground to the assignee<sup>734</sup>.

Under FP6, a notification to the Commission was required before any transfer of ownership was possible<sup>735</sup>. This is no longer the case under FP7: section II.27.1 of the FP7 GA, which deals with Transfer of Foreground, provides that where a Participant is required to pass on its obligations to provide access rights, it must give at least 45 days' prior notice to the other Participants of the envisaged transfer, together with sufficient information concerning the envisaged new owner of the foreground to permit the other beneficiaries to exercise their access rights.

The removal of the requirement to notify the Commission in respect of intention to disseminate / publish the results, while retaining the requirement to notify the other Participants, who may object (on the grounds that the transfer would adversely affect its access rights<sup>736</sup>), has reduced bureaucracy in the system. Participants can even waive their right to be notified in advance with respect to transfers of ownership from one Participant to a specifically identified party<sup>737</sup>. For example, it is possible under FP7 to globally authorise transfers from a given contractor to a specifically identified third party (*e.g.*, to its mother company). This stabilises the basic right of the party to protect its own results. This has reduced the restrictions on

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<sup>732</sup> EFP Consulting (European Framework Program Consulting Limited), "The European Union's ICT Program in FP7", Myer W Morron, Version 1.13, 28 August 2008, para 14.1

<sup>733</sup> Article 42(1) FP7 RfP

<sup>734</sup> Article 42(2) FP7 RfP

<sup>735</sup> Article 21(6) FP6 RfP

<sup>736</sup> Section II.27.3 FP7 GA

<sup>737</sup> Section II.27.2 FP7 GA; Article 42(3) FP7 RfP

Participants in their dealing with transfers of ownership. Such ease of transfer is key to companies availing of tax planning measures both in their country of domicile and on a cross-border basis.

The removal of this requirement simplifies the process of transferring ownership while retaining the flexibility for the Commission to introduce such a requirement in those projects where it is appropriate. It was a general feeling among FP6 Participants that the requirement to notify the Commission across the board for each and every transfer was too burdensome, time-consuming and unnecessary<sup>738</sup>.

Restrictions on transfer of ownership have thus been loosened in order to encourage use and dissemination of results, and there is a perception that Participants have more autonomy in relation to transfers of ownership<sup>739</sup>. It has been said that "*the FP7 procedure of ownership handling preserves the interests of all Participants in an equal measure*"<sup>740</sup>.

### 3.3. Protection

#### 3.3.1. Obligation on owner to protect its own foreground

Article 44(1) of the FP7 RfP and article II.28.1 of the GA provide that where foreground is capable of industrial or commercial application, its owner shall provide for its adequate and effective protection, having due regard to its legitimate interests and the legitimate interests, particularly the commercial interests, of the other Participants in the indirect action concerned.

Where the foreground is capable of industrial or commercial application and its owner does not protect it, and does not transfer it to another participant or an affiliated entity established in a Member State or associate country, no dissemination activities may take place before the Commission has been informed<sup>741</sup>. In such

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<sup>738</sup> EFP Consulting (European Framework Program Consulting Limited), "The European Union's ICT Program in FP7", Myer W Morron, Version 1.13, 28 August 2008. at para 14.1

<sup>739</sup> Blaya, Alicia, IPR Helpdesk, "Intellectual Property Rights in FP7", London, 5 July 2007

<sup>740</sup> Helmholtz Association of German Research Centres "Comments on the Innovative Medicine Initiative (IMI) IPR Policy Agreement from the perspective of research organisations", August 2007

<sup>741</sup> Article 44(2) FP7 RfP

cases, the Commission may, with the consent of the Participant concerned, assume ownership of that foreground and adopt measures for its adequate and effective protection. The Participant can refuse consent only if it can demonstrate that its legitimate interests would suffer disproportionately great harm<sup>742</sup>.

Under FP6, if a Participant did not protect, or waived protection in relation to, its foreground, the Commission could adopt protective measures<sup>743</sup>. This provision ensured that any valuable foreground will not be left unprotected<sup>744</sup>. As noted above, this provision is maintained under FP7. However, under FP7, if a participant does not protect the foreground, the foreground may be *transferred to another participant* or the Commission may protect the foreground<sup>745</sup>. Transfer to another participant in the project is now explicitly mentioned. Participants are usually much better placed than the Commission to evaluate the value of the results, seek protection where necessary and use the results<sup>746</sup>.

### 3.4. Dissemination and use

#### 3.4.1. Obligation to use foreground

Participants must use the foreground which they own, or ensure that it is used<sup>747</sup>. Each Participant must ensure that the foreground of which it has ownership is disseminated as swiftly as possible. If it fails to do so, the Commission may disseminate that foreground<sup>748</sup>. The foreground should be disseminated to the public by

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<sup>742</sup> *Ibid.*

<sup>743</sup> Article 22(2) FP6 RfP

<sup>744</sup> IPR helpdesk: "IP Rights in the 7th Framework Programme – Understanding Your Rights and Obligations as a Participant"

<sup>745</sup> Article 44(2) FP7 RfP

<sup>746</sup> EFP Consulting (European Framework Program Consulting Limited), "The European Union's ICT Program in FP7", Myer W Morron, Version 1.13, 28 August 2008, at para 14.1

<sup>747</sup> Article 46(1) FP7 RfP ; Condition II.30.1, FP7 GA

<sup>748</sup> Article 46(2) FP7 RfP

the Participants informing the public and/or experts in relevant area and/or policy-makers etc. of the results of their research work<sup>749</sup>.

### 3.4.2. Prior notification

Participants are obliged to notify other Participants at least forty-five days<sup>750</sup> before undertaking any dissemination activity<sup>751</sup>. Objection is possible if any of the other Participants consider that their legitimate interests in relation to its foreground or background could suffer disproportionately great harm. In such cases, the dissemination activity may not take place unless appropriate steps are taken to safeguard these legitimate interests<sup>752</sup>.

Under FP6, the Commission, along with other Participants, were entitled to prior notice of any planned publication. The Commission and the other Participants could object to the publication within a period of thirty days from receipt of the data, if they consider that the protection of their knowledge could thereby be adversely affected<sup>753</sup>.

Under FP7, the requirement of prior notification to the Commission prior to publication has been removed. Feast, the Forum for European-Australian Science and Technology cooperation<sup>754</sup> comments favourably on this, noting that

*"the coherence of dissemination and publication requirements has been improved, with prior notification of the Commission for publication of results eliminated. The dissemination rules have been simplified (Article 46). The obligation to no-*

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<sup>749</sup> IPR helpdesk: "IP Rights in the 7th Framework Programme – Understanding Your Rights and Obligations as a Participant", available at [www.fp7.org.tr/tubitak\\_content\\_files/267/IPR/IPR\\_FP7-Guide.pdf](http://www.fp7.org.tr/tubitak_content_files/267/IPR/IPR_FP7-Guide.pdf)

<sup>750</sup> Unless otherwise agreed in writing: condition II.30.3 FP7 GA

<sup>751</sup> Article 46(4) FP7 RfP

<sup>752</sup> Article 46(4) FP7 RfP

<sup>753</sup> Article 22(3) FP6 RfP

<sup>754</sup> [www.feast.org/fp7/?documents/contract](http://www.feast.org/fp7/?documents/contract), a project supported by International Science Linkages established under the Australian Government's innovation statement, Backing Australia's Ability, which received funding from the European Commission's Seventh Framework Programme.

FEAST is hosted by The Australian National University on behalf of Australia's research community.



*tify the Commission was removed as the other Participants are much better placed to deal with such dissemination intentions*<sup>755</sup>.

Under FP6, Participants were required to ensure that foreground was disseminated within a period of two years from the end of the project. If the Participants failed to do so, the Commission could disseminate the foreground<sup>756</sup>. Under FP7, there is no time limit for agreeing the terms for use of foreground and so the parties can wait until it is clear what foreground has emerged and the manner by which it might be exploited, before deciding the terms on which it should be licensed<sup>757</sup>. Changes such as this ensure maximum flexibility for the Participants in organising their co-operation. The removal of the time limit permits adjustments which may be necessary during the course of the project.

### 3.4.3. Enhanced visibility of EC support

There is enhanced visibility of EC support<sup>758</sup> under FP7. FP7 reinforces the obligation to mention in any publication that results have been achieved with EC financial support. Article 45 of the FP7 RfP provides that any publication or any other dissemination activity, patent applications filed and patents issued on the results must include a statement specifying that the foreground in question was made with assistance of financial support from the European Community.

The FP7 GA specifies the statement to be included as follows<sup>759</sup>:

*"The research leading to these results has received funding from the [European Community's] [European Atomic Energy Community's] Seventh Framework Programme ([FP7/2007-2013] [FP7/2007-2011]) under Grant Agreement No. [xxxx]"*

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<sup>755</sup> EFP Consulting (European Framework Program Consulting Limited), "The European Union's ICT Program in FP7", Myer W Morron, Version 1.13, 28 August 2008, at para 14.1

<sup>756</sup> Provided that dissemination of knowledge would not adversely affect its protection or use: condition II.34.2, 2003 ECMC

<sup>757</sup> C. ROHLL, "FP7 - IP Tricks and Traps" Feb 29, 2008, Mondaq Business Briefing, 4EUUK, available at [www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727](http://www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727)

<sup>758</sup> IPR Helpdesk "The IPR Regime under FP7: Overview and Comparison with FP6", January 2007

<sup>759</sup> Condition II.30.4, FP7 GA

Previously the requirement to mention EC support was only in the ECMC and not in the RfP per se. This requirement does not overly burden Participants from a cost-perspective, enhances visibility for EC funding and facilitates impact assessments.

#### 4. Issues encountered by participants in negotiation of IPR in Framework Programmes

During the course of the study, it became apparent that certain issues have been regularly encountered by Participants in their negotiation of IPR in projects funded by the FPs. While this does not purport to be an exhaustive account of all issues which have arisen during negotiations, the following is a brief overview of certain issues which have arisen in commentary pertinent to this chapter.

Despite attempts to increase awareness among Participants of the importance of reaching an agreement regarding the ownership and use of IP at an early stage of a project, it has been found that most consortia fail to elaborate on the issue of IPR in all phases of the project; planning, execution and conclusion, leaving their outputs open to the risk of improper use by external, and sometimes internal, parties<sup>760</sup>.

The importance of reaching an agreement regarding IPR provisions at an early stage is widely acknowledged. For example, the Royal Swedish Academy of Engineering Sciences, the IVA, in its study entitled *"The Seventh European Framework Programme for Research and Technological Development from a Swedish Perspective"*<sup>761</sup> states that *"the various responsibilities within a consortium, e.g. regarding IPR, should be established in a consortium agreement to avoid future conflicts among the Participants"*<sup>762</sup>.

When negotiating and executing Access Rights, the research organisations are not equal to the industrial partners as they do not have the same means of commercialisation of results nor do they have the same legal support to defend their interests. A

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<sup>760</sup> IPR Helpdesk, "IP Rights in the 7<sup>th</sup> Framework Programme – Understanding your Rights and Obligations as a Participant".

<sup>761</sup> The Royal Swedish Academy of Engineering Sciences, the IVA, "The Seventh European Framework Programme for Research and Technological Development from a Swedish Perspective", 2006, available at [www.iva.se](http://www.iva.se)

<sup>762</sup> *Ibid.*, at page 12

lack of legal support and experience puts research partners at a clear disadvantage during what Rohll<sup>763</sup> describes as *"the painful process of negotiating the contracts required as a condition of the grant"*.

EICTA, in its *Comments on the Outcome of the First FP7 Calls*<sup>764</sup> states that *"IPR issues continue to dominate discussions, and negotiations remain tough, due to the nature of the projects and the diverse expectations and interests of the (frequently large number of) parties involved. Project Participants must now explicitly choose between royalty-free and fair-and-reasonable-conditions for access to foreground intellectual property and to negotiate the relevant terms accordingly, which obviously leads to much argumentation. Also the subject of joint ownership of foreground, assigning of ownership of foreground and positive or negative listing of background, (without the so-called sideground to be included) have led to intensive discussions"*.

Thus, the Helmholtz Association of German Research Centres notes that *"legal certainty must be ensured in order to protect the interests of the research organisations and spare all concerned the time-consuming negotiations which might ultimately lead to failure to reach an agreement"*<sup>765</sup>.

Negotiations are an almost-inevitable feature of an agreement on IPR provisions. As Rohll states that *"some of the most hotly contested clauses in the consortium agreement are inevitably those dealing with the ownership of, and access to, IP"*<sup>766</sup>.

However, if lengthy negotiations are the opportunity cost of establishing a flexible IPR regime, as FP7 has aimed to do, it is likely that future Participants would be deterred from participation in the FPs, more by a rigid set of IPR rules than by the potential for negotiations.

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<sup>763</sup> C. ROHLL, "FP7 - IP Tricks and Traps" Feb 29, 2008, Mondaq Business Briefing, 4EUUK, available at [www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727](http://www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727)

<sup>764</sup> EICTA (European Information and Communications Technology Association) Building Digital Europe, Comments on the outcome of the first FP7 calls, Brussels, May 30, 2008, at page 3

<sup>765</sup> Helmholtz Association of German Research Centres "Comments on the Innovative Medicine Initiative (IMI) IPR Policy Agreement from the perspective of research organisations" August 2007

<sup>766</sup> C. ROHLL, "FP7 - IP Tricks and Traps" Feb 29, 2008, Mondaq Business Briefing, 4EUUK, available at [www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727](http://www.thefreelibrary.co.uk/print/PrintArticle.aspx?id=175684727)

## 5. Projects involving SMEs

The 2008 *Abo Report*<sup>767</sup> highlighted the need to cut red tape to attract more SMEs to EU research. It is imperative to ensure that SMEs are encouraged to participate in the FPs. In FP7, the IPR provisions have been adapted to better suit the needs of SMEs<sup>768</sup>. The European Commission DG Research information note on *Health Research in FP7* states that

*"the rules governing IP in EU-funded projects have been greatly improved in the last framework programmes. Clearer IPR rules are designed with more attention to the special needs of SMEs".*

Similarly, the European Commission DG Research in its information note on "*Opportunities for Collaborative Research in the Health Theme of FP7*"<sup>769</sup> lists, as one of the "improved conditions" in FP7, "better protection: IPR rules have been adapted to SMEs needs".

In the case of an association representing SMEs, which commissions research to be carried out by researchers on its behalf, the default regime is for the IPR to be held by the SME association on behalf of its members (or if an SME itself has commissioned the research, then the default provision is for the IPR to be held by the SME). Provision is allowed for alternate negotiations to be made within the consortium.

EARTO<sup>770</sup> states that:

*"(an) important change related to IPR. In the past the default regime was that IP rights were accorded to the beneficiary SMEs or SME associations. In FP7, the general rule remains that IP will normally go to the SMEs or SME associations, but there is explicit recognition that other arrangements may be made. In particular, the research performers may retain IP rights. The quid pro quo is that*

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<sup>767</sup> (MEMO/08/430) available at [ec.europa.eu/dgs/information\\_society/evaluation/rtd/fp6\\_ist\\_expost/index\\_en.htm](http://ec.europa.eu/dgs/information_society/evaluation/rtd/fp6_ist_expost/index_en.htm)

<sup>768</sup> Dr. Jean-Luc SANNE, Directorate Health, DG Research European Commission "The Health Theme – 3<sup>rd</sup> Call – Opportunities and Conditions"

<sup>769</sup> Hogan, Stephane, Horizontal Aspects and Coordination, Directorate Health, DG Research European Commission, "Opportunities for Collaborative Research in the Health Theme of FP7", 2006

<sup>770</sup> EARTO, European Association of Research and Technology Organisations, EARTO News, 23 April 2007

*the price paid by the SMEs or SME associations to the research performers should then reflect the value of any IP rights granted to the latter".*

SME Associations therefore have the possibility to find tailor-made solutions to organise the ownership of project results and its dissemination and use, in a way that takes into account the needs, interests and capabilities of the SME / SME associations and their members, of the other enterprises and end-users involved in the project, as well as the RTD performers. The arrangement must ensure that SME associations are provided with all the rights which are required for the intended use and exploitation of the project results by their members. In practice this can mean that the RTD performers keep ownership of the entire foreground, or parts of it, and that the SME / SME associations and their members acquire licenses only. In exchange, the RTD performers co-invest with their own resources in the project.

These provisions will go some way to meeting the numerous public calls that the IPR provisions become more SME-friendly.

MAPO<sup>771</sup> has commented<sup>772</sup> that *"problems relating to SMEs' participation in FP projects are mainly linked to a lack of information of the IPR provisions. Evidence of SMEs having problems with IPR emerged. Generally SMEs do not have the legal expertise to optimally protect and exploit their IPR. This may result in delays in results exploitation".*

The Royal Swedish Academy of Engineering Sciences, the IVA, in its 2006 study entitled *The Seventh European Framework Programme for Research and Technological Development from a Swedish Perspective*, stated that

*"SMEs are eager to participate [in the FPs] so that they can develop important networks and get ownership of IPR, thereby strengthening their position"*<sup>773</sup>.

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<sup>771</sup> The MAPO initiative is the response to a call for a proposal launched by the European Commission within the 6th Framework Programme. The project focuses on the area of marine pollution and its goal is to enhance the integration of SMEs, which are skilled in this specific field, into RTD European projects.

<sup>772</sup> See "MAPO Objectives" available at [www.marine-pollutions.org/mapoobjectives.php](http://www.marine-pollutions.org/mapoobjectives.php)

<sup>773</sup> *Ibid.*, at page 28

## 6. Practical impact

### 6.1. Simplification

The *Commission Staff Working Document on Simplification in FP7*<sup>774</sup> suggested that further simplification and rationalisation must be the *sine qua non* for the future. It acknowledged that participation in FP6 remained complex for non-administrators and in particular for smaller actors. Sciuto<sup>775</sup> (2007) states that this has been achieved and that the IPR provisions in FP7 have been clarified and simplified, due to easier terms and conditions.

The aim of FP7 was thus to simplify the administrative and financial rules for participation in the FP, in order to make participation in FP7 less costly and cumbersome for all. Many agree that the IPR provisions in FP7 have indeed been successfully simplified. For example, a recent study by EFP Consulting<sup>776</sup> states that:

*"the IPR rules regarding the protection, dissemination and use of knowledge have been simplified and a larger flexibility is granted to the Participants".*

EFP Consulting lists four methods through which this flexibility and simplification have been achieved:

- the terminology has reverted to that used in previous FPs but abandoned by FP6, i.e. "background" and "foreground" IPR;
- the rules are identical for all Participants;
- the rules concentrate on the principles and provisions considered necessary for efficient cooperation and the appropriate use and dissemination of the results; and
- participants may define among themselves the arrangements which fit them best within the framework provided in the grant agreement<sup>777</sup>.

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<sup>774</sup> COM(2005)119 final, Brussels, 6.4.2005, SEC(2005) 431

<sup>775</sup> Sciuto, Alberto, "The 7<sup>th</sup> Framework Programme: Overview, Objectives and Rules for Participation", 29 May 2007, Cairo, Egypt

<sup>776</sup> European Framework Program Consulting Limited, Myer W Morron, "The European Union's ICT Program in FP7" Version 1.13, 28 August 2008, at 3.5.4

<sup>777</sup> *Ibid*, at para 3.5.4

On the issue of clarity of IPR in general, the response of BioIndustry Association Scotland to the Scottish Executive Consultation on Science and Innovation Strategy for Scotland<sup>778</sup> is of note:

*"Clarity of IPR ownership is perhaps the most important issue. A lack of clarity increases the risk for any licensee or investor, both the risk of deal failure and the risk that the IPR itself will be challenged in the future. It should be clear who owns the IPR, who is responsible for licensing the IPR and what the reward split between the parties should be (inventor : institution : funder).*

*Any commercialisation partner (be they a licensee investing cash and development resources, a financial investor investing cash or an entrepreneur investing time, energy and reputation in a potential innovation) will only put effort into the complex negotiation, due diligence and legal processes for gaining rights to the intellectual property behind such innovation if there is a clear process to negotiate for the rights and where they deem there is a high chance of success. Experienced business development and licensing professionals all have horror stories about the difficulty of trying to deal with multiple and inexperienced parties and more often than not these end in failure".*

Similarly, the London Institute of Physics in its *Response to DTI consultation on FP7*<sup>779</sup>, stated, in response to the question of whether some restructuring in FP7 was necessary in order to boost industry (especially SME) participation in the mobility activities, that *"there must be greater involvement of business and industry. The issues of intellectual property and commercial competition have to be faced"*.

Although FP7 has indeed "faced" the issue of IP by simplifying its provisions and affording more flexibility and autonomy to Participants, there remains a perception, on the part of some commentators, that funding of FP7 projects *"comes with strings attached and the grant conditions, particularly those relating to IP, do not suit everyone"*<sup>780</sup>.

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<sup>778</sup> BIA Scotland, Response to the Scottish Executive Consultation on Science and Innovation Strategy for Scotland available at [www.scotland.gov.uk/Resource/Doc/981/0044694.pdf](http://www.scotland.gov.uk/Resource/Doc/981/0044694.pdf)

<sup>779</sup> Institute of Physics response to a DTI consultation on 7<sup>th</sup> EU R&D Framework Programme, 26 July 2004

<sup>780</sup> C. ROHLL, "FP7 - IP Tricks and Traps" Feb 29, 2008, Mondaq Business Briefing, 4EUUK, available at [www.thefreelibrary.co.uk/\\_/print/PrintArticle.aspx?id=175684727](http://www.thefreelibrary.co.uk/_/print/PrintArticle.aspx?id=175684727)

Nonetheless, the IPR provisions have evolved into a flexible form and efforts have been made to simplify procedures for Participants in the FPs. The Commission's *Annual Report on research and technological development activities of the European Union in 2007*<sup>781</sup> noted that the various documents needed for researchers to participate in FP7, including guides on IP, were available on time and were simpler than the previous ones. It can therefore be seen that the procedures in place for increasing the awareness and understanding of the IPR provisions have been improved as the IPR provisions in the FPs have improved.

The recent Commission Recommendation on the Management of Intellectual Property in Knowledge Transfer activities and Code of Practice for Universities and other Public Research Organisations<sup>782</sup> demonstrates the commitment of the Commission to improvements in this area, and acknowledges that "*effectively exploiting publicly funded research results depends on the proper management of intellectual property*"<sup>783</sup> and that "*the active engagement of public research organisations in intellectual property management and knowledge transfer is essential for generating socio-economic benefits, and for attracting students, scientists and further research funding*"<sup>784</sup>.

## 6.2. Public opinion on the IPR provisions of the FPs

A public opinion survey carried out in the Czech Republic on the *"Interpretation of the Questionnaire on Preparation of the Czech Republic's position on future European Union research policy"*<sup>785</sup> summarised respondents' views of eight FP5 and FP6 features. In response to the question on "management of IPR – from the start of the project to the implementation of project results", of 266 respondents questioned,

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<sup>781</sup> Report from the Commission "Annual Report on research and technological development activities of the European Union in 2007" SEC (2008) 2380, Brussels, 18.8.2008, COM (2008) 519 final

<sup>782</sup> Of 10 April 2008, notified under document number C (2008) 1329, OJ L 146, 05/06/2008 p. 0019-0024

<sup>783</sup> *Ibid.*, Recital 3

<sup>784</sup> *Ibid.*, Recital 4. Other measures in this field by the European Commission include the EU-China Project on the Protection of Intellectual Property Rights ("IPR2") which was launched towards the end of December in Beijing, which will offer a comprehensive compilation of EU and Chinese IP legislation, see [www.ipr2.org](http://www.ipr2.org)

<sup>785</sup> Public Opinion Survey on the future of European Research triggered by Document COM (2004) 353 published by the European Commission on 16 June 2004



42% of respondents considered the feature as positive in relation to FP5, and 16% evaluated the feature negatively. In relation to FP6, 45 % of respondents considered the feature positive, and 17% viewed the management of IPR as a negative feature of the FP. It can thus be seen that, while it seems that some respondents were not satisfied with the IPR provisions, a larger percentage were satisfied, with the remainder not expressing a view in this regard.

An independent report for the UK Office of Science and Technology, conducted by Technopolis Limited in July 2004 and entitled *The Impact of the EU Framework Programmes in the UK*,<sup>786</sup> found that "inadequate or inconsistent IPR protection" was a factor hampering the development of the information society and RTD effort. The UK Department of Trade and Industry<sup>787</sup> stated that:

*"no significant associations were found between project success and either the human resources or IPR arrangements, which suggests that the growing concern with intellectual property, and the associated expansion in Framework rules and procedures, may be unwarranted, at least in terms of project wellbeing".*

However, UNICE, in its *Comments on the Proposal for a 7<sup>th</sup> FP*<sup>788</sup>, commented on the importance of the IPR provisions, and noted that:

*"FP 7 must allow for adequate protection of IP. Real and genuine cooperation will be a non-starter if this issue is not dealt with properly. To allow high tech firms to effectively participate in FP7, to stimulate innovation in Europe and to ensure the attractiveness of its business climate, it is crucial to preserve the patentability of inventions".*

### 6.3. Increasing awareness of IPR principles among Participants

Initiatives such as the IPR Helpdesk<sup>789</sup> assist Participants in understanding the principles governing the IPR in the FPs. It is important that Participants under-

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<sup>786</sup> As part of FP6-2004-IST-3, Contract No 015878 Great-IST [INNOV-1] Research and Innovation D6.5 "Links between IST Research and Business: Impact Assessment and Recommendations", 29 May 2007

<sup>787</sup> Now the Department for Business, Enterprise & Regulatory Reform in the UK

<sup>788</sup> UNICE Position Paper on FP7, July 2005

<sup>789</sup> The IPR-Helpdesk is organised by the University of Alicante and assists potential and current Participants on IP matters. SMEs and public research organisations are its main target users.

stand these principles before committing to a project. The Royal Society of Chemistry's Response to the UK Office of Science and Technology's *7<sup>th</sup> EU R&D Framework Programme – a consultation document*<sup>790</sup>, in response to the question of *"how the framework programme could be made more attractive to industry and increase private sector R&D development"*, replied that one of the measures which could be introduced to make the FPs more attractive to industry is that it could provide *"clearer advice in relation to intellectual property rights"*.

Some commentators argue that increased public awareness and understanding of IP in general is necessary. The EPO commented, in 2004, that the legal framework alone is not sufficient, so long as those involved in the production of knowledge do not have the know-how to manage IPR properly<sup>791</sup>. However, guidelines such as the *European Commission Guide to Intellectual Property Rules for FP7 Projects*<sup>792</sup> greatly assist in increasing public understanding of the IP provisions. Guidelines are an important aid to Participants, and in particular to SMEs who, unlike large organisations, might not be in a position to inform themselves of the IP provisions without such assistance.

#### 6.4. Workshop

A workshop of key stakeholders invited by the European Commission was held to discuss the initial findings of this chapter<sup>793</sup>. One participant noted that the removal of the requirement for contractors to draw up long lists of exclusions in relation to the granting of access rights to background IP, as was required under FP6, represented a significant improvement under FP7. Under FP6, this was a lengthy task for contractors with a large amount of background knowledge.

It was noted that the exclusion of sideground was a worthy and important development which would lead to less confusion over the identification of information the subject of access rights. The clarification of the definition of background informa-

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<sup>790</sup> RSC Response to OST Consultation, available at [www.rsc.org](http://www.rsc.org)

<sup>791</sup> Letter from EPO Vice President Desantes to Research Commissioner Michel of October 2004; available at <http://www.european-patent-office.org/news/info/survey2003index.phg>. Studies by the EPO reveal, for example, that Europeans use patent information facilities and other IP information tools less than Americans

<sup>792</sup> Version 28/06/2007, available at [ftp://ftp.cordis.europa.eu/pub/fp7/docs/ipr\\_en.pdf](ftp://ftp.cordis.europa.eu/pub/fp7/docs/ipr_en.pdf)

<sup>793</sup> Held in Brussels, 15 January 2009

tion (which is "needed" for the project) was commended as increasing the attractiveness of FP funding for potential contractors.

In relation to joint ownership, the majority of the participants were in unanimous agreement that typically, consortiums will attempt to avoid the result of joint ownership by distinguishing the contribution of each participant as much as possible. While it was agreed that the inclusion of a default regime for joint ownership was an improvement on the absence of a default regime, one participant questioned the terms of the default regime under FP7. He stated, for example, that the granting of non-exclusive licences under the default joint ownership regime under FP7 may not be attractive when working with start-up companies, which may be required to grant exclusive licences.

Some participants raised and debated the possibility of imposing an obligation on participants to check the "state of the art" and existing IP rights prior to submitting a proposal for an FP project. It was concluded that while such an exercise may be useful in identifying the feasibility of the project in terms of the existing portfolio of patents and any obstacles to the registration of IP rights for project results, it would, however, be time-consuming and difficult to establish whether such obstacles are, for example, only non-valid patent applications. Such an obligation could also cause patents to inhibit development in areas in which many patents have been granted or applied for.

One participant suggested that there should be a time-limit in relation to reaching agreements on consortium agreements under the FPs. However, another participant stressed that *"flexibility of IPR is key"*, as *"IPR is always a case-by-case negotiation"*. In reply to the question of whether the IPR provisions were sufficiently flexible, one participant stated that it would always depend on the project involved.

### 6.5. Current survey

In response to our survey, 75% of respondents indicated that they dealt with IP issues in the context of the FPs (45% dealt with such issues frequently; and 30% dealt with such issues occasionally), while the remaining 25% did not deal with IP issues in the context of the FPs at all. Some respondents remarked that universities were often not consulted by industry stakeholders in the process of agreeing individual IPR issues.

48% of respondents stated that they occasionally encounter issues regarding ownership of IP in the FPs, with 14% stating that they frequently encounter such issues. 14% of respondents stated that they never encountered such issues, with the remaining 24% not expressing an opinion. One respondent indicated that ownership of IP is a huge issue in projects funded through the FPs, particularly in terms of reaching an agreement.

10% of respondents "strongly agreed" with our finding that the current IPR regime represents an improvement on that of the previous FP, and on its predecessors, and a further 60% "agreed" with this finding. 5% disagreed with this finding, while the remaining 25% did not express an opinion.

50% of respondents agreed that the IP provisions in the FPs are user-friendly and clear (5% strongly agreed; 45% agreed); while 35% disagreed and 15% did not express an opinion.

Only 15% of respondents indicated that the IP provisions in the FPs deterred them, or their representative organisations, from entering into an FP project (5% strongly agreed; 10% agreed). 40% of respondents indicated that they had not been deterred from entering into an FP project (30% disagreed; 10% strongly disagreed), and 45% did not express an opinion. Some respondents noted that the provisions in the FP7 GA which obliged Participants to grant access rights were seen as problematic and a deterrent to participation, as parties discontinue the project proposal when an agreement is not reached on the access rights to be granted by each Participant. This point was noted previously; that the exclusion of background can lead Participants to reconsider the identity or number of members of the consortium in the event that rights which are necessary for the project are being withheld. Another respondent also indicated that the obligation to identify and make available background IP was a "consistently thorny issue" among Participants.

A respondent suggested that it might be possible, in the next GA to be issued, to publish two or three, as opposed to one, standard versions of the IPR sections of the GA, from which Participants could choose according to their requirements. The respondent stated that he did not agree with the provisions on access rights, and always sought to amend these through agreement prior to accession to the contract.

One respondent indicated that issues remained with the identification of background IP in practice. Another respondent noted that the main issue for his organisation in relation to IP in the FPs lay in the availability of background information

and IP, in that an obligation to maintain it and keep it available for all possible uses is overly-burdensome.

Another respondent indicated that the "IP provisions of the FPs open the door to more autonomy of the participants" and that Participants need to be made aware of services at their disposal such as the IPR-Helpdesk. The respondent stated that "signposting of these services for the benefit of Participants should be emphasised and encouraged from any local, regional or national organisation/network relating to potential/current Participants".

## 7. Conclusions

It appears from our analysis that the IPR provisions as currently drafted are operating as intended, and, have, in the main, been well received by Participants under FP7. An appropriate balance appears to have been struck between the need to afford sufficient flexibility to Participants and the need to ensure that the results of projects funded by the EU are put to use for either commercial or further research purposes.

This chapter illustrates that the provisions on access rights and transfer of ownership have become less restrictive to Participants with the successive ECMCs / GAs relating to each FP. Entitlements to access rights no longer appear to be a deterrent to participation in the FPs: the updating of each ECMC brought about a reduction in the number of entities entitled to access rights. The regime in relation to access rights has thus been simplified and the protection for Participants' interests has been increased.

FP7 has removed most obligations of prior notice to the Commission for publication, transfers of ownership and provision of access rights to third parties, where all other Participants agree. The notification obligations on a Participant in relation to other Participants before using or licensing foreground have also been loosened.

In drafting the GA, the Commission is not expected to create a *"one size fits all"* document; its objective is rather to streamline and clarify the provisions for Participants. It would appear that this objective has been achieved, as the IPR provisions have become less complex and extensive, and afford more autonomy and flexibility to Participants in the FPs.

## 8. Recommendations

- The IPR provisions as currently drafted appear to be working well and should be maintained in their present form.
- The default regime for joint ownership of foreground should be maintained.
- Guidelines on the application of the IPR provisions in the FPs should continue to be issued by the Commission in order to promote awareness and understanding of the issues involved.
- As the commercialisation of research results is the *raison d'être* of the FPs, the importance of use and dissemination should be emphasised through public awareness processes.

## 9. Table of Framework Programmes and corresponding model contracts / grant agreements

Framework Programme	Council decision concerning fp*	Official model contract / grant agreement	Rules for participation
FP1 – 1984 to 1987	Council Decision of 22 December 1983 adopting a research programme to be implemented by the Joint Research Centre for the European Atomic Energy Community and the EEC <sup>794</sup>	No official model contract in place	No rules issued
FP2 – 1987 to 1991	Council Decision of 28 September 1987 concerning the framework programme for Community activities in the field of research and technological development (1987 to 1991) <sup>795</sup>	Two ECMCs published 1 October 1988: Actual Cost Contract & Fixed Contribution Contract	No rules issued
FP3 – 1990 to 1994	Council Decision of 23 April 1990 concerning the framework programme of Community activities in the field of research and technological development <sup>796</sup> Council Decision of 15 March 1993 adopting Decision 90/221/Euratom, EEC, concerning the framework pro-	1988 ECMC continued in use	No rules issued

<sup>794</sup> Decision No. 84/1/Euratom, EEC, OJ L 003, 05.01.1984

<sup>795</sup> Decision No. 87/516/Euratom, EEC, OJ L 302/1, 24.10.1987

<sup>796</sup> Decision No. 1990/221/Euratom, EEC, OJ L 117/28, 8.5.1990

Framework Programme	Council decision concerning fp*	Official model contract / grant agreement	Rules for participation
	gramme of Community activities in the field of research and technological development <sup>797</sup>		
FP4 – 1994 to 1998	Council Decision of 26 April 1994 concerning the fourth framework programme of the European Community activities in the field of research and technological development and demonstration <sup>798</sup>	Two new ECMC published in July & September 1995: Cost reimbursement ("actual cost") Model Contract & Fixed Contribution Model Contract	Council Decision of 21 November 1994 concerning the rules for the participation of undertakings, research centre and universities in research, technological development and demonstration activities of the European Community <sup>799</sup>
FP5 – 1998 to 2002	Decision No 182/1999/EC of the European Parliament and of the Council of 22 December 1998 concerning the fifth framework programme of the European	Minor amendments made to 1995 ECMC in 1998; New version of ECMC published on 9 September 1999 <sup>800</sup>	Council Decision of 22 December 1998 concerning the rules for the participation of undertakings, research centres and universities and for the dissemination of research results for the im-

<sup>797</sup> Decision No 93/167/Euratom, OJ L 69/43, 20.3.93

<sup>798</sup> Decision No. 1110/94/EC, OJ L 126, 18.05.1994; as adapted by Decision No 2535/97/EC of the European Parliament and of the Council of 1 December 1997 and Decision No 616/96/EC of the European Parliament and of the Council of 25 March 1996

<sup>799</sup> Decision No. 94/763/EC, OJ L 306, 30.11.1994

<sup>800</sup> Available at [www.ipr-helpdesk.org/documentos/docsPublicacion/pdf/8\\_moc\\_rtdp\\_en\\_199901%5B00000000975\\_03%5D.pdf](http://www.ipr-helpdesk.org/documentos/docsPublicacion/pdf/8_moc_rtdp_en_199901%5B00000000975_03%5D.pdf) ; Flat-Rate version available at [www.ipr-helpdesk.org/documentos/docsPublicacion/pdf/8\\_moc\\_frcec\\_en\\_199901\[00000000999\\_03\].pdf](http://www.ipr-helpdesk.org/documentos/docsPublicacion/pdf/8_moc_frcec_en_199901[00000000999_03].pdf); Deliverables Version published, 08 November 1999, available at [www.ipr-helpdesk.org/documentos/docsPublicacion/pdf/8\\_moc\\_delec\\_en\\_199901%5B00000001013\\_03%5D.pdf](http://www.ipr-helpdesk.org/documentos/docsPublicacion/pdf/8_moc_delec_en_199901%5B00000001013_03%5D.pdf)



## IPR provisions in the Community Framework Programmes

Framework Programme	Council decision concerning fp*	Official model contract / grant agreement	Rules for participation
	Community for research, technological development and demonstration activities		plementation of the fifth framework programme of the European Community <sup>801</sup>
FP6 – 2002 to 2006	Decision No 1513/2002/EC of the European Parliament and of the Council of 27 June 2002 concerning the Sixth Framework Programme of the European Community for research, technological development and demonstration activities, contributing to the creation of the European Research area to innovation <sup>802</sup>	New ECMC published on 23 October 2003 <sup>803</sup>	Regulation No. 2321/2002 of the European Parliament and of the Council concerning the rules for the participation of undertakings, research centres and universities in, and for the dissemination of research results for the implementation of the European Community Sixth framework Programme <sup>804</sup>
FP7 – 2007 to 2013	Council Decision No. 1982/2006/EC of the European Parliament and of the Council concerning the Seventh Framework Programme of the European Community for research, technological devel-	New ECMC approved by Commission 10 April 2007; Version 2 of this ECMC published on 2 October 2008 <sup>806</sup>	Regulation No. 1906/2006 of the European Parliament and of the Council laying down the rules for the participation of undertakings, research centres and universities in actions under the Seventh Framework Programme and for the

<sup>801</sup> Council Decision 1999/65/EC, of 22 December 1998, OJ L 026, 01.02.1999

<sup>802</sup> Decision No 1513/2002/EC of 27 June 2002, OJ L 232/1, 29.08.2002

<sup>803</sup> Approved by Commission Decision C (2003) 3834, 23.10.03, available at [ec.europa.eu/research/fp6/working-groups/model-contract/pdf/annex-ii-general-conditions\\_en.pdf](http://ec.europa.eu/research/fp6/working-groups/model-contract/pdf/annex-ii-general-conditions_en.pdf)

<sup>804</sup> Regulation (EC) No. 2321/2002, 16 December 2002, OJ L 355, 30.12.2002

<sup>805</sup> Council Decision No 1982/2006/EC, 18 December 2006

Framework Programme	Council decision concerning fp*	Official model contract / grant agreement	Rules for participation
	opment and demonstration activities <sup>805</sup>		dissemination of research results (2007-2013) <sup>807</sup>

*\* There are further Council decisions regarding specific programmes under each FP (for example, in the field of marine science and technology) which are not set out here as they are outside the scope of this report.*

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<sup>806</sup> Available at [ftp://ftp.cordis.europa.eu/pub/fp7/docs/fp7-ga-annex2-v2\\_en.pdf](ftp://ftp.cordis.europa.eu/pub/fp7/docs/fp7-ga-annex2-v2_en.pdf)

<sup>807</sup> Regulation (EC) No 1906/2006, 18 December 2006, OJ L 391/1, 30.12.2006



# Chapter 9

## Identification of IPR/TT awareness and training activities

"Improving the awareness and basic skills of the research community regarding intellectual property and technology transfer has been identified as an important objective, in particular with a view to facilitating university-industry relations. While some higher education institutions have already integrated an introduction to these issues in their scientific/engineering/business school curricula, this is still the exception rather than the rule, and there is a need to assess the state of play and to identify good practices, with a view to promoting their wider application. "

This chapter presents the outcome of a survey conducted in 2007 and 2008 with respect to the main types of awareness and training activities for IPR and technology transfer that are actually available in higher education institutions throughout the European Member States. It contains a detailed analysis of our methodology and an analysis of the gathered data and conclusions.

## 1. Methodology

### 1.1. Sub-tasks

We broke down the main task into two separate sub-tasks:

- The first sub-task consisted of gathering a **list of relevant academic staff-members** and their contact information. We generally noticed that the most suitable persons for the interviews were the deans or vice-deans for academic affairs of each faculty. Nonetheless, several other persons with different titles or functions were sometimes interviewed, as the academic organisation varies from one Member State to another, and from one academic institution to another.
- The second sub-task consisted of the actual **interviewing** of the persons on our list, preferably by telephone, but in several cases by completing a questionnaire by email. The interview was standardised, but allowed for some flexibility to cope with specific situations in some Member States.

### 1.2. Target groups

#### 1.2.1. By student type (graduate students, undergraduate students and PhD students)

Our survey targeted graduate students, undergraduate students and PhD students.

It should be noted that the distinction between graduate students and undergraduate students was not clear for all institutions. Although the purpose of the Bologna Accord (1999) was to create a European space for higher education through harmonisation of the legislation of the signatory States, these reforms were not carried out at the same pace in all the EU signatory countries. Consequently, several differences could be seen between the various Member States.

We focused mainly on the bachelors and masters degree curricula whenever possible. At the time our survey was conducted, most academic institutions were still in transition periods, which implied that the so-called "*old system*" and the "*Bologna system*" are co-existing side by side. When no Bachelor-Master system had been implemented in a particular Member State, and also when the content of the future study programmes was still unknown, we used the existing study programmes.

### 1.2.2. By discipline (science, engineering and business students)

#### a. *Science students*

We broke down this category into two types of science students, in order to cover a wide array of study curricula: medical faculties/schools and chemistry faculties/departments.

Contrary to chemistry studies – which are generally named and educated similarly across the EU Member States – we noted some overlap between medicine studies, pharmaceuticals and biomedicine. The latter disciplines are not taught in all Member States, and overlap with chemistry studies.

#### b. *Engineering students*

While we initially focused on civil engineering, we eventually decided to include all types of engineering students, because engineering curricula are usually grouped in one faculty and IPR/TT courses are usually available to all categories of engineering students. Where possible, we left out chemical engineering studies to avoid redundancy, because chemistry students were already covered in the above category of "*science students*".

#### c. *Business students*

Member States seem to differ in their business curricula. For example, some countries have faculties of economics that offer business programmes, some have what they call "*business schools*", and still other institutions offer management studies that are closely related to business studies.

## 1.3. Data gathering

### 1.3.1. Finding institutions

Our goal was to survey at least 250 higher education institutions across the EU. Considering the number of EU Member States (27), we broke down this number to about 10 institutions per Member State. However, as some smaller Member States have less than 10 relevant institutions, we were required to include more than 10 institutions for larger Member States, in order to reach the amount of 250 institutions.

The following guidelines were taken into account when deciding which institutes to include per country:

- a geographical/regional **spread** must be ensured;
- institutions in **major cities** are preferred;
- if several institutions are present in one city, the institute that offers the **most complete academic programmes** is selected; and
- entirely private institutions of which the degrees are not accredited by the State's Ministry of Education, are avoided.

Several sources were consulted to decide which institutions to contact for each target country, such as internet websites<sup>808</sup> and colleagues in legal offices. Whenever problems occurred in terms of comprehension of a country's specific or complex higher educational system, or a language problem, we contacted the relevant embassies. If possible, we tried to contact the permanent representative to the EU for education matters, otherwise we tried to talk to one of the ambassador's assistants.

Please note that, although all EU Member States were targeted, no survey data is included for Bulgaria.

### 1.3.2. Finding interviewees

Within each of the four areas of studies (medicine, chemistry, engineering and business), we tried to focus on one single contact point. The following information about this point of contact was collected:

**Name** – We tried to contact each contact point in person, in order to be able to emphasise the most important issues that need to be addressed.

**Academic function** – Deans or vice-deans for teaching affairs were the people most often selected. Nevertheless, at other times different persons appeared to be much more aware of the particular issues we were surveying. These included administrative assistants, student counsels, lecturers teaching the course in question, the rector of the university, or the director of a specific department.

**Phone or email** – We focused on contacting interviewees in person. However, for various reasons, a direct interview with the relevant person was not always possible.

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<sup>808</sup> e.g. [www.4icu.org/Europe](http://www.4icu.org/Europe). This website offers an accurate list of colleges, universities and institutes for higher education per country (including all EU Member States).

In such cases we sent standardised emails, and offered interviewees the possibility to answer our questions by email.

## 1.4. Questions asked during the interviews

### 1.4.1. For graduate students and undergraduate students

- a. *Is there an IPR/TT knowledge or training activity included in the study curriculum?*

This constitutes the entry question to all of the other questions. When the answer was negative – which was unfortunately often the case (see analysis below) – none of the other questions was asked.

- b. *Nature of the provided IPR and TT knowledge and training activities*

The interviewee was presented with a wide array of possible answers: stand-alone course, course module, one-off seminar, side note during lecture, none. These options comprise the various relevant training activities.

- c. *Is the awareness and training activity obligatory or optional?*

This question allowed us to assess the degree of importance assigned to IPR and TT awareness.

- d. *Title of the awareness and training activity*

This question allowed us to gain a better understanding of how IPR/TT topics are interpreted in the various higher education institutions and the context or background in which the training is being taught.

- e. *Credits (ECTS) or hours awarded*

The European Credit Transfer and Accumulation System is a standard for comparing the study attainment of higher education across the EU. Hence, the number of credits can be used to assess the weight and priority of the training / awareness activity. When the number of ECTS credits was not known, the number of hours dedicated to the training was requested.



### *f. Percentage of student attendance*

This question was only relevant in case the training was reported as being optional. Results were divided into five categories: very low (0-14%), low (15-29%), medium (30-59%), high (60-75%) and very high (76-100%).

### *g. Discernible trends in attendance*

This question was only relevant when the training was reported as being optional. This question was aimed at assessing the practical impact and relevance of any optional training activities: have attendance numbers fluctuated in recent years or have they remained stable? Interviewees were offered the following possible answers: strongly increasing, increasing, stable, decreasing or strongly decreasing.

### *h. Examination?*

This question relates to the existence of some kind of examination of the training activity. Possible answers include a full final exam (where the IPR/TT activity is fully included in the material to be studied), a paper (where IPR/TT most often serves as relevant background knowledge), or no examination at all.

## **1.4.2. For PhD students**

### *a. Level of IPR/TT awareness for PhD students*

While we were not required to investigate IPR/TT awareness for PhD students, we found it useful to compare results for this category with graduate students and undergraduate students. Many institutions that do not teach intellectual property matters to undergraduate students, prefer to instead offer this option only to those who pursue a career in research (where this knowledge is relevant). As regards these PhD students, we asked for the nature and the types of training activities that are available, or that have been recently conducted to raise the level of IPR and TT awareness among PhD / doctoral students. Possible answers run parallel to those at undergraduate level and include basic knowledge, seminars, courses, or guidelines.

## 2. Analysis

### 2.1. Data gathered

We received answers from 497 faculties of 223 institutions.

- **Western Europe** – We contacted institutions in Austria, Belgium, France, Germany, Luxemburg and the Netherlands. Answers were received from 156 faculties of 63 different institutions.
- **Eastern Europe** – Answers were received from 49 faculties from 31 institutions in the Czech Republic, Hungary, Poland, Slovakia and Slovenia.
- **Northern Europe** – Answers were received from 35 faculties from 26 institutions in Denmark, Finland and Sweden.
- **Southern Europe** – Answers were received from 175 faculties from 59 institutions in Cyprus, Greece, Italy, Malta, Portugal and Spain.
- **Baltic States** – Answers were received from 17 faculties of 13 different institutions, three in Latvia, four in Lithuania and six in Estonia.
- **UK/Ireland** – For the UK and Ireland region, we collected answers from 65 faculties of 31 institutions.

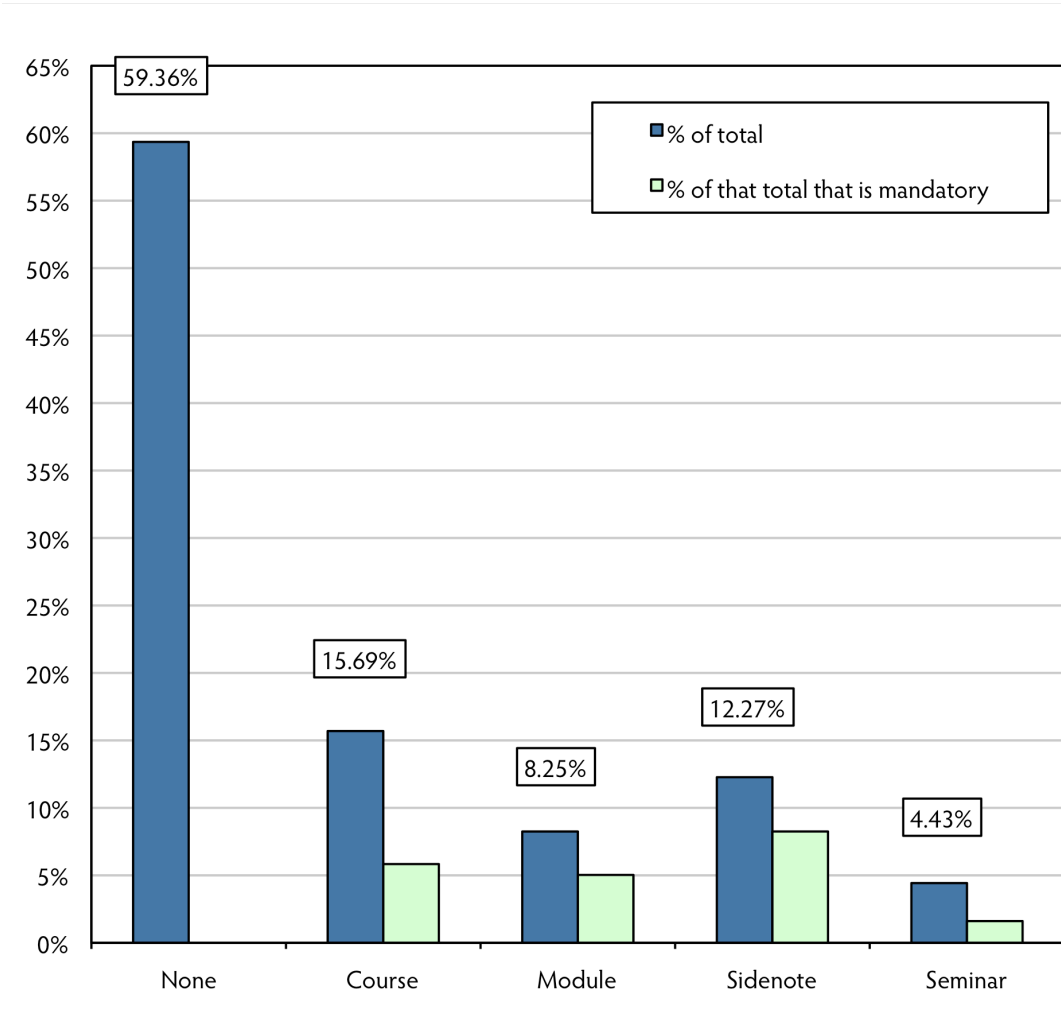
### 2.2. Types of training activities offered

#### 2.2.1. Students

**Availability of IPR/TT training** – Almost 60% (295 out of 497) of the responding medical, engineering, chemistry and business faculties do not provide any form of IPR/TT training for their students. Consequently, only 40% of these students have the possibility to take IPR/TT-related training throughout their academic career. Some interviewees declared, however, that IPR/TT education would be implemented in the near future<sup>809</sup>.

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<sup>809</sup> Such statements are not reflected in the figures.



**Figure 1 - Types of training offered to students**

This data coincides with a study undertaken by the European Patent Academy, which found that only 38% of science faculties and 40% of business faculties are offering IP-related courses<sup>810</sup>.

In those faculties that do provide training on IPR/TT, the most popular method to disseminate information is by way of courses (16%). The other methods are, in de-

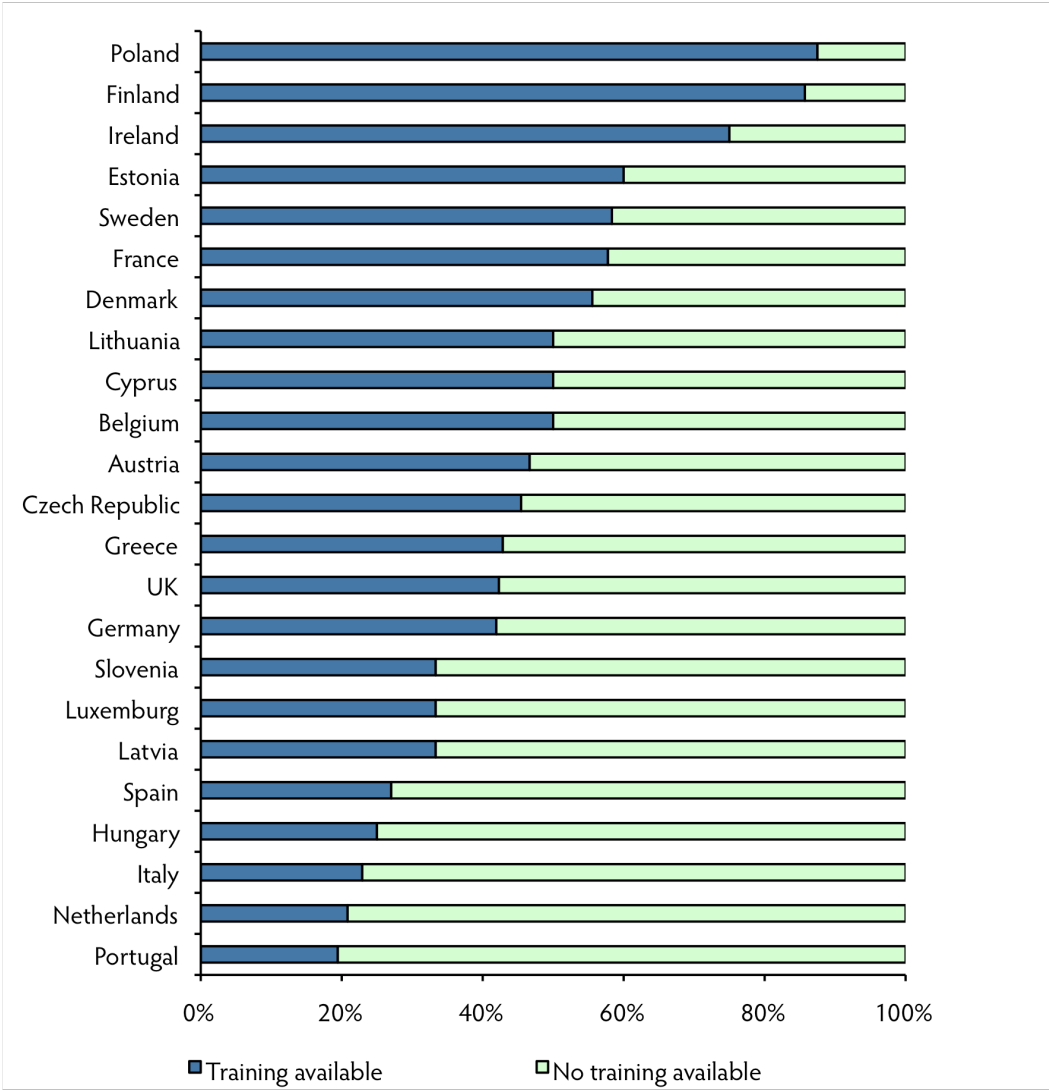
<sup>810</sup> European Patent Academy, *Stocktaking exercise: A survey of IP training in academia across the EPC contracting states*, February 2007, page 10.

creasing order, side notes in a course not directly related to IPR/TT (12%), modules directly related to IPR/TT, such as a more general law course (8%), and seminars (4%).

**Actual attendance** – It should be noted that these figures merely refer to the *availability* to receive IPR/TT training. The number of students who *actually* receive IPR/TT training is much lower, as this training is often not a mandatory part of a student's curriculum. In general, 50% of IPR/TT-education is not mandatory. Figure 1 above gives an overview of these statistics in relation to the method of education.

Attendance for the non-mandatory classes was measured using a sub-division of five categories explained above. Of the 41 faculties that provided data regarding attendance, 22 (or 53,7%) described attendance as *"Very Low"*, 7 (or 17,1%) answered *"Low"*, 8 (19,5%) *"Medium"*, none answered *"High"* and 4 (9,8%) answered *"Very High"*. No data was available for the other faculties.

**Examination** – Another aspect that was investigated, is whether students are being examined about the information received during the training. This value can be an indication of the thoroughness of the education. Out of the 40% faculties that offer the possibility of IPR/TT training, 72% of the faculties hold examinations for the purpose of testing their students, and 20% evaluate using an assignment such as a paper or presentation. The remaining 8% do not examine their students.



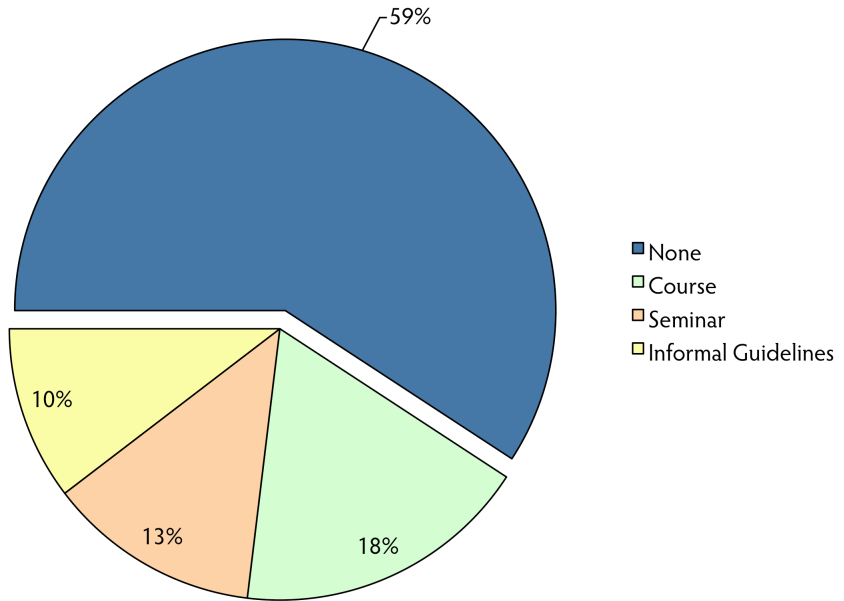
**Figure 2 - Training available for students - distribution per country**

*Note: Malta, Slovakia and Romania are not displayed, due to skewed results caused by limited availability of data.*

**2.2.2. PhD students**

In addition to data regarding students, information was also gathered on the availability of IPR/TT-training for researchers in medical, engineering, chemistry and

business faculties. The results are very similar to those concerning students: it was reported that almost 60% of PhD students do not have any IPR/TT-information at their disposal, not even informal guidelines.



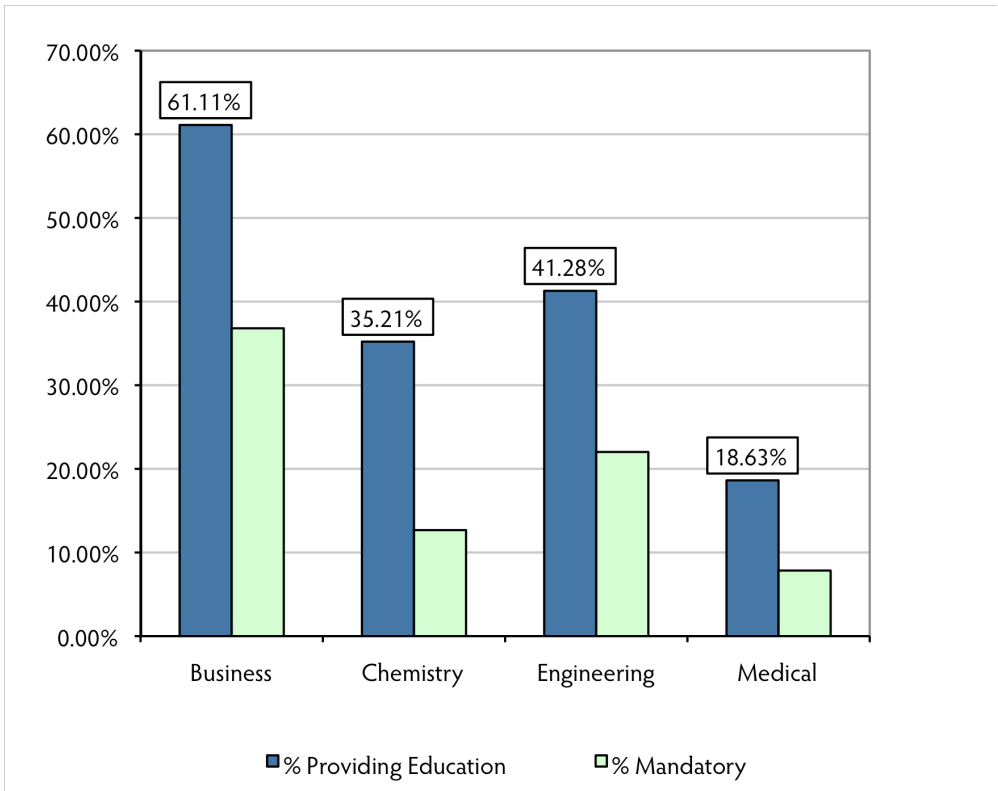
**Figure 3 - Types of training offered to PhD students**

Most of the IPR/TT-information available to PhD students is disseminated through courses and seminars, but these are almost never mandatory. Other faculties reported that information is provided by means of informal guidelines. These informal guidelines were sometimes said to be provided on a need-to-know basis.

### 2.3. Analysis by discipline

Differences between disciplines can be expected, depending on each discipline's relation to the industry and the future career generally envisaged by students in each discipline.

While IPR/TT awareness activities seem less appropriate in medical programmes, one would certainly expect to find these educational efforts in research-focused study programmes, such as chemistry. Our data shows that this is not always the case.



**Figure 4 - Distribution per discipline**

**2.3.1. Business**

IPR/TT-related training may not seem too obvious in business schools, as this education focuses on general economics and management, instead of research or technology. Furthermore, students of business faculties will generally not take up research functions in their professional career.

The outcome of our survey indicates, however, that knowledge of IPR/TT is deemed vital for all business students, as business faculties are the top-scorers among the four disciplines examined. Some kind of training is provided in more

than 60% of the business schools, while the training is mandatory more than 50% of the time.

### **2.3.2. Chemistry**

Only 35% of chemistry faculties provide their students with IPR/TT-education. If some kind of training is provided, it is optional most of the time. This percentage seems very low, taking into account that these programmes are typically very research-focused.

### **2.3.3. Engineering**

More than 41% of engineering faculties reported to have some IPR/TT-awareness activity, which is mandatory in more than 50% of the cases we examined.

### **2.3.4. Medical**

Medical faculties are at the bottom of IPR/TT-education ratios. Less than 19% of faculties provide education on this subject, and these courses are seldom mandatory.

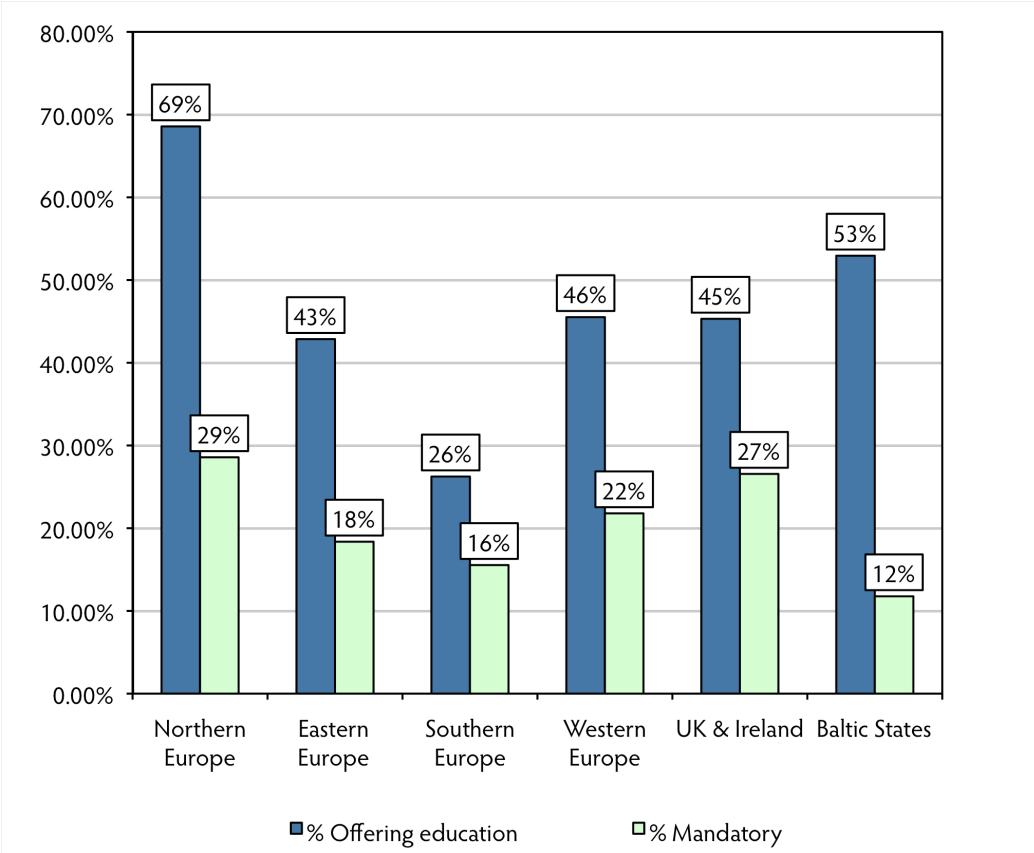
## **2.4. Analysis by region**

This section examines IPR/TT-education in the different European regions (Northern Europe, Eastern Europe, Southern Europe, Western Europe, the United Kingdom & Ireland and the Baltic States)<sup>811</sup>.

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<sup>811</sup> Page 401 lists the countries in each region.





**Figure 5 - Analysis by region**

This approach facilitates the identification of regional differences, which are quite substantial. It is certainly possible to discover trends here, although it must be acknowledged that certain countries influence the regional average to a great extent.

Building further on the analysis per discipline, this section also takes a look at differences between faculties in the various regions, and investigates if there are any differences compared to the overall European averages.

**2.4.1. Northern Europe**

Northern Europe is the frontrunner in the field of IPR/TT-education. More than 68% of enquired faculties provide some form of training on the subject. However, this feat can be largely attributed to Finland, where no less than 85% of the faculties

provide some form of education. Sweden and Denmark also score far above the global average of 40%, with 60% of faculties providing IPR/TT-education. Education of PhD students is also above average in Northern Europe.

All Northern European faculties score above average in comparison with the European-wide score provided above in Figure 5.

#### 2.4.2. Eastern Europe

Eastern Europe scores around average on IPR/TT-education. In general, 57% of the faculties provide no education for their students on these matters, compared to the overall average of 60%.

However, there exist substantial differences between countries in Eastern Europe. The Czech Republic scores a little above this 50% (closer to the global average), while Slovenia scores very low, with 66% of faculties providing no education. In Poland, almost every responding university provides IPR/TT education, and this education is mandatory most of the time (this result is corroborated by the study of the European Patent Academy mentioned earlier<sup>812</sup>). Only limited data is available for Hungary and Slovakia, ruling out conclusions for these countries.

Education of PhD students is also above average for Eastern European countries, and the aforementioned conclusions per country are equally relevant here.

#### 2.4.3. Southern Europe

Education on IPR/TT is substandard in Southern Europe. Almost 75% of students are provided with no training possibility at all. The situation is worst in Portugal (81%), followed by Italy (77%), Spain (73%), Greece (57%) and Cyprus (50%). For Malta, only the data received from the University of Malta is included in this report. The university educates business, chemistry and engineering students on IPR/TT, resulting in the (highly skewing) maximum score for the country.

Compared to graduate and undergraduate students, the situation is even worse for PhD students, with 88% of them not having access to IPR/TT-information.

Only 16% of the Southern European engineering faculties offer IPR/TT education, which contrasts starkly with the European faculty-bound average of 41%. The

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<sup>812</sup> European Patent Academy, *Stocktaking exercise: A survey of IP training in academia across the EPC contracting states*, February 2007, p.15-16.

situation is the same in medical and chemistry faculties. However, southern European business schools score in line with their European peers.

### 2.4.4. Western Europe

Western Europe scores above average, albeit only a little. 46% of the faculties provide IPR/TT-education to their students. France has the best score, followed by Belgium, Austria, Germany, Luxemburg and the Netherlands.

Education of PhD students is at 50%, a little above the figure for regular students, as well as above the global European average.

Western European business and medical faculties score in line with the Europe-wide average. Chemistry and engineering departments are both some 20% above the average of their peers.

### 2.4.5. United Kingdom and Ireland

The United Kingdom and Ireland score somewhat better than Western Europe, but lag behind Northern Europe.

Compared to the United Kingdom, Ireland scores substantially better in the field of IPR/TT related training activities. Responding Irish faculties provided IPR/TT-education for their students in 75% of cases, which is on the level of Sweden, while in the United Kingdom, such education was only available in 42% of the faculties, which is around average. However, contacted faculties in the United Kingdom often mentioned that they have an office that can be contacted on a need-to-know basis, and this is not reflected in the percentage. If the latter factor is taken into account, it seems that the UK/Ireland region is closer to the level of Northern than the level of Western Europe.

Education of PhD students is at the same level of Western Europe, not taking into account any university IPR/TT-information services.

Business schools in the United Kingdom and Ireland region score a little below average for IPR/TT-education compared with their European peers. Chemistry, engineering as well as medical departments score above average.

#### 2.4.6. The Baltic States

The Baltic States **score above average on IPR/TT education. Almost 53% of** the faculties provide IPR/TT-education to their students. Frontrunner is Estonia, with 60% of students having access to education. In Lithuania (50%) and Latvia (33%), training possibilities seem to be less favourable.

PhD students, however, had access to IPR/TT education in only 33% of cases, which is a little below average.

Even so, comparisons with other regions should be considered carefully, as the amount of statistical data gathered on the Baltic States for this report is relatively limited.

### 3. Conclusions

#### 3.1. General

A large number of medical, engineering and chemistry students graduate without ever receiving information on intellectual property and technology transfer. The data gathered in the survey, as well as remarks made by some of the interviewees, make it possible to identify a number of possible causes.

##### 3.1.1. Lack of awareness of the importance of IPR/TT-education

There seems to be a general lack of understanding of the importance of IPR/TT in academic circles. Arguments such as *"a law course does not belong in a natural science curriculum"* and *"students are so busy with their own curriculum that we do not want to overload them with other courses"* were stated more than once during the interviews. When leaving aside business school percentages, hardly 30% of students have access to IPR/TT-education, which is mandatory only half of the time.

Some interviewees were of the opinion that the lack of awareness was due to the fact that a substantial number of scientists perceive scientific research as a "public service", from which no profit should be made. It is, however, not clear whether this opinion is widespread among academic personnel across Europe.

Several interviewees expressed concern about their students' lack of IPR/TT knowledge, and many were interested in implementing this subject in the curriculum in the (near) future. This coincides with the study of the European Patent Academy, which found that 45% of the faculties that did not have any courses related to intellectual property, were interested in implementing such a course.<sup>813</sup> This could possibly be a sign of a heightening awareness on this matter.

These findings lead to the recommendation that a more extensive promotion of the usefulness and importance of IPR/TT among academic personnel is needed, as well as the stimulation of an atmosphere in which science for the purpose of future commercialisation does not undermine the scientific values. The high number of faculties interested in implementing IP in their curriculum suggests that stimulation efforts could prove to be very successful.

### 3.1.2. Lack of time and resources

Some interviewees mentioned that, although they are aware of the importance of IPR/TT, they do not have the possibility to implement courses on these subjects, because they are limited budget-wise. Although the number of remarks concerning this aspect is limited, it may be worth further investigation. Another remark that was made, is that the study programme does not allow any additional courses, because of limited time slots available to educate students.

### 3.1.3. Lack of awareness of the importance of IPR/TT-education among students

Another obvious problem is the lack of interest shown by students for IPR/TT-education. Several interviewees noted that science students are clearly focused on courses directly related to their field of study. Moreover, the core of their study program does not include a basic IPR/TT-course most of the time. Our findings indeed show that attendance rates for optional courses are, in general, very low.

This finding stresses the importance of showing students that it is in their own interest to be informed on this subject. It is quite plausible that there is a correlation between the lack of IPR/TT-awareness among academic personnel and the lack thereof among students. Therefore, it would seem appropriate to focus on education of the academic staff, before tackling the level of awareness of students.

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<sup>813</sup> European Patent Academy, *Stocktaking exercise: A survey of IP training in academia across the EPC contracting states*, February 2007, page 7

#### **3.1.4. IPR/TT-awareness is proportionate to the commercial potential of the discipline**

The availability of IPR/TT-education varies with the industrial applicability of the discipline concerned. While medical schools score low, chemistry, engineering and especially business schools show better results.

The question arises as to whether this distinction between medicine and other disciplines needs to be maintained, taking into account the growing importance of the pharmaceutical sector.

#### **3.1.5. Conclusions per region and country**

The differences between the various European regions are sometimes substantial. While the United Kingdom, Ireland, Eastern and Western Europe seem to be on the same level, they lag behind on Northern Europe and – to a smaller extent – the Baltic States. Compared to the other regions, the situation in Southern Europe in the field of IPR/TT education is weak.

The extent to which IPR/TT-education is provided is often related to country-specific situations. For example, one of the interviewees stressed that the situation in Ireland, where the education level is high, is a result of the importance of the local chemical industry.

Promotion of awareness may need to be focused on the countries and regions where the situation is worst. Moreover, further research may be required to examine the reasons behind some of their low scores.

### **3.2. PhD students**

#### **3.2.1. Some universities provide solutions that others may want to take a look at**

Several interviewees mentioned ways in which their researchers are supported in IPR/TT-matters.

Some universities have developed collaborations between their science and law faculties. In such a situation, information is passed on to scientists on a *"need-to-know"*-basis, when research has reached the stage where it may become of commercial in-

terest. Creation of such formal or informal links between law and science faculties can be a good solution, although in our opinion it cannot replace formal education of researchers. Considering, for example, that the patentability of inventions can be easily undermined (*e.g.*, due to publications or presentations at research congresses), researchers should always have a basic knowledge about the most important principles of IPR/TT.

One solution to improve the communication channels between law faculties and science faculties, is to appoint resident experts within the science faculty itself, a practice that was reported by one university. Educating the scientists themselves or working with resident experts will, in most instances, heighten efficiency. Some universities have appointed a central contact for relations with companies and technology transfers. Several other institutions have external or internal technology transfer offices.

### **3.2.2. IPR/TT-awareness of PhD students is on the same level as student-awareness**

Although IPR/TT-awareness is possibly of even greater importance for PhD students than for students, education on the topic is of the same standard (unfortunately, low) as for the older types of courses we have mentioned. However, several universities that do not provide formal IPR/TT training, declared that their PhD students are free to participate in conferences or seminars.

Another much heard remark is that the need for IPR/TT training is mitigated because information is given on a "*need to know*" basis. This practice obviously is not without risk, since the possibility that information reaches a researcher too late to adequately protect IPR, may be therefore unavoidable.

## 4. Detailed figures

### 4.1. Data sorted by region

#### 4.1.1. Overall

Type of education	number	%	obligatory?	% oblig.
None	295	59,36%		
Course	78	15,69%	29	37,18%
Module	41	8,25%	25	60,98%
Sidenote	61	12,27%	41	67,21%
Seminar	22	4,43%	8	36,36%
<b>TOTAL</b>	<b>497</b>			

#### 4.1.2. Northern Europe

Type of education	number	%	obligatory?	% oblig.
None	11	31,43%		
Course	11	31,43%	2	18,18%
Module	6	17,14%	3	50,00%
Sidenote	5	14,29%	4	80,00%
Seminar	2	5,71%	1	50,00%
<b>TOTAL</b>	<b>35</b>			

#### 4.1.3. Eastern Europe

Type of education	number	%	obligatory?	% oblig.
None	28	57,14%		
Course	13	26,53%	7	53,85%



Identification of IPR/TT awareness and training activities

Module	1	2,04%	1	100,00%
Sidenote	6	12,24%	1	16,67%
Seminar	1	2,04%	0	0,00%
<b>TOTAL</b>	<b>49</b>			

4.1.4. Southern Europe

Type of education	number	%	obligatory?	% oblig.
None	128	73,14%		
Course	20	11,43%	8	40,00%
Module	8	3,96%	6	75,00%
Sidenote	18	10,29%	14	77,78%
Seminar	1	0,57%	0	0,00%
<b>TOTAL</b>	<b>175</b>			

4.1.5. Western Europe

Type of education	number	%	obligatory?	% oblig.
None	85	54,49%		
Course	29	18,59%	11	37,93%
Module	14	8,97%	8	57,14%
Sidenote	14	8,97%	9	64,29%
Seminar	14	8,97%	6	42,86%
<b>TOTAL</b>	<b>156</b>			

4.1.6. Baltic States

Type of education	number	%	obligatory?	% oblig.
None	8	47,06%		
Course	3	17,65%	1	0,00%

## Identification of IPR/TT awareness and training activities

Module	4	23,53%	2	50,00%
Sidenote	2	11,76%	2	100,00%
Seminar	0	0,00%	0	0,00%
<b>TOTAL</b>	<b>17</b>			

### 4.1.7. UK & Ireland

Type of education	number	%	obligatory?	% oblig.
None	35	54,69%		
Course	2	3,13%	0	0,00%
Module	8	12,50%	5	62,50%
Side note	15	23,44%	11	73,33%
Seminar	4	6,25%	1	25,00%
<b>TOTAL</b>	<b>64</b>			

## 4.2. Data sorted by faculty

### 4.2.1. Overall

Type of education	number	%	obligatory?	% oblig.
None	295	59,36%		
Course	78	15,69%	29	37,18%
Module	41	8,25%	25	60,98%
Sidenote	61	12,27%	41	67,21%
Seminar	22	4,43%	8	36,36%
<b>TOTAL</b>	<b>497</b>			

#### 4.2.2. Medical Faculties

Type of education	number	%	obligatory?	% oblig.
None	83	81,37%		
Course	7	6,86%	2	28,57%
Module	3	2,94%	2	66,67%
Sidenote	4	3,92%	3	75,00%
Seminar	5	4,90%	1	20,00%
<b>TOTAL</b>	<b>102</b>			

#### 4.2.3. Engineering Faculties

Type of education	number	%	obligatory?	% oblig.
None	64	58,72%		
Course	21	19,27%	8	38,10%
Module	9	8,26%	7	77,78%
Sidenote	9	8,26%	5	55,56%
Seminar	6	5,50%	4	66,67%
<b>TOTAL</b>	<b>109</b>			

#### 4.2.4. Chemistry Faculties

Type of education	number	%	obligatory?	% oblig.
None	92	64,79%		
Course	16	11,27%	3	18,75%
Module	10	7,04%	4	40,00%
Sidenote	14	9,86%	8	57,14%
Seminar	10	7,04%	3	30,00%
<b>TOTAL</b>	<b>142</b>			

#### 4.2.5. Business Faculties

Type of education	number	%	obligatory?	% oblig.
None	56	38,89%		
Course	34	23,61%	16	47,06%
Module	19	13,19%	12	63,16%
Sidenote	34	23,61%	25	73,53%
Seminar	1	0,69%	0	0,00%
<b>Total</b>	<b>144</b>			