

ANNEX

Response to EC Consultation on Patents and Standards

Q 1.1.1 Fields of standardisation involving patents: To your knowledge, in which technological areas and/or fields of on-going standardisation work are patents likely to play an increasingly important role in the near future? What are the drivers behind this increase in importance?

Patents will play an important role in open standardisation in more and more fields

Standardization provides interoperability and enhances and optimises end-to-end performance. In today's increasingly interconnected world the consumer demand for interoperable high performance technologies is likely to increase. As the "Internet of Things" becomes more and more a reality a growing spectrum of products and devices will become interconnected and able to "talk to each other", for example cars, medical appliances, heating controls systems, domestic appliances such as fridges, to name but a few. It is expected that literally tens of billions of different devices will be interconnected within the next 5 years. The proliferation of these devices will require increased performance from the mobile telecom infrastructure, representing on the one hand enormous opportunities but also increased demand for open standardization.

Patents are a key ingredient in truly open standardisation because they allow participating companies to disclose and share their new technology openly and early, knowing that their inventions will be protected. Without patent protection participants in standardisation would be inclined to keep their technology secret. That would be incompatible with the aim of developing collaborative technology road maps in the form of standards specifications which underpin interoperability requirements.

So, not only will open standardisation become increasingly important across many more sectors outside telecoms, those standards will, and indeed should, include patented technologies.

In all fields where standardisation is likely to bring benefits to consumers, policy makers must ensure the right drivers and incentives for standards to continue to be developed in an open, consensual manner, and avoid tendencies towards fragmented or closed proprietary solutions.

However, there is a risk that truly open standardization may decrease in future. This doesn't mean the importance of standardization itself would reduce, but stakeholders are increasingly seeing better business opportunities by choosing proprietary solutions rather than participating in open standards. There is a risk that SSOs merely become rubber stamping organizations, where proprietary solutions are brought to confer a superficial "standard" status.

Q 1.1.2 Trends and consequences: Do you see a general trend towards more/less standards involving patents? Are there any practical consequences of this trend? Are business models changing?

Please see our answer to Q 1.1.1 above. Concerning changing business models, it is noted that enforcing a patent is an extremely costly and arduous task requiring legal and technical expertise. The fact that more and more companies in the technology markets today engage in systematic unauthorized use of patented innovations on a large scale (typically knowingly, without any effort to proactively take a license) makes licensing even more challenging and time-consuming. These

combined phenomena may at least partly explain the development of new businesses called NPEs (non-practising entities). As fewer and fewer companies that have invested in R&D are capable of maintaining the licensing programmes and resources necessary to obtain a return on the investments they have made in R&D over many years, they may be inclined to sell their innovations to a third party for further commercialization. Competition authorities are, albeit inadvertently and not intentionally, creating extra hurdles for innovators to enforce their patents, as superficial complaints to competition authorities require a huge amount of work from licensors to uphold their right to protect their innovations, and sanctions for infringement, e.g. the availability of injunctive relief is at risk of being diluted in favour of unwilling licensees. From the innovators' perspective, therefore, there is a risk that the most innovative contributions will be withheld from submission to any SSO, possibly not even patented either. The best way to protect the innovation may be to keep it secret and not publish in a standard or patent application. This approach is not compatible with open consensual standards.

Q 1.1.3 Standardisation prevalence/complexity: In general, do you observe an increasing role of (any type of) standardisation in your fields of activity/interest? Are standards becoming more, or less, detailed and comprehensive? How does this trend impact on the functioning of the standardization system?

In telecoms, we are witnessing an increasing number of proprietary technologies being proposed for adoption as 'standards'. To get these accepted, entities rely upon their business relations and lobbying prowess, to influence the selection of technologies to be standardised. In this sense, the trend is moving away from open standards development in SSOs, towards 'imposing' on the industry proprietary technology based on the strength or dominance of individual firms seeking to promote their own technology.

Earlier, this may have been frowned on as anticompetitive behaviour. Nowadays, competition authorities support policies which increasingly seem to encourage such behaviour on the premise that it leads to patents and/or control being concentrated in the hands of fewer companies; but the consequence is that licensing is inevitably coupled to the emerging ecosystem(s), controlled by only one, or a limited number of, actors. According to their belief and advocacy, this may have overall lead to less royalty cost. However, this kind of thinking will have a negative long term impact on the market: fewer ecosystems drive less competition. One example of this is the latest SIM card format standardised by ETSI. A second example is the ISO work on VP8 technology. In examples such as these, the selection is made without being based necessarily on the best technical solution but on the business benefits for an individual company or a small group of companies.

This trend essentially benefits large, dominant enterprises capable of developing ready solutions so that when they already have products on the market, they can convert the underlying technologies to 'standards'. Small companies do not have such R&D or marketing capabilities. Their solutions are trumped by technologies already selected and used in large proprietary ecosystems. For example, when Europe developed the GSM mobile telecoms ecosystem, it was based on open standardization. The predominant eco-systems nowadays are closed and closely controlled by large enterprises. If a small company wanted to introduce its own technology to improve some aspect of these ecosystems, the only way may be to 'sell' it to one of three controlling companies on terms defined by them (which in practice may mean to give it away for free). This illustrates European open standardization being replaced by closed ecosystems!

This problem is fundamentally more critical for Europe due to the fragmented market which inherently is more vulnerable to less interoperable technologies where each Member State may choose to take a different approach on how to utilize ICT in different sectors of life. When the openness of technologies is lost, the role of standards and SEPs will be reduced. The technical details of closed, proprietary technologies do not have to be published in any form and confer no promise to be licensed out, e.g. iOS. Understanding these dynamics will be a critical factor as more and more services in society will be based on some kind of ICT applications, open or closed, interoperable or not.

Q 1.1.4 Standardisation in support of innovation: Do you consider that standardisation involving patents contributes to innovation and to the uptake of new technologies? If so, in which areas? Would technologically neutral standardization promote innovation equally well in these areas? Should standardisation be less specific by excluding those elements that are covered by patents?

Mobile communications is one of the most vibrant and successful eco-systems today. It influences our daily life. It is ubiquitous. It also has continuously growing importance for other industry sectors. This whole system's DNA (the telcom infrastructure) is standardized to a large extent, and embraces technology developed thanks to R&D investment amounting to billions of Euros. Hundreds of companies are participating in the technical working groups of the standards setting organizations like 3GPP. But only a relatively small proportion of these companies actively invests and contributes their patented technologies into these standards, whereas the vast majority of players, large and small, are benefitting from the R&D investments made by these few, having access to all their innovations for even as a springboard for their own further proprietary innovation.

Commission President Juncker's Broadband initiative requires standardization. As Commission Vice-President Ansip said in the European Parliament at the end of November 2014, his commitment is towards a Telecoms Single Market as "an essential building block of the Digital Single Market. Without it, we cannot achieve the rest." 5G requires huge research investments to fulfil its promises, and it will simply not happen if there is no fair return of investment for those contributing to standardization.

The whole system requires not only interface standards allowing interoperability of proprietary system, but also system standards describing often the detailed technologies. Technologically neutral standardization will never enable such systems, with fierce competition of companies offering these infrastructures, allowing operators to compete in the market potentially leading to lock-in to a single vendor offering a proprietary system.

Q 1.2.1 Issue of over-/under-inclusion: Are there fields of standardisation in which you consider that standards include too many patented technologies? Are there areas in which standards would benefit from including more patented technologies? Please explain.

It is well-known that there are many SEPs in the telecoms field. This is a reflection not only of the innovative and competitive nature of the telecoms sector, but also of the scale, scope and complexity of telecoms standards. However, for the most part, these SEPs are either licensed or at least available for license on FRAND terms. Historically, the FRAND licensing regime has generally worked well, as evidenced by the phenomenal success of mobile telecoms across the planet. Nowadays, however, we are seeing the behaviour of prospective licensees has changed - they are increasingly reluctant to take licences – and the balance seems to be shifting too much in favour of the licensee. Consequently free-riding is now a real problem. For the open standards eco-system to

continue functioning effectively it is vital to restore an environment where investors in innovation can secure FRAND compensation for their SEPs.

Put simply, mobile phones would not interoperate seamlessly as they do without successful SEP licensing. In short, the issue is not so much about the number of patents in a standard, but more about ensuring there is a well-functioning FRAND licensing regime – the life blood of the mobile telecom sector.

Q 1.2.2 Criteria for inclusion decision: What should be the criterion/criteria to use when deciding on whether or not to base a standard on a patented technology and/or to include a further patent-protected technology into a standard? How can a possible cost and benefit analysis be done? What could be used as benchmarks?

One significant role of standards is to create predictability for the industry and remove uncertainties. This predictability encourages manufacturers and operators to make early investment decisions and even compete for the opportunity to utilise e.g. spectrum licences. The best way of creating predictability is for the standardization process to require standardization decisions to be based solely on technical considerations. In other words, the sole criterion for deciding whether or not to include a technology in a standard should be technical merit. This is possible provided the standards body in question has in place an effective Patent Policy whereby SEP owners commit to make their SEPs available on FRAND terms because then there is no need to consider legal or commercial aspects in such a decision, as it can be assumed that the relevant patented technology will be available to third parties on fair, reasonable and non-discriminatory (FRAND) terms. Of course, for such a system to work, there must also be the opportunity for timely, efficient and effective enforcement of SEPs against unwilling licensees.

From this point of view, a classical ‘cost and benefit’ analysis would not be appropriate. Rather, it is sufficient for an SSO to ensure that any patented technologies included in the standard, based on their technical merit, are available to third parties on FRAND terms, without quantifying or comparing cost, provided also that SEP owners are able to effectively license their SEPs on FRAND terms.

Furthermore a robust cost and benefit analysis will generally not be possible at the stage when it would be most useful (i.e. technology selection stage) because there is no clear picture about the eventual patent situation, since there will be patent applications that may not mature into granted patents or turn out to be essential, and there will even be unpublished patent applications, bearing in mind the 18 month lag in the publication of a normal patent application.

Q 1.2.3 Process for deciding on inclusion: Who should take the decision of including (or not) patented technologies into a standard? Should the entity suggesting the patented technology for inclusion be asked to justify the inclusion? If so, what elements should be covered, at minimum, in the justification?

Technical experts in the relevant standard setting organisation should be the ones to decide whether or not to include a technology in a standard, based solely on the technical merit of the technology concerned. The justification should come from the SSO community, in an open transparent, non-discriminatory decision making process. Provided the standards body in question has in place an effective Patent Policy whereby SEP owners commit to make their SEPs available on FRAND terms, there is no need for anyone to consider either legal or commercial issues, for example. There is no reason not to ask the contributor to justify the inclusion, but any such justification should be based solely on technical grounds, provided the contributor has made a FRAND commitment subject to the

SSO patent Policy. It is also important that SEP owners are able to effectively license their SEPs on FRAND terms.

Q 1.2.4 Disputes over inclusion: Are you aware of legal disputes over a decision to include (or not) a patented technology into a standard? What were the main facts and what was the outcome of the dispute?

We are not aware of any legal disputes lately over a decision to include a *patented* technology in an standard promulgated by an SSO.

One case (*Goldenbridge*) involved removal of an optional portion of a standard that was not being used. The owner of certain patents alleged to be essential to that optional portion brought antitrust and related claims in the US against certain ETSI members, including Nokia, who were involved in the decision to remove that portion of the standard. The defendants received summary judgment in their favor on those claims, and separate patent cases were settled.

There has been one legal case (*TruePosition*) about non-inclusion of technologies generally (i.e. not patented technologies) which is understood to have resulted in a confidential settlement agreement between 3GPP and TruePosition.

In another case, which did not involve litigation, VirnetX non-ETSI member, informed ETSI that it was not prepared to give an irrevocable undertaking to grant FRAND licenses to its potentially essential patents relating to a number of ETSI standards, but after negotiation VirnetX changed its mind.

However, none of these legal disputes was about a decision to include a patented technology in a standard. Although there are many patented technologies in telecoms standards, this is not hindering the application or development of the standards.

Questions on other links between standards and patent-protected technologies

The main focus of this public consultation is on the situation where a standard directly and explicitly includes a patent-protected technology.

However, two other links between patents and standards are also frequently discussed in the standardization community:

First, the situation where a standard does not refer to any particular patented technology (in other words it is technologically neutral) but where the standard can in practice only be implemented by using one or more technologies that are patent-protected.

Second, the situation where a product implements a standard but also includes patent-protected technologies which cumulatively (1) cannot be designed around technically and (2) are so important to the customer that the product cannot be sold without the patent-protected technology.

The following questions aim at gathering your views on these two situations. It should be noted that both situations are structurally different from the situation otherwise covered in this public consultation. The patent holder will regularly not have consented to the link between the standard and its patented technology and will also not have given any licensing commitment. We therefore also ask on the patent holder's defences in this situation.

Q 1.3.1 Pertinence of these two situations: To your knowledge, has any of the two situations occurred? If yes, where and how often? In your answer, please explain in detail why the respective conditions specified above were fulfilled. What were the consequences?

Concerning the second situation, in cases where a product implements a de facto or proprietary standard, whether dominant or not, there must be no licensing obligation, or even expectation, on third parties whose patents happen to be included. Otherwise this is a recipe for misappropriation of third party rights, and unjustly reinforces closed proprietary platforms. Indeed, authorities need to be careful to distinguish these situations from cases where SEP owners have made voluntary contractual licence commitments in the context of an SSO under prescribed SSO IPR rules. Specifically competition authorities need to apply the highest threshold before contemplating intervention in such cases, based on real evidence and careful review of all the facts, recognising these are highly complex technical issues.

Q 1.3.2 Defences by the patent holder: Do you see a risk that a standard setting process could be abused to obtain (preferential) access to patent-protected technologies? Has this happened? Please explain. How can the patent holder defend his/her rights?

The question seems to be about adopting technologies into standards deviously in order to gain unfair access to patents. However, to the extent that the FRAND commitment is voluntary on the part of the SEP owner, simply writing a technology onto a standard doesn't itself guarantee FRAND access - the SEP owner would still have to undertake to make FRAND licences available – at least this is the case in ETSI.

As explained in our answer to Question 1.3.1, in the case of a de facto or proprietary standard which includes technology patented by a third party, there must be no obligation on the third party to grant licences. Otherwise de facto and proprietary standards in particular can be abused as a vehicle not only for misappropriating third party patents, but also for unjustly reinforcing closed proprietary platforms.

Q 2.1.1 Best rules and practices: A variety of rules and practices govern standardisation involving patents. Which elements of these rules and practices are working well and should be kept and/or expanded? Which elements on the other hand can be improved? Would you consider it helpful if standard setting organizations would be more explicit about the objectives of their patent policies?

The broad principles that have historically worked well in telecoms and should be kept are: (1) an obligation to disclose known SEPs, and (2) a voluntary commitment to license SEPs on FRAND terms.

An aspect where the FRAND model could be improved in practice concerns the requirement on the implementer to negotiate in a timely manner and to pay FRAND compensation for use of SEPs. It would help restore balance and equilibrium in SEP licensing if there was more emphasis on the obligation on prospective licensees to negotiate constructively in good faith and in a timely manner with a view to concluding a licence and paying FRAND compensation and not to engage in purely tactical and/or dilatory behaviour of the kind envisaged in the recent (20.1.14) Opinion of the CJEU Advocate General in case C-170/13 (*Huawei vs ZTE*). Entitlement to a FRAND licence should evaporate if a prospective licensee's conduct shows they are not a truly willing licensee, and all usual remedies should be available against such an unwilling licensee, without restriction.

In the past, the avaricious behaviour of SEP owners (so-called patent ‘hold-up’) raised regulatory concerns, while implementers readily entered into FRAND negotiations. The courts and regulators have taken steps to address overly-zealous patentee behaviour. Now the pendulum has swung the other way. Patent owners are ready to grant FRAND licences, but implementers (even major reputable companies) exhibit aggressive ‘hold-out’, reluctant and unwilling to take FRAND licences. ‘Free-riding’ and ‘hold-out’ are now significantly more serious problems in the real commercial world than ‘hold-up’. Today the majority of mobile phone manufacturers are unlicensed under most of the SEPs they are using. Ten years ago most manufacturers were licensed.

Unwillingness manifests itself in many different ways, for example in dilatory negotiations and delay tactics, or even outright refusal to negotiate a FRAND licence. It has not helped that SSOs and regulators are questioning the FRAND framework because unwilling licensees invoke the on-going debate and resulting legal uncertainty as reasons or excuses for delaying FRAND licence negotiations. For this reason it is in the interests of unwilling licensees for the policy and regulatory debate to continue as long as possible without clear resolution.

Q 2.1.2 Trends and initiatives: The pertinent rules and practices are constantly evolving. Do you see any particular trends? What are recent improvement initiatives that you find promising or worthwhile of attention? Are there initiatives outside the SSO domain that you find helpful (e.g. patent quality initiatives by patent offices)?

We are currently witnessing something of an attack on the traditional FRAND licensing model, which is harming the European telecommunications industry in particular as the evidence provided in our answers to other questions in this survey demonstrate. Essentially, companies (“implementers”) using technologies patented by others, who themselves have not contributed to the standards can free-ride on the investments of SEP-owning companies, as they seek to use the standards for low/no royalties. The victims are those companies, notably including European companies, which have made long term investments in the development of horizontal standards following encouragement by the European Commission more than two decades ago when GSM was created. Implementers are currently promoting changes in many SSOs that would tilt the current balanced FRAND environment more in favour of implementers against SEP owners. Such changes, if progressed, would not only be prejudicial to SEP owners but, will have a harmful effect on, and threaten the viability of, open standardisation as they will discourage future investment in standardisation and instead encourage more proprietary approaches. A specific example of what is happening in one SSO is given in our answer to the following question 2.1.3

Outside the SSO domain, Nokia welcomes initiatives of Patent Offices to enhance patent quality generally not only in the context of SEPs. However, patent quality is a very subjective criterion and it would help in our view if common metrics of patent quality were to be developed across different patent offices, perhaps as part of the current ongoing international Patent Harmonisation measures. Patent Offices generally have little exposure to patents in the post-grant phase and it would help in our view to develop some patent quality criteria based on post-grant criteria, which is when the value of patents really manifest itself and so can be measured, such as inclusion in licences, inclusion in standards, and/or results in opposition or litigation

Returning to the SSO context, we recognise that Patent Offices, the EPO for example, could have a role to play in enhancing essentiality declarations, for example enabling a third party to challenge the essentiality of a SEP in a process akin to current EPO opposition proceedings. Nokia will be

considering this kind of approach further in the context of forthcoming discussions in the SSOs to do with transparency and quality of essentiality declarations, notably in ETSI.

Q 2.1.3 Differences in SSO rules and practices: Do you see significant differences between SSOs in terms of their patent policies and/or treatment of standard essential patents in practice? If so: What are the practical consequences of these differences? Which of these differences (if any) pose problems? Which of these differences are justified?

So far ETSI and ITU have, fortunately, resisted controversial changes to their Patent Policies that are being promoted by technology implementers (see our answer to the previous question 2.1.2 for more detail). By contrast, in IEEE, highly controversial changes have recently been adopted (8 February 2015) and are expected to take effect in March 2015. Among the changes the most harmful will: (1) virtually remove the prospect of injunctive relief on SEPs irrespective of the conduct of the prospective licensee, (2) prevent portfolio licensing in practice, and (3) suppress royalty rates by using the so-called 'smallest saleable patent practising unit' (i.e. component level licensing) approach for determining royalties. The practical consequences are potentially very severe indeed. In short they will perturb the delicate balance of the standardisation eco-system, reducing the incentives for technology developers to engage in the IEEE standardisation process. In November 2014 Nokia formally notified IEEE that if the proposed changes are adopted, Nokia will not make its SEPs available for licensing under the new IEEE Patent Policy. It is understood that other SEP owners have also reacted and complained in various ways about the proposed changes. This demonstrates that even the prospect of negative changes to an SSO Patent Policy will discourage technology developers from fully participating. The broader consequence is that such changes will undermine IEEE standards in future and encourage more proprietary solutions, contrary to the interests of interoperability and the best interests of consumers. This could have a potentially significant impact on the future of wireless technology standards and Wi-Fi, key standards in IEEE.

Furthermore, when SSOs take fundamentally different approaches their mutual collaboration will become more difficult. Experience shows that collaboration between standardisation forums and groups with a different heritage and/or approach is inherently more challenging, complicated and frustrating. For example the evolving collaboration between 3GPP (telecoms) and IETF (internet) over many years is an interesting case in point, which shows how difficult it can be to bring two rather different standardisation groups together, even though there has been obvious high level interest to do so, for example in the context of the instant messaging service (IMS) using IETF protocols in 3GPP services. All differences, whether legal, operative, tradition etc. take extra effort to be sorted out and therefore significant rule changes like those under consideration in IEEE will only make the collaboration between IEEE and other SSOs more difficult and less efficient.

Q 3.1.1 Scope of transparency issue/Priority areas: Is there sufficient patent transparency in the fields of standardisation that are of interest to you? In which of these standardisation field(s) is patent transparency particularly good and in which field(s) is it insufficient? Please explain.

Nokia believes patent transparency is a key ingredient in open standardisation. Most SSOs in telecoms have rules aimed at ensuring transparency of SEPs. For example, ETSI has a requirement on members (Clause 4.1, ETSI IPR Policy) to disclose SEPs and potential SEPs in a timely fashion and

ETSI maintains a comprehensive database of disclosed SEPs. To the best of our knowledge, the SEP disclosure process is broadly working well, and Nokia is not aware of any fundamental problems, although we recognise improvements may be possible as discussed in more detail below.

The disclosure of potentially essential patents is an important vehicle to help would-be licensees know under which patents they need to take a licence. However, it is important to note that patent owners are generally obliged to disclose not only patents which are essential to the standard, but also patents which might be essential (*see for example: ETSI IPR Policy, Clause 4.1*). This means that a patent owner generally has to err on the side of caution and disclose more rather than fewer patents. In other words there will be a tendency for over-disclosure. On the other hand, those that disclose patents as essential generally undertake to license them on FRAND terms, whereas undisclosed non-essential patents would be unencumbered, so there is an inherent incentive not to over-disclose. Also, there is the possibility of making a blanket licensing declaration, i.e. undertaking to license all essential patents to a particular standard whether disclosed or not. This takes the emphasis off up-front disclosure of individual patents because any essential patents that would remain undisclosed would still be subject to a FRAND license commitment. This addresses the issue of under-disclosure.

Nokia's has a robust systematic process for vetting essentiality before disclosure to an SSO, described in more detail in our answer to Qn. 3.2.3.

Discussions around patent transparency are beginning to emerge in SSOs, most notably in ETSI, where this topic started to be addressed in January 2015. Nokia is contributing and will continue to contribute actively to these discussions. One specific question posed in this context is whether it might be possible and useful for ETSI to have a database of granted SEPs which have been checked for essentiality. The preliminary discussions in ETSI recognised that this is a complex topic touching on many issues both legal and practical, not least cost versus benefit and where any cost burden would lie. However, the overarching message that came out of this preliminary discussion highlighted the importance of first establishing more carefully whether there is indeed a real problem around SEP transparency and, if so, what the nature of that problem is, before trying to come up with a solution. Hopefully, this consultation will help reveal any real problems around SEP transparency, if there are any, and bring forward supporting empirical evidence.

Q 3.1.2 Ex-ante transparency: In your experience, is there sufficient knowledge about the relevant patent situation during the discussions leading to the setting of standards? Have you experienced a situation where a standard was decided based on significantly incorrect assumptions about the relevant patent situation? What were the causes of such incorrect assumptions and what were the consequences? Could all relevant stakeholders participate in the discussions?

The patent situation varies greatly between different industry sectors and SSOs. In the ICT sector there are organizations like W3C who mandate that licences for SEPs have to be available royalty free or the standardization process aims to design around the patent. In such situations it is vital to know each patent before finalizing the standard. IETF requests early knowledge of relevant patents with the aim of avoiding SEPs which are not royalty free.

The situation is different in SSOs standardizing technologies, like ETSI. ETSI members accept and welcome the best available technologies for their standards, and therefore willingly accept having a significant number of SEPs in such standards. ETSI stimulates early disclosure of patents with the aim of having all patents in a standard covered by licensing commitments, i.e. where SEP owners

have given an undertaking to grant licenses on FRAND terms. As far as we know, ETSI has not experienced problems with a situation where a standard was decided based on significantly incorrect assumptions about the relevant patent situation. The ETSI disclosure/declaration process facilitates faster development of the standard because it dramatically reduces the time and complexity of discussions in the technical committee where the work can focus on solving technical problems.

Q 3.1.3 Ex-post transparency: Either as licensor or as licensee, how do you initiate the licensing of the relevant patents? What are the means of identifying the relevant patents, the patent holders, the potential licensees, etc.? What are the respective costs of collecting information on the patent situation?

Licensors generally maintain sizeable patent departments to file and prosecute SEPs with a specialist licensing division. Nokia is no exception. These departments also map SEPs against relevant standards and prepare declarations when appropriate. In the mobile telecommunications industry it is relatively easy to identify potential licensees since they will be making devices which are compliant with the relevant standards. It is also easy to identify relevant patents as they should be declared and reputable patent holders should be able to produce claim charts to demonstrate relevance. It is Nokia's practice not to commence licensing negotiations without evidence of the prospective licensee infringing patents that are believed to be both essential and valid. Licensing is usually conducted on a portfolio basis, not patent by patent. This is the norm in the telecom sector, as it is driven by obvious efficiencies. The effort and cost of preparing and initiating license negotiations is substantial.

Q 3.1.4 Non-transparent aspects: In those areas where you deem patent transparency insufficient, what aspects of the patent situation are insufficiently transparent: (1) existence of patents, (2) validity of patents, (3) essentiality of the patents for the pertinent standard, (4) ownership of the patents, (5) enforceability of the patents, (6) coverage of patent by existing licences/pass through and (7) others? Please explain.

These questions are addressed in order below:

- (1) With regard to transparency of the existence of patents, this is dependent on the SEP disclosure process. Nokia is not aware of any fundamental problems. Please see our answer to Qn. 3.1.1 for more detail.
- (2) Concerning validity, it is impossible to achieve complete transparency. This is because it is never possible to prove validity, only invalidity – which depends on known prior art. When a patent office grants a patent, it does so on the basis of the prior art then available. If no relevant prior art is found a patent is granted. The patent is rightly presumed valid. However, new prior art may become available later. For example, in litigation, when there is a lot at stake, it may benefit a defendant to spend far more resources than the patent office searching for prior art not previously found. If prior art is discovered the patent becomes invalid. If not, the patent remains valid. In this sense, complete transparency of validity is impossible although transparency of invalid patents is possible.
- (3) As explained in more detail in our answer to Qn. 3.1.1. this consultation will help reveal empirical evidence for any real, rather than hypothetical, problems around essentiality transparency that might exist, if there are any.

- (4) There is no apparent insufficiency of transparency with respect to patent ownership. The ownership of patents is generally known or can be readily found out often with the help of free, publicly accessible databases. If not, ownership must be established in any eventual litigation so that all parties are fully aware.
- (5) A wide variety of fact specific issues determine patent enforceability. Most of these issues are determined by a court. While this may not provide a great deal of pre-litigation transparency, it is unclear as to how this situation could be improved. One factor in determining enforceability is validity which we have already addressed in our answer to (2) above.
- (6) As with enforceability, license scope is something which often cannot be fully determined with any accuracy until ultimately ruled upon by a court. Thus, while this does not provide a great deal of pre-litigation transparency, it is unclear as to how this situation could be improved. Having said that, as part of a routine due diligence process, prospective licensees can readily examine their own pre-existing licences and can enquire of other relevant parties, and make their own determination whether a patent is already licensed to them through another route. In any case, it is not common in our experience for licensors to seek to grant licences to those who do not need them because they are already licensed, directly or indirectly.

Q 3.1.5 Consequences/risks: What are the consequences of insufficient patent transparency? What risks occur, and what are the (financial) impacts if these risks materialize? If appropriate, distinguish between ex-ante/ex-post transparency and between the different aspects of patent transparency above.

There does not appear to be any significant issues with respect to ex-ante transparency. With respect to ex-poste transparency, the lack of transparency relates to issues which ultimately are decided by courts.

Q 3.1.6 Cost of coping individually: How do you deal with situations where you perceive that patent transparency on one or several aspects of interest to you is insufficient? Do you gather information pro-actively or do you wait to be contacted (e.g. by patent holders requesting royalties, by implementers asking for licences)? What costs are involved in dealing with situations of low patent transparency?

Nokia would gather information pro-actively. This would be seen as part of any normal due diligence exercise, in that sense no different to entering into any other substantial contractual arrangement.

Q 3.2.1 Trigger of obligation: Patent declaration obligations could be triggered either by membership of a standard setting organization, or by participating in a specific standardisation project or by having directly suggested a (patented) technology for a draft standard. What are your views on the respective triggers (advantages, disadvantages)?

Nokia agrees with the triggers in the question, namely that patent disclosure obligations should be triggered by membership in an SSO, and specifically by participation in a specific standardisation project, as they are in ETSI (see Clause 4.1 ETSI IPR Policy). In the interests of full transparency it should always be possible for members to disclose SEPs owned by third parties, and also for non-members to disclose SEPs.

Q 3.2.2 Required effort: What effort should be required from a patent holder in identifying relevant patents in his portfolio? Should these efforts be contingent on the degree to which the patent holder participates in a specific standard setting process (for example whether or not he has actively contributed the technology in question)?

Patent owners should not disclose patents lightly, but only after careful review. Please see our answer to Qn 3.2.3 for more details on the careful ‘double check’ review process Nokia employs for disclosing SEPs.

Q 3.2.3 Process of declaration: If you are a patent holder active in a standard setting body that requires patent declarations, how do you comply, in practice, with the obligation to declare specific patents? What are the concrete steps undertaken to identify such specific patents, and what parts of your organization are involved?

Nokia uses a systematic ‘double-checking’ procedure to inform SSOs about its SEPs. Basically we conduct frequent periodic reviews of our patent portfolio (published applications and granted patents) against the standards we are involved in to ensure that patents which are essential to those standards are disclosed according to the rules of the respective bodies. This review involves systematically mapping the patent claims against the relevant part of the standard. Initial essentiality decisions are subsequently reviewed by others knowledgeable about a particular standard before a patent is disclosed as essential.

Q 3.2.4 Costs of declaration: What are the costs involved in complying with an obligation to declare specific patents? What are the respective costs of (1) identifying patents and (2) informing the standard setting organization? Would you search for patents in your own portfolio that relate to a standard, even when there is no obligation from the SSO patent policy? If yes, would your approach differ in process and thus in cost? Please be as specific as possible.

The costs of disclosure are not insubstantial, especially for companies that invest heavily in standards-related R&D generating significant numbers of patents. But this cost is generally regarded as part of the overall patent portfolio management costs, which normally involves patent by patent evaluation. In other words, patents are not licensed or enforced without careful analysis, and a similar analysis is conducted for disclosure. So this is not double work. In this sense, the direct costs of disclosure should be limited. However, it has to be noted that litigation related costs relating to disclosure issues can be substantial.

Q 3.2.5 Blanket declarations: Some standard setting organizations require their participants to declare that, in general, they hold essential patents over a standard without requiring that these participants identify each of these patents specifically. Do you believe that such declarations provide for enough transparency? Please justify your answer, where necessary distinguishing situations where you consider that this approach is sufficient from those where you do not.

Such ‘broad brush’ declarations provide some freedom, provided they are underpinned by a blanket declaration undertaking to make licences available on FRAND terms for all relevant SEPs. Otherwise, this does not provide much transparency, e.g. with respect to the number of SEPs, status of the patents/applications etc.

Q 3.2.6 Scope/detail: Where standard setting organizations require that patent holders identify the relevant patents individually, what information about the patent should be transmitted? Only the

patent number or other aspects? What are the respective benefits and costs of requiring that the patent holder also (1) specifies to which part of the respective standard the declared patent belongs and/or (2) explains why the patent is relevant for the standard?

Generally the identification of the applicant (owner) and patent (e.g. publication/patent number and title) including members of the same patent family, is sufficient information about the disclosed SEP itself as the patent can then easily be located using public patent online search tools, which are free. Also, it is helpful for third parties to be able to make their own essentiality assessment if the relevant part of the specification is referenced. This is the level of Information required by ETSI for example, see the ETSI Licensing Declaration Forms: www.etsi.org/images/files/IPR/etsi-ipr-form.doc. This is information which the SEP holder should anyway be checking internally before disclosing patents as essential, so it does not inherently add to the cost.

Q 3.2.7 Consequence of non-compliance: What should be the consequences if a patent holder has failed to comply with its declaration obligation (for the standard, for the patent holder, for licensing negotiations)? Should the respective standard setting organizations take action and what should this action be? Are the consequences of non-compliance sufficiently clear in your experience?

The patent holder is not obliged to give a FRAND undertaking with respect to particular patents. For SSO rules to be compliant with TRIPs and competition law, SSOs cannot impose compulsory licensing obligations on patent holders. In the event that a patent holder declines to license its technology for a standard on FRAND terms, then the SSO should change that standard. However, where a patent holder has declared a patent to a standard and given an undertaking that it will license its patents on FRAND terms, and subsequently fails to comply with that undertaking, then the patent holder should not be entitled to obtain an injunction under that patent. The court or other adjudicator should set any damages award taking into account the undertaking given and all the circumstances of the case.

Q 3.3.1 Initial accuracy: In your experience, what is the reliability of patent declarations at the time when they are made? In which fields of standardisation and on which aspects of the declaration would initial accuracy need to be improved? What causes of initial inaccuracy are particularly detrimental to the usefulness of patent declarations?

Essentiality disclosures rely on a 'self-certification' procedure. Inaccuracy which stems from intentional over-declaration as an attempt to inflate the apparent size of one's SEP portfolio can be detrimental. But early determination of essentiality is not an exact science. Both patent applications and proposed standards change over time. As such, there is inherently an element of inaccuracy until they mature into final documents.

However, Nokia's systematic double-checking of essentiality (described in our answer to Qn. 3.2.3) means that we can be relatively confident that the patents we disclose are essential.

Q 3.3.2 Updating requirement: Should declarants be asked to update their patent declarations at key events such as those mentioned above? What would be the respective advantages and disadvantages?

Nokia does not currently have a view on this. However, this is a topic which has started to be discussed, e.g. in ETSI, and Nokia will participate actively in those discussions. We do recognise, however, that re-visiting essentiality disclosures would mean an additional burden and associated cost for SEP owners.

One aspect which would help enhance transparency would be to clean the SSO IPR databases from the patents/applications which have either been abandoned or expired. This kind of cleaning could be carried out relatively easily by the SSOs themselves, without the involvement of SEP owners, using public databases available through Patent Offices. Of course SEP owners would need to be able to correct any mistakes and have any wrongly removed SEPs re-instated.

Q 3.3.3 Check of declarations: Should the quality of patent declarations be submitted to a check by someone other than the declarant? Who should perform this check (peer review by members of the standard setting organization; standard setting organizations themselves; third parties on behalf of the standard setting organizations; patent offices; etc.)? What should be the scope of the check (essentiality for the standard; validity; enforceability; other)? Who should bear the cost of such a check? If you think the declarant should bear (part of) the cost, how can it be prevented that this creates an incentive to disrespect the declaration obligation?

As mentioned in our answer to 3.1.1, discussions around patent transparency are beginning to emerge in SSOs, most notably in ETSI, where this topic started to be addressed in January 2015. Nokia is contributing and will continue to contribute actively to these discussions. One specific question posed in this context is whether it might be possible and useful for ETSI to have a database of granted SEPs which have been checked for essentiality. The preliminary discussions in ETSI recognised that this is a complex topic touching on many issues both legal and practical, including cost versus benefit and where any cost burden would lie. However, the overarching message that came out of this preliminary discussion highlighted the importance of first establishing more carefully whether there is indeed a real problem around SEP transparency and, if so, what the nature of that problem is, before trying to come up with a solution. Hopefully, this consultation will help reveal the nature of any problems around SEP transparency and Nokia looks forward to contributing actively to the debate as it develops with a view to finding workable solutions.

Q 3.3.4 Essentiality check (in particular): Depending on your answer to the above question, how can the essentiality check be performed in practice? What are the average cost of checking essentiality (for third parties) and what could be done to minimize these costs? Do you see a set-up of such a check that is particularly cost and time efficient? How can it be avoided that this check creates incentives for not respecting the declaration obligation?

Nokia would not be opposed to external checking of essentiality disclosures. It is our understanding that patent pools commonly use third party law firms to conduct essentiality checks for patents. Also, it is widely known that private commercial consultancies offer reports and analysis of SEPs. Costs can be managed through volume discounts and the requirement to provide claim charts with detailed mappings.

One suggestion we are aware of is that the EPO might offer a service giving non-binding essentiality opinions. Without knowing more details, it is difficult to take a position on this, and we are not against this idea in principle. However, it is noted that one common criticism of opposition proceedings in the EPO is that they generally take far too long, often many years. It would have little or no value if it similarly took years for the EPO to determine essentiality. On the other hand a 'quick and dirty' opinion would have severe drawbacks too. An additional consideration is that, in view of the limited availability of EPO examiners capable of comprehending complex telecoms technology, giving them this additional task would likely have an impact on routine patent examination, slowing down the prosecution and grant process. This would be more pronounced in telecoms than in other

fields not impacted by this additional call on examiners' time. The priority of the EPO must be to ensure timely and efficient grant of highest quality patents possible. This is equally true of SEPs as it is of patents generally.

Q 3.4.1 Publication: Should standard setting organizations make the declared patent information publicly available? Do you see any impacts on the protection of personal data? Under what conditions would it be justifiable to restrict access or to charge for access?

Yes. It is in the interests of full transparency for SSOs to make all disclosed patent information publicly available. Specifically, disclosure information should not be limited to SSO members only.

Q 3.4.2 Ease of access: What are your views about the various methods used by standard setting organizations to make the declared information available? Which methods do you find particularly useful and why?

SSO tools for searching disclosed SEPs should be online, publicly available, as easy to access and use as possible, and free of charge. ETSI has a comprehensive database of disclosed SEPs that largely meets these criteria. However, we are aware that some say there may still be room for improvement from a user's point of view.

Q 3.4.3 Combining information: Some standard setting organizations combine declared information with information drawn from other sources, such as patent offices. What are your views on this? In what forms and to what fields of standardization could this be expanded? What sources of information (in addition to patent offices) could be used and what types of information could be added?

As commented in our answer to Qn 3.3.2, SSOs could periodically check the status of declared patents against databases administered by Patent Offices and remove patents that have been abandoned or expired. This kind of cleaning could be carried out relatively easily by the SSOs themselves, without the involvement of SEP owners. Of course SEP owners would need to be able to correct any mistakes and have any wrongly removed SEPs re-instated.

Q 3.5.1 General question: What can be done to increase standardisation-related patent transparency other than to strengthen the system of patent declarations used by standard setting organizations?

This is a topic which has just recently started to be discussed, e.g. in ETSI. Nokia will participate actively in those discussions.

Q 3.5.2 Public patent landscaping: Public patent landscaping in the context of standardisation would be an exercise where (1) patents that are relevant to the particular technological/product area to which the standard relates are identified and (2) this information is then shared with all interested parties. Do you see benefits of such public patent landscaping and in which areas would this be particularly useful? Who should perform this exercise (e.g. patent offices, commercial service providers, public authorities) and how could this exercise be financed?

Nokia is not sure if public patent landscaping would be a useful endeavour over and above the means already available to identify relevant patents. Patent landscaping is merely a snapshot at one moment in time, whereas the patent landscape is constantly changing both because of the

evolutionary nature of standards and the dynamic nature of relevant patents (e.g. changing scope, changing status, new patents etc) over many years. When any landscaping is done it is soon out of date, and this could give a misleading picture to SMEs for example.

Q 4.1.1 Prevalence: How common is it, in your area of activity or interest, that standard essential patents are transferred? Are standard essential patents transferred more, or less, often than other patents? Do you see any trend in the transfer rate? Do transfers usually concern individual patents or larger patent portfolios?

Historically, there has been only a limited market for patents. However, during the past 5-10 years demand has increased and patent sales have become more and more common in the telecoms industry. However, we are not aware of SEPs being transferred more or less frequently than other patents. In absolute numbers, SEPs are a clear minority. It is our experience that there are operating companies that have divested or are looking to divest portions of the SEPs as well as operating companies that have acquired or are looking to acquire SEPs to improve their portfolios. Examples of the latter include the Lenovo acquisition from NEC, the Google acquisition of Motorola Mobility, and the Apple acquisition of the LTE patents out of the Nortel portfolio from Rockstar. In our experience, the transfers of SEPs vary from individual patents families to large portfolios.

Q 4.1.2 Issues and consequences: In your experience, what are the typical issues that arise in the context of transfers of standard essential patents? Are such transfers leading to more or less fragmentation of SEP ownership? Are these transfers leading to more or less disputes/litigation? What is their impact on royalty rates for the transferred patents and on the total royalty rate for all patents essential for a standard?

With respect to transfer of SEPs in particular it is important for a new owner of a SEP to adhere to the applicable FRAND undertaking made by a predecessor. Otherwise the entire FRAND undertaking could be undermined and circumvented by transferring SEPs. Nowadays this is usually taken into account in the IPR policies and other relevant rules governing the FRAND undertakings of members of various SSOs, which require any new owners of SEPs to adhere to the FRAND undertaking requirements of such policies and rules. This issue is in our view not a problem as it is mostly addressed by the SSO policies and rules already. To the extent that SSOs have not adapted their Policies accordingly we would support such changes. However, such Policy changes should not seek to impose more restrictive conditions on transfer generally over and above conveying the FRAND obligation with the SEP. In other words transfer of a SEP should never be a means of circumventing a FRAND obligation.

The question of fragmentation is complex because on the one hand certain entities are divesting portions of their SEP portfolios leading to more fragmentation while at the same time other entities are aggregating SEPs leading to less fragmentation. SEP ownership in the ICT sector has always been and will continue to be divided between numerous entities. This is exactly as it should be so that all SEPs are not held by one dominant actor. In our view, this showcases a wide participation in standardization and broad investment in the respective R&D.

FRAND undertakings serve two main purposes: (1) they ensure that a standard is accessible to implementers, i.e. that the patent owners will not block anyone, including competitors, from

manufacturing standard compliant products; and (2) they provide innovators a reasonable return on their investments in order to incentivize continuous investment in further development of open standards. In our view, the transfer of SEPs does not compromise either of these purposes but rather enhances them: the standard will remain accessible to implementers because the new owners of SEPs adhere to the applicable FRAND undertakings; and the innovators remain incentivized to invest in standardization as they can obtain a reasonable return on their R&D investment. With respect to the standardization framework, the proper functioning of the balance between innovators and implementers with the help of FRAND undertakings is the key, not whether there is more or less litigation.

Q 4.1.3 Non-practising entities: Have you encountered transfers of standard essential patents to entities that do not produce or market products including the technologies covered by these standard essential patents? What particular consequences have you observed?

We are aware of SEPs that have been acquired by NPEs "non-practicing entities" (NPEs). While NPEs do not make or sell products themselves, they do bear the research and development cost (and risk) that has gone into the development of the patented technology. They do this either by carrying out the R&D themselves (for example universities) or by paying it through the purchase price of the patents they buy from the entity that has carried out that research and development (and hence compensating such entity, whether it's a company, university or other entity, for its cost).

Because NPEs bear their share of the R&D cost, we do not view them as inherently malign operators in the standards business eco-system because they provide and encourage the much needed funding and investment for R&D activities. The foregoing applies regardless of the field of research and development in question, and is therefore applicable to all patents, including SEPs.

An example of such funding is the French based sovereign investment fund France Brevets (www.francebrevets.com) that is financed among others by the state of France and is fully dedicated to patents. France Brevets could be described as a "non-practising entity" that is using French taxpayer money to fund R&D investment. France Brevets recently announced¹ their first license agreement under their Near Field Communication licensing program that includes both SEPs and non-SEPs that they have acquired.

In our experience transfers of SEPs to "non-practising entities" do not occur any more frequently than to operating companies.

Whether or not a SEP holder is an operating company says nothing about its licensing practices. Nokia's view is that every company involved in SEP licensing should follow ethically sound licensing practices. This applies not only to SEP holders but potential licensees as well. In fact, the increase in potential licensees that opportunistically delay and avoid taking a license on FRAND terms has given rise to new business models that take the respective increase in transaction costs (such as increased negotiation times and ultimately litigation) into account. The increase in unwilling licensees has increased business opportunities for entities that specialize in licensing and litigation and many new companies specializing in such business models have emerged.

¹ http://www.francebrevets.com/sites/default/files/FB_signs_LGE_RELEASE_18TH%20AUGUST.pdf

A separate consideration is that the legal processes in some jurisdictions do not allow a defendant that wins a case in court to recover its legal costs from the plaintiff. This loser-doesn't-pay principle can be misused by some opportunistic plaintiffs to pressure a defendant to pay a settlement fee to avoid increasing litigation costs. This conduct may also occur in connection with patent litigation, including SEPs. However, it is vital to note that the fact that some opportunistic plaintiffs may misuse the litigation system this way has nothing to do with the patent system or SEPs as such. To end or mitigate such misuse requires a change in the loser-doesn't-pay principle. But such misuse does not warrant any change in the regulations relating to patents generally, or SEPs in particular, and any such regulatory changes would, in our view, be misguided as they would not be addressing the actual problem but rather just one consequence of it.

Q 4.2.1 Impact on effectiveness: Is there a risk that SEP transfers circumvent existing patent policy rules of standard setting organizations or render them less effective? Please explain and if possible cite specific examples.

There appears to be broad consensus in the telecoms industry that transferring a FRAND encumbered SEP should not be away of circumventing the Patent Policy rules of an SSO or FRAND commitments made by an original SEP owner. Nokia certainly shares this view. To the extent that SSOs have not adapted their Policies accordingly we would support such changes. However, such Policy changes should not seek to impose more restrictive conditions on transfer generally over and above conveying the FRAND obligation with the SEP.

Q 4.2.2 Specific rules: In your area of interest, are there specific rules governing SEP transfers and what is your experience with them? Where there are no specific rules, would you see a need for such rules? What should be their objectives (achieving transparency about ownership, providing legal/business certainty, reducing litigation risks, facilitating smooth licensing process, fostering research and innovation activity, etc.)?

The ETSI IPR policy now contains an obligation on members when selling SEPs to transfer any undertakings relating to those patents.

Q 4.2.3 Transfer of FRAND commitment: How can it be ensured that the new owner of the transferred SEP is bound by the FRAND licencing commitment given by the initial owner? What can standard setting organizations do in this regard? What do the sellers of the SEPs need to do? Should the licencing terms (including royalty rates) practiced by the initial owner influence the interpretation of the concept of "FRAND" for the new owner?

Other SSOs could adopt the same or similar rules to ETSI. Licensing terms and royalty rates of the new owner must comply with the obligation transferred to them. However, this does not mean the practice of the previous owner is necessarily applicable to the new owner. There will be differences in their respective practices for example licensing models, circumstances of the parties, value of any grant-back to the new owner. These differences could make it inappropriate for the new owner to adopt the same or similar practices as the previous owner. Each case must be judged on the facts.

Q 4.2.4 License of right: Have you been involved in the use of a License-of-Right system? What benefits and risks are, in your opinion and experience, linked with this? Are there important differences across national jurisdictions that reduce the reliability of License-of-Right provisions?

No. It is noted that there is a licence of right provision in the Unitary Patent Regulation (Article 8 and Recital 15 of Regulation (EU) No. 1257/02) – yet to come into force, but this is not well defined and it is unclear how it would work or even how it is intended to work.

5.1.1 Target areas: What are the situations/external factors which render a patent pool useful? Are you aware of specific standards for which a patent pool would be useful but where there has been a failure to create one?

In Nokia's experience, patent pools are more typical, and indeed successful, in the consumer electronics environment, where they generally deal with a relatively narrow well-defined 'package' of technology such as STB, DVD or Blu-ray. While patent pools aim to provide a "one-stop" shop licensing, i.e. a single collective license fee for all patents contained in the pool, there are some significant drawbacks. For example patents outside the pool are not and cannot be included in the collective licence, and as such are 'out of scope'. It may not even be fully clear what patents exist outside the pool. Nor does a patent pool provide licensees with any indemnification against infringement of 'out of scope' patents. On the other hand, patent owners cannot be compelled to join a pool, and there are disadvantages or disincentives for patent owners to join, for example reduced control over their own patents. In short, a licence from a patent pool does not guarantee complete freedom of action under the relevant standard, and to that extent does not imply a fully transparent and fully effective solution. In areas like telecoms which involve complex technologies both converging and complementary, which are constantly developing and evolving over long periods, patent pools are not an answer.

Perhaps the most successful example of a patent pool is MPEG. It has a large number of patent holders participating. The technology is well defined and visible with regard to implementing products. It contributes in a clear manner to the functionalities of the products.

Q 5.1.2 Benefits of patent pools: What are the benefits of patent pools in the above situations (Q 5.1.1) respectively for patent holders and/or patent users? What aspects in patent pool governance are particularly relevant in practice to ensure the realization of these benefits?

The main advantages from the SEP owner viewpoint is that less resources are required than for bilateral licensing, i.e. lower transaction costs. However, resources (including essentiality evaluation) needed to set up in the pool, and there is a requirement to pay a commission to the administrator. Generally there is less flexibility than in bilateral licensing, for example losing the possibility for cross-licensing (grant back of licensee's patents).

The main advantages for a licensee viewpoint is the 'one stop shop' concept, it is easier to secure a license, if ready to accept the royalty requested by the pool ("sign here and pay here"), i.e. the license covers many licensors without separate negotiations. Hence, less resources are required than in bilateral licensing, implying lower transaction costs. However, there is often less flexibility than in bilateral licensing, so it is difficult to tailor a license to specific circumstances. Having said that, a licence from a patent pool does not guarantee complete freedom of action under the relevant standard, as it may not include all needed patents, and the pool cannot provide an indemnity against not-included patents.

Q 5.1.3 Alternatives to patent pools: What alternatives to patent pools do you see to achieve efficient licensing in situations where ownership of patents which are essential to a standard is widely dispersed?

Nokia believes that market driven FRAND licensing provides the most efficient results. Patent pools are one manifestation of market driven FRAND licensing, but if no patent pool exists it suggests that the most efficient way of licensing is by other means, for example direct bilateral negotiations between individual SEP holders and implementers.

Q 5.1.4 Difficulties of pool creation: What are the main difficulties in setting up a patent pool and how can they be addressed? Are there differences in national law or its application across countries of the EU/EEA or worldwide that make patent pool creation more difficult?

Creating a patent pool is a complex process. Aside from setting the royalty level there are numerous other matters to agree on, including: the definition of licensed products, the geographical coverage of the license and the distribution of royalties based on the participants' patent ownerships in the respective geographical areas, the role and compensation of the administrator, how litigation decisions will be made and what compensation will be paid for companies whose patents are used in litigation, defensive suspension clauses and possible grant backs of licensees portfolios, etc.

Often patent pools may encounter conflicting interests among the patent owners: some want to optimize the royalty income, some want to minimize potential payments to be made to the pool, some just want to learn about how to conduct licensing negotiations, some participants just attend meetings because their management believe it is useful for the business to participate in a patent pool, some just want to 'squeeze-in' poor patents which may not be licensable otherwise, some don't even know what their objectives should be regarding the pool, etc.

The larger patent pools are, the more difficulties there will be in creating them.

In general, it is not the applicable regulations which pose challenges to the creation of patent pools, but the fact that a group of different parties have to agree on many parameters while having conflicting interests.

Q 5.1.5 Costs of pool creation: What are the costs involved (do you have estimates)? What do these costs depend on? How are they usually (pre-)financed?

The costs of setting up a pool are substantial and typically will include, the costs of meetings necessary to create the pool and from the evaluation of the essentiality of the patents to be included into the pool. For example, meeting costs alone could be calculated by assuming two persons participate in perhaps 10-20 meetings, during a 2-3 years period. Including the labour costs and all other running costs, this can amount to around 500k Euros. The essentiality evaluation per patent is roughly 5k euros, and for a global patent pool covering at least three regions the cost is 15k Euros per patent. If a company has 100 patents which have been declared essential and which are to be evaluated, the cost will soon add up to around 1.5m euros. Assuming 10-20 companies are involved, the total cost of a patent pool project easily amount to 20-40m Euros for the patent holders. In addition, the administrator would incur costs of say 1-2m euros simply to facilitate the meetings. This is aside from necessary legal advice for constituting the pool and checking compliance with stringent and complex competition law requirements.

It is a big investment decision for companies to make, while the outcome may be quite uncertain. This investment needs to result in more efficient licensing, which in practice is seldom the case.

Q 5.2.1 Decision to participate in pool: What factors influence a patent holder's decision to participate in a pool or not?

The biggest decision point for a patent holder is whether the needed investment to create a pool will provide adequate returns and efficiencies.

Q 5.2.2 Incentives for pool participation: How can this balance be influenced positively? What incentives can be provided by public authorities and/or standard setting organizations to increase patent pool participation?

This question is based on the premise that it is beneficial for public authorities and/or SSOs to incentivise participation in patent pools. We do not necessarily agree with that premise. Nokia believes that market driven FRAND licensing provides the most efficient results. We would see it more beneficial for public authorities to encourage licensees to engage in effective and efficient negotiation and conclusion of FRAND licenses, and discourage free-riding.

Q 5.3.1 Right moment for pool creation: What is the right moment in the standard setting process to start the process of creating a patent pool? What part of work on setting up a patent pool start could/should be done in parallel to the standard setting discussions?

A viable pool can really only be established (a) once the constituent patents in the pool have all been granted in order that a fair distribution of royalties can be determined as between the various patent owners, and (b) after there is sufficient visibility regarding the products entering the market using the technology in order to define 'licensed products' in license agreements and so that an appropriate royalty level can be determined. This means that it is seldom, if ever, feasible for a viable patent pool to be created in parallel with standard setting discussions.

From the individual patent holders point of view it is difficult to establish a licensing programme before SEPs are granted which usually takes at least 3-5 years. Then there is enough visibility for companies to establish an overall licensing strategy, and only at that time is it really possible to decide whether or not it would be a better strategy to participate in a patent pool.

Q 5.3.2 Role of SSOs: What contribution can standard setting organizations make with regard to patent pools? Should they provide guidance patent pools? Should they provide and/or select patent pool administration services?

The overarching objective and priority of SSOs has to be the selection of optimum technologies for standards. SSOs should not be involved at all in commercial aspects such as patent licensing. This would only frustrate the main objective of the SSO. A patent pool is only one approach for patent licensing and patent owners must retain the right to decide the best licensing approach for them based on their particular business interests. There is one organization, where the IP Policy obligates the SSO to 'facilitate' patent pool discussions, but the role there is merely to organize the initial call for interested companies to gather and discuss whether there is an interest for creating a patent pool. So, even in that case the actual role of the SSO in pool creation is minimal. The SSO in question is the DVB Project under the EBU, where the patent pool concept was inherited from the broadcasting business.

Q 5.3.3 Role of public authorities: What contribution can public authorities make to facilitate patent pool creation? What role could publicly owned patents play? Are there specific features of non-EU legal systems that could be useful also in the EU? Under what conditions and to what purpose would public financial support be beneficial?

We do not see a useful role for public authorities being involved in facilitating patent pools. Nokia believes that market driven FRAND licensing provides the most efficient results and that patent licensing should be left to free market forces, without state intervention. Where pools are appropriate they should be formed by commercial actors and allowed to be formed by public authorities under the management of an entity at arm's length from the pool members. On the other hand where the market determines that patent pools are not appropriate, e.g. in inefficient, public authorities should not be encouraging or facilitating them. Certainly public authorities should not themselves be involved in setting up or organising patent pools, still less in purchasing patents to create any kind of publicly funded patent fund inclined to favour certain categories of licensee (e.g. small and/or domestic entity) over others (e.g. large and/or foreign entity) because this might infer unfair competition and/or distortion of trade. Public authorities should be more interested in creating a level playing field for all actors. Policy, supported by the legislative and regulatory framework, should have as its primary, overarching objective the promotion of efficient patent licensing. Creating an environment where SEP owners can efficiently and effectively conclude licenses to their patents on FRAND terms is a bigger challenge today than ensuring new market entrants have access to third party patents, recognising that licensees are increasingly more reluctant to take FRAND licences when SEP owners are ready to grant them.

Q 6.1.1 Notions "fair" and "reasonable": How, in your view, should the terms "fair" and "reasonable" be understood? Which of the above methodologies do you consider particularly appropriate, which other methodologies do you find important and what could be an appropriate mix of references?

The principles of FRAND determination should be market driven, not prescribed

Market driven FRAND licensing promotes negotiated results which minimize transaction costs and provide highest consumer benefits. Prescribing FRAND (e.g. by mandating a royalty base) may in effect constitute price regulation.

There are broadly three scenarios where FRAND is applied in practice:

- (1) The vast majority of cases get resolved by license negotiations between individual SEP licensors and licensees. If the SEP licensor has an established programme for its SEP portfolio with set FRAND rates which others have already agreed then these rates, and expected sales of the licensee, will form a basis for negotiations.

Otherwise, the parties will typically determine FRAND terms by first holding technical discussions where a sample of the whole portfolio is considered. Each will look into the extent to which the patents are utilised by the standard, the geographic scope, the age profile, success in previous litigation and other aspects. Because it is impracticable to review each and every patent, the parties will typically use proxies such as sampling, citation analysis or third party studies. The parties will also be aware of other licensing transactions in which they have been involved, or

have public information about third party transactions. They will form a view about the value that they think is appropriate for this transaction based on those.

- (2) Where the negotiations between individual SEP holders and implementers are not successful, a court or an arbitrator may be called upon to determine whether the relevant SEP portfolio offer made in negotiations is or is not FRAND, or in cases where no FRAND offer has been made, to determine FRAND terms for such portfolio.

When an arbitrator or a court seeks to determine a portfolio FRAND rate, it will usually order each party to disclose their relevant existing agreements. When those are available the best approach is to use them as comparators to determine FRAND compliance or a FRAND rate. Economists and econometric experts can generally determine rates from lump sum or cross licenses through methods such as triangulation or regression analysis. For most licensing parties the most important concern is often that they are paying or receiving a non-discriminatory market rate. Verifying or setting a rate with reference to existing license data helps to ensure this.

Otherwise, the court or arbitrator will consider other relevant factors which would include for example the portfolio of SEPs in question, the term of the license, the products licensed, the business model for selling or distributing such products, the standards covered, the extent of market adoption of the standardized functionalities, the agreement structure, the value of any grant back license or any other non-monetary compensation, payment arrangements, and the field of use that are intended to be covered in each situation, etc.

- (3) Where neither of the preceding alternatives applies, a court or an arbitrator may set out to determine a rate for a single SEP. However, a single SEP hardly ever covers an entire standard and a licensee mostly needs a license to all relevant SEPs. Therefore, a process of determining a FRAND rate for a single SEP in isolation will not resolve the dispute between the parties and can be an indication of unwillingness of one of the parties to achieve a resolution. Where a court nonetheless does determine a single SEP rate, the same principles are applicable as in other patent disputes. Ideally the court would set a rate based on a comparable patent for comparable use.

Q 6.1.2 Examples of non-FRAND licences: Are you aware of cases of licenses of standard essential patents that, according to you, do not fulfil the FRAND terms and conditions? Please be as specific as possible.

FRAND is not a specific set of terms, but can vary from case to case. Although Nokia has sometimes been faced with initial requests we have considered excessive we have usually been able to conclude licenses on terms and conditions we considered appropriate and in accordance with FRAND.

Q 6.1.3 Time required for negotiations: In your experience, how long does it take, on average, to negotiate FRAND terms? What does the length of negotiations depend on? Is it more or less difficult/fast to reach an agreement on FRAND terms and conditions for standard essential patents licenses compared to other similar patent licensing deals?

Variations in the length of the negotiations with truly willing licensees result mainly from variations in the time required for going through the basic technical matters relating to the SEPs in question, specifying the covered product offerings and/or agreeing on the preferred royalty payment

schedules etc., and also from logistic considerations most notably geographical distances and time zone differences of the negotiating parties.

In theory, license negotiations for SEPs are inherently more straightforward than normal patents i.e. non-SEPs because (1) the relevance of the patent can readily be determined with reference to the published standard specification, and (2) the products are more easily identified as infringing simply because they are compliant with the relevant standard. But what we see in practice is somewhat different.

Potential licensees that are unwilling to obtain a license on the FRAND terms offered by a SEP holder want to delay concluding a FRAND license for as long as possible in order to enjoy and continue enjoying the cost benefit that flows from selling unlicensed products. This is the phenomenon known as 'free riding'. Even though unwilling licensees may try to appear superficially as if they are interested in obtaining a FRAND license (answering emails, attending meetings etc.) they are actually opportunistically using all kinds of tactics to unnecessarily delay negotiations. Please refer to our answer to Qn 2.1.1 where we provide empirical evidence to illustrate the extent of the problem of reluctance to negotiate, especially in certain parts of the world.

A more recently encountered tactic for delay is for unwilling licensees to invoke the current Patent Policy discussions in various SSOs. They claim these discussions call into question the value of SEPs and therefore it is not appropriate for them even to negotiate while the policy debate remains open. Hence the mere existence of the debate is being used as an excuse to delay license negotiations, and this excuse will continue to be used for as long as the debate continues. In other words it suits unwilling licensees for the discussion to go on without resolution.

Q 6.1.4 Initial offer or outcome: Do the terms "fair" and "reasonable" relate to the initial offer of the patent holder or to the actual outcome of negotiations? Are you aware of FRAND adjudication cases where there was a large difference of terms and conditions between the last offers of the licensor on the one hand and the last offer of the licensee on the other?

The exact content of each FRAND undertaking is subject to rules applicable to it. A FRAND undertaking is usually understood to mean an obligation by the SEP holder to make the patented technology accessible for the implementers of the respective standard. In Nokia's licensing practices any offers made by Nokia for SEP licenses fulfil the FRAND commitments undertaken by Nokia.

Q 6.1.5 Other methods of ensuring reasonableness of licensing terms and conditions: Can patent pool prices for a given standard be a proxy for FRAND terms and conditions? What are the limits of the use of patent pools as a proxy? How can bias coming from such a method be avoided?

The relatively modest success of patent pools shows that SEP holders and implementers do not consider patent pools to be a preferred way of agreeing on SEP licenses. Patent pools often lack the flexibility provided by bilateral negotiations and generally complicate negotiations as the interests of various stakeholders must be considered simultaneously. No patent pool existing in the ICT sector represents a large number of SEPs or SEP holders, or has a significant number of licensees. Furthermore, it cannot be assumed that all patents are equally valuable so even if there is a benchmark royalty from a pool it has to be recognised that some more, or less, valuable patents may also exist outside the pool.

For these reasons, any royalty rates agreed in the context of a patent pool should be viewed only in the context of the pool. It would be unsafe to use them as proxies for FRAND terms to any greater extent than any other existing license agreements.

Q 6.2.1 Existing guidance: To your knowledge, what guidance on FRAND definition already exists (regulators, standard setting organizations, courts)? Which of this guidance do you consider as particularly useful? Would you welcome additional guidance? If so, on what specific aspects of FRAND?

Regulators and SSOs have so far not defined FRAND and thus not given guidance on how to calculate FRAND license rates, although there has been some recognition of the efficiencies of portfolio licensing. However, there have been some court decisions setting FRAND rates and the courts have found ways to deal with these types of issues.

It would also be desirable for SSOs to encourage parties to use arbitration to settle FRAND disputes in their IPR rules.

Q 6.2.2 Unilateral ex-ante disclosure: Would you welcome a larger role for unilateral ex-ante disclosure of licensing terms in order to facilitate the licensing of SEPs? What form could it take? How should SSO mechanisms be shaped to facilitate this instrument? Should they be mandatory or voluntary? Should the disclosure only concern the most restrictive terms?

We see voluntary unilateral ex-ante disclosures as a positive phenomenon. We believe SSOs should have the freedom to set their own rules relating to voluntary ex-ante disclosures in their patent policies. We believe market driven approaches to the topic of ex-ante disclosures will produce the most efficient and beneficial results.

Q 6.2.3 Ex-ante setting of parameters: Alternatively, would it be efficient to set FRAND parameters - within the limits of competition law - at the beginning of discussions of a technical committee within or outside an SSO in order to facilitate the future FRAND licensing? Such parameters could be: the royalty base (at end product or component level, if component what component (s)), royalty type (lump sum, per unit price, percent value of a product/component). What other parameters could be discussed upfront to make licensing more practical, without violation of competition rules?

SSOs should have the freedom to set their own rules around voluntary ex-ante disclosures in their patent policies. Market driven approaches to the topic of ex-ante disclosures will produce the most efficient and beneficial results.

Q 6.3.1 Advantages of portfolio licensing: What are the advantages of portfolio licences respectively for the patent holder and for the implementer? How important is the so-called "freedom to operate" or "patent peace" between companies? Please cover in your answer also issues of scope (e.g. geographic scope, product scope, inclusion of future patents).

Portfolio licensing of SEPs is normal in the telecoms sector. Both for licensor and licensee it is usually the most efficient and effective way of obtaining a license to all relevant SEPs for a given standard.

Because, by their definition, all SEPs of a given standard are necessarily infringed by the implementation of the respective standard, any implementer of that standard requires a license to all such SEPs. All SEPs of a given standard constitute a whole package in the sense that a license is

generally needed to the whole package, not just selective SEPs, although there may be optional parts of the standard.

Therefore, any rational implementer wishing to obtain a license for the implementation of a standard will need a license to the entire portfolio of relevant SEPs. Otherwise, the implementer cannot implement the standard without infringing those SEPs not covered by the license.

In statements made in the context of SSO IP Policy discussions the European Commission has recognised the efficiencies of portfolio licensing compliant with FRAND. Clear statements from court and regulators encouraging portfolio licensing will bring even more legal certainty and, as a result, fewer disputes. Portfolio licensing is significantly more efficient for all parties than licensing patent by patent. It is not reasonable only to license a single patent which is for example being litigated at that point in time, knowing that this will not solve the dispute as there remain other essential patents that would not be covered by such a license.

Please also refer to our answer to Qn 6.1.1 concerning principles of FRAND determination, and inefficiencies of a patent by patent approach.

Q 6.3.2 Determination of portfolio license value: How can the value of licences over large portfolios be determined if there is disagreement over the validity, essentiality/infringement or enforceability of (some) patents included in the portfolio? Is sampling (i.e. the review of a representative set of patents) a good approach for the evaluation of a patent portfolio? If so, how should sampling be done?

Market driven FRAND licensing provides the most efficient results. Freedom for the parties to choose the methods and principles for determining FRAND terms encourages and promotes negotiated resolutions.

In the event that parties cannot reach a resolution bilaterally and they are willing to submit the dispute to be settled by arbitrators for example, the adjudication forum should be able to render decisions which resolve the dispute on a portfolio wide basis. Experienced arbitrators or judges are perfectly capable of hearing such disputes and more examples are emerging where parties are relying on third party adjudication.

When it comes to determining the FRAND rate/range by an arbitration panel or in a court of law, and if the SEP holder has provided to the potential licensee an offer which it believes is FRAND, the adjudicator or court will normally look at the terms offered by the SEP holder and determine if they are compliant with the relevant FRAND undertaking. Only if the offered terms are not FRAND-compliant, will the adjudicator normally proceed to the next step and establish new, FRAND-compliant terms.

Please also refer to our answer to Qn 6.1.1 concerning principles and efficiencies of FRAND determination for portfolios. That answer also addresses sampling.

Q 6.3.3 Cross-licenses: What are the advantages of cross-licensing? What problems arise? How do the concepts "fair" and "reasonable" apply to cross-licensing?

Cross-licenses usually occur where each of the negotiating parties have SEPs and each have a business that requires a license from the other negotiating party's SEPs. Then, instead of two separate license agreements the parties conclude one "cross-license" agreement.

As the value of the SEPs one party holds may be different from the value the other party holds, and the exposure of the products and business of one party may be different from the exposure of the other, the value of the licenses the parties grant are not necessarily equal. In such cases instead of making two license fee payments, the parties often agree on a “balancing payment” that the grantor of the less valuable license pays to the grantor of the more valuable license. Such balancing payment represents the difference of the values of the two licenses.

Cross-licenses are very common and an efficient solution. In our view, they do not represent any issues to or deviations from FRAND. Each of the SEP holders must adhere to their respective FRAND undertakings.

However, while cross-licenses are common in the SEP context if both parties have SEPs that the other party needs, more broadly speaking cross-licenses cannot and should not be mandated. This is because no company can be forced to take a license to patents that it does not use or need. Also no company should be forced to grant a license to its proprietary technologies for which the company has not given any licensing commitment and which it may prefer to reserve for its own use.

Q 6.4.1 Pertinence and impacts: In your experience how common is royalty stacking and in which areas of past, ongoing, or planned standardization does it exist or will it likely occur? What problems arise in such situations? How do individual companies deal with such situations and what are the (financial) costs?

There is no commonly agreed definition of “royalty-stacking”. However, the perceived concern in the consultation materials is whether the aggregate license fees that implementers have to pay to the various patent owners “stack up” so high that they make the adoption and exploitation of the standardized technology unfeasible.

The answer in the ICT sector seems very clear. The ICT sector is one of the most successful, dynamic, competitive industrial sectors in history. If there were excessive license fees “stacking up” and hindering or blocking the adoption of standards in the ICT sector, we would not see the multitude of fully interoperable quality mobile products at continuously declining consumer prices as we do today. Furthermore, if excessive license fees were charged by the SEP owning innovators, there would be no newcomers to the market, as there now are. Indeed, not only have newcomers entered the market but they have often even been more successful than the incumbents who originally invested in the development of the standardized technology.

The best approach for dealing with the value prospect when there are several SEP holders is through bilateral negotiations between the individual SEP holders and individual implementers. On the one hand, each SEP holder knows its own SEPs the best and also knows its existing license agreements best. It is therefore in the best position to adhere to its FRAND undertakings. Particularly adhering to the undertaking of non-discrimination requires that the SEP holder is in control of the terms on which its SEPs are licensed. On the other hand, each licensee knows best its business and can best evaluate the license fees it can afford to pay to various SEP holders, and still successfully run its business. Individual abuses, should they occur, may merit intervention by competition authorities.

Q 6.4.2 Co-ordination mechanisms: What forms of voluntary co-ordination mechanisms are, or could be, efficient for situations of royalty stacking? Should they be limited to a single standard, or cover families of standards, or cover all standards related to a type of product? How can the abuse of such mechanisms, for example by a group of dominant license-takers, be avoided?

Market driven bilateral FRAND licensing provides the most efficient results overall. Furthermore, companies that feel aggrieved have the possibility to complain to competition enforcers. No further mechanisms appear necessary.

Q 6.4.3 Method for allocating value: In order to improve methods to deal with royalty stacking and for adjudicators to find proportionate FRAND value, what are best ways to allocate value between patent holders of a given standard? How can the proliferation of patent applications in case of simple patent counting be avoided?

Market driven bilateral FRAND licensing provides the most efficient results overall. The licensor knows the overall market and should frame his offer in the broader context recognizing there are other SEP holders.

Q 6.5.1 Current business practices: On what level of the value chain (e.g. component, bundle of components, final product) does SEP licensing currently take place in the fields of standardization in which you are active/interested? Is this business practice applied by all patent holders/implementers or are there different business practices?

In terms of cost efficiency and transaction cost optimization, the most rational way of licensing is to license a product value chain at a single point. That single point is logically the final end product level.

The fundamental problem with component level licensing in our industry is that the value of the innovation is usually only fully reflected when a handset is used on the networked system, i.e. in the end produce. By contrast, the value of the innovation is not at all reflected in the pricing of the relevant component, e.g. silicon chip in the handset, which is based only on the raw material and manufacturing costs, and does not take account of the embedded intellectual property. A 'chip level' licensing approach is in essence designed to undermine SEP value for the unjust benefit of implementers who have not invested in the R&D behind the relevant standardized technology.

When end product manufacturers are licensed, it is traditional industry practice that the component manufacturers and other "upstream" parts of the value chain generally have access automatically to the SEP patented technology because they are covered by "have made" rights in the end product manufacturers' licenses.

In most cases a FRAND obligation is conditional on 'reciprocity', meaning the licensor is entitled to be placed in a reciprocal position as the licensee in terms of the licensing eco-system. If a license was granted to a component manufacturer who would then distribute components to various end product manufacturers, those end product manufacturers would effectively enjoy the benefits of a license to those SEP's that read on the component by virtue of the doctrine of 'patent exhaustion'. However the end product companies would have no obligation to grant reciprocal licenses back to the licensor or anyone else. The licensor would therefore be at a disadvantageous position in the licensing eco-system by effectively losing reciprocity.

Q 6.5.2 Royalty base: How should the royalty base be selected to allow licensing for different types of products (products that rely entirely on a given standard or set of standards, or rely mostly on a set of standards or on multiple technologies)? For a given implementation of a standards in a product, to what extent would it be desirable or feasible that the royalty type be streamlined, e.g. in a percentage of the product value, royalty per unit sold, or lump sum?

Market driven FRAND licensing provides the most efficient results. Whether the selection for an appropriate royalty base is made by individual SEP holders and implementers in license negotiations, which is the case in the vast majority of times, or exceptionally by a court or arbitrator, freedom for those making the selection is vital for efficient results. Fundamentally, however, the value of the innovation has to be reflected in the net royalty, whatever royalty base is used.

Q 6.5.3 Need for clarity: Is this issue, in your opinion, currently addressed in the patent policies of the standard setting organizations in your area of activity/interest? Is there a need for more explicit rules or should this be left open?

Current industry practice is to license value chains at the end product level. Therefore, it seems that the industry has adopted the most rational way of licensing under current SSO patent policies. Each SSO is responsible for their own respective patent policies and they are in the best possible situation to assess whether changes are needed to their respective policies.

Q 6.5.4 Impacts of changes: What are the advantages of giving or denying the patent holder the right to licence only on one level in the value chain and thus of allowing or prohibiting that he refuses licences to implementers on other levels? Please distinguish between impacts on patent holders, on component makers, on end product makers and on the standardization system itself.

Please see our answers to the previous Question in this section.

Q 6.6.1 Definition in practice: In your opinion, what is the best definition of the non-discrimination principle? What aspects of non-discrimination do you find important? Is there sufficient clarity on what non-discrimination means and how it is to be applied in practice? Does the non-discrimination principle relate to the initial offer of the patent holder or the actual outcome of negotiations? Does it relate to an offer isolated to a single standard or to multiple standards? Do you consider that the non-discrimination principle creates obligations on the (potential) licensee?

Q 6.6.2 Pertinence: In your experience, is the non-discrimination commitment sometimes/often broken? In what ways is it broken? Please provide examples. Is there sufficient transparency about licensing terms to allow participants to assess whether they are discriminated against?

Q 6.6.3 Justification for discriminations: Are there any reasons why individual implementers could be excluded from the obligation to license to (reciprocity)? What would justify different terms and conditions for FRAND licenses?

Q 6.6.4 Cash-only/cash-equivalent: One idea discussed in the standardization community in order to make licensing terms comparable in cases, where non-cash elements such as cross-licenses are used with some implementers, is to foresee that a cash-only offer is made. What is your opinion on this? Should this idea apply only in some instances and, if so, in which? Should this be a genuine self-binding offer or would a cash equivalent estimation of non-cash components be preferable?

Q 6.6.5 Other mechanisms/differences in national jurisdictions: What other mechanisms for ensuring non-discrimination are you aware of? What are their respective costs and benefits? Where and how should they be implemented (at standard setting organisations or in regulations)? Are there differences across national jurisdictions in the EU/EFTA or worldwide that negatively impact on these solutions?

Q 7.1.1 Pertinence of the issue: In your experience how often do disputes over SEPs arise, notably in comparison to patents that are not standard essential but comparable? Are there typical circumstances that make disputes particularly likely to arise? What role do business models or product life-time cycles have in this regard?

In a business like Nokia's, a great deal of the technology has been standardised and there are disputes over SEPs. However, these are not the only disputes as most portfolios are mixed. It is usually more straightforward to prove infringement for SEPs because infringement is easier to prove for a standard-compliant product. On the other hand, it is easier to litigate non-SEPs because issues about FRAND do not arise. Courts have taken difficult stances on how to comply with FRAND and are reluctant to grant injunctions on SEPs. Also, fewer SEPs are now litigated and there has been an increase in non-SEP litigation. In this regard, please also refer to our answer to Key Issue 7 in the earlier section of this response.

Unlike non-SEPs, disputes in relation to SEPs are more suitable for portfolio arbitration. In practice, it is impossible to assert a SEP portfolio patent by patent in court, it is too slow and expensive. Unwilling licensees are too aware of these limitations and can hold out for many years without taking a licence.

Q 7.1.2 Main areas of disputes: What are the main areas of disputes over SEPs (infringement/essentiality, validity, value, etc.)? How are these areas related in the practice of negotiations and litigation?

The main areas of dispute are not infringement, essentiality or validity. The main area of dispute is how far an implementer can go taking a patent by patent approach in order to avoid (a) a portfolio value determination and (b) conclusion of a FRAND portfolio license before it can be considered an unwilling licensee and so become susceptible to an injunction.

Q 7.1.3 Cost of disputes: What are the typical costs of settling SEP disputes? What factors drive these costs in practice and to what extent? How do firms try to minimize costs?

If a potential licensee is a genuine willing licensee prepared to engage in serious negotiations, there is no need for litigation as both sides will be acting reasonably. Both parties are then likely to come to a solution without major costs and will settle quickly. The costs arise only if an unwilling party denies infringement or litigates everything or if an overly zealous SEP owner is not prepared to lower its offer to a FRAND level. Typically costs per patent are in the order of one million euros in Germany or the UK or 2 million euros in the US. Where there is a portfolio of several thousands of patents in dispute, a resolution can take many years and many hundreds of million euros to reach determination on even a small proportion of those patents. Examples include Qualcomm's litigation against Nokia where only eight of Qualcomm's patents were asserted in European proceedings, the litigation lasted 5 years and each side probably spent in excess of [-] million euros in Europe alone.

In ICom's litigation against Nokia, Nokia spent more than [-] million euros defending against 63 of ICom's patents. In contrast, Nokia and Samsung are presently engaged in arbitration where it will be determined what Samsung must pay for renewal of its licence to Nokia's entire SEP portfolio of several thousand patents. The costs incurred will be considerably less and the process is expected to take less than 18 months. To minimise costs, parties need to act reasonably, licensors need to set up reasonable rates which are acceptable to reasonable licensees and set up licensing programs with standard rates. In those conditions, there are less likely to be disputes.

Q 7.1.4 Impact of disputes on standardization: Do you perceive an impact of disputes on the standardization work itself? Do standardization participants foresee future disputes and adapt their behaviour during the standardization process accordingly?

We do perceive an impact of disputes on standardisation work. The lack of an effective way to enforce SEPs will reduce participation in standardisation and drive R&D towards more proprietary solutions. Unless regulators encourage effective mechanisms for patent owners to recoup their investment through efficient and effective licensing then the advantages and benefits that flow from open standardisation are unlikely to continue in future.

Q 7.2.1 Usefulness of alternative dispute resolution: In your experience, does ADR currently play an important role in resolving SEP disputes? Is it regularly considered/discussed when SEP disputes arise? Do you see any trend in its prevalence?

If parties want a FRAND adjudication, arbitration is an effective, often the best, mechanism provided both parties can agree on an arbitrator they both view as independent. If a German court is asked to resolve an SEP dispute, it will consider whether a single patent is infringed or not and then evaluate whether an open 'Orange Book' offer has been accepted. The courts are not willing to solve the problem and set a rate. If parties want a reasonable rate set, then ADR is the only effective way to do so. Nokia is engaged in more and more ADR. For example, as mentioned in our answer to Question 7.1.4, Nokia and Samsung are currently engaged in arbitration which will result in a portfolio rate being determined without having to litigate. If regulators encourage ADR then we would foresee an increase in this desirable trend. Such a trend could be encouraged by finding that a party refusing to engage in ADR should be at risk of an injunction.

Q 7.2.2 Target areas: Which situations/external factors render an alternative dispute resolution mechanism particularly useful? In what areas of patent based standardisation would ADR be particularly useful?

Courts may at times be reluctant to deal with setting rates so in that sense litigation is effectively not working. So far there has not been a single European court that has made a decision in which a rate has been set. There are relatively few examples around the world where Courts have so far set a FRAND rate, for example, including *Microsoft v Motorola* in the US which took 20 experts and half a year. The attitude of regulators is very important here. Unwilling licensees do not wish to engage in ADR because, as with the current ineffective court procedures, they can delay paying a FRAND rate on a portfolio by adopting the tactic of defending patent by patent. The latter is a long drawn out process and will not lead to a full compensation covering all patents the implementer is infringing. ADR will only be successful if regulators impose consequences or permit injunctions where a licensee refuses to engage in ADR or portfolio arbitration.

Q 7.2.3 Suitable forms of ADR: What form of ADR (mediation, arbitration, other) do you consider suitable for what type of conflict?

Arbitration is usually the most useful form of ADR for SEPs. Arbitration provides a legally binding decision which is enforceable worldwide while still allowing the parties to settle at any time during the process. A Licensor would not usually be as interested in mediation. Mediation is less likely to solve the issue, particularly if litigation has already started and so the parties are unlikely to be close enough to settle.

Q 7.2.4 Benefits of ADR: What are the benefits of alternative dispute mechanisms applied to SEP disputes respectively for patent holders and/or patent users? What are the most important conditions to ensure that these benefits materialize?

The benefits of arbitration are that a decision setting a licence rate will be on a global basis and enforceable worldwide and the award will be confidential. The decision is a final decision, so no need for endless appeals and the licensor can then recoup its fees before any patents expire and the licensee's fast moving product lifecycles change too much.

Q 7.2.5 Difficulties and costs: What are the main difficulties and costs for parties in agreeing to and setting up a given dispute resolution mechanism? What do the costs depend on? Do rules on ADR differ between jurisdictions and does this create problems?

The main difficulty is that both parties have to agree to arbitrate in the first place. This can be a problem. Some licensees may believe that by agreeing to arbitrate, they are implicitly agreeing that they owe money to a licensor when they may not be willing to take a licence or pay anything.

The parties also need to agree on an arbitrator or arbitrators they both regard as independent.

The other difficulties that arise are agreeing to the set of rules, the venue and the choice of tribunal. There is too much scope for an unwilling licensee to evade arbitration by initiating countless disputes on rules and venue or selecting tribunal members with little availability.

Costs are not usually a major issue. These tend to be set by the arbitration bodies.

Q 7.3.1 Your experience: Are you participating in SSOs that have ADR mechanisms? To your knowledge are they being used? If so, what are the experiences? If they are not used, why not?

We have not used the ADR mechanisms of any particular SSOs but we are engaged in ADR, in particular, as mentioned above, we are involved in an arbitration with Samsung to resolve the royalties due under ETSI, 3GPP and IEEE SEPs.

Q 7.3.2 Role of SSOs: To what extent and how should SSOs be involved in the creation and provision of alternative dispute resolution mechanism? Should procedural aspects be further defined in SSOs in order to facilitate the use of ADR?

SSOs should not themselves be involved in the creation of ADR mechanisms. SSOs should focus on their core objectives of developing technical standards. However, it would be helpful if SSOs specified, even encouraged, arbitration mechanisms which would be acceptable as this would help prevent unwilling licensees from delaying or avoiding portfolio determination by disagreeing on arbitration options or choice of tribunal. SSO rules should not mandate arbitration but should provide for injunctions to be available where a party refuses arbitration by independent arbitrator(s).

Q 7.3.3 Incentives to use ADR: What incentives are necessary for parties to use ADR? Please explain those incentives depending on the type of ADR mechanism and/or type of dispute concerned.

The availability of injunctions against a potential licensee that refuses arbitration (i.e. an unwilling licensee) and immunity from injunctive relief for a licensor that accepts arbitration is a significant incentive to participate in ADR. The arbitration offer must be reasonable with a reasonable unbiased forum on a reasonable timescale.

The ADR mechanism must offer resolution on the most important issue which is the price. Then a licensor can obtain a licence fee without requiring an injunction. The discussion moves away from access or lack of access to required technology to just price.

The arbitration proceedings must be confidential so that parties are able to disclose comparable licensing agreements without breaching confidentiality owed to third parties. The award must also be confidential otherwise there is a disincentive to participate in arbitration.

ADR must be quick and provide a cost effective result for both sides to be willing parties.

Q 7.3.4 Voluntary/mandatory: What are the benefits and risks of making ADR mandatory for the resolution of SEP disputes? What consequences would this have for participation in standardisation, for licensing negotiations and for the implementation of a standard? If ADR would be made mandatory: Should it be linked to membership in SSOs, or to the fact of contributing a patented technology to a standardisation process, or other? Should there be an opt-in/opt-out possibility at the declaration stage? Should ADR replace litigation completely or should it be a mandatory step (e.g. mediation) before litigation?

Whilst we are not advocating mandatory ADR for SEP dispute resolution, the benefit of making ADR mandatory would be that there is no need to convince the other party to start arbitration. ADR becomes a straightforward way to come to a reasonable solution.

However, there is a risk that mandatory ADR would only work for participants in SSOs and it becomes a disincentive to joining an SSO. It becomes effectively an agreement for compulsory licensing amongst the SSO members which is questionable under EU law and would run the risk that the SSO could be challenged under Art 101 TFEU. If a party is not willing to arbitrate using independent arbitrators, the other party needs access to state courts and the option of an injunction to be available.

The consequences would be that standardisation becomes more powerful but fewer people are likely to participate. Negotiations are likely to be shorter, more efficient and usually conducted during pendency of arbitration proceedings. Implementation of standards would be harder as fewer people would make technology available if automatically put into a compulsory licensing regime.

ADR should be linked to implementation of standards to the extent possible. This is because implementers will continue to implement the standards even if that may compel them to accept an arbitration regime. If compulsory arbitration is linked to either participation or membership in SSOs or the contribution of technology to the standard, this would act as a disincentive to membership and/or contribution, both of which should be encouraged.

Parties should be allowed to opt out, but if they opt out of a compulsory regime and do not accept a reasonable offer of independent arbitration, then the licensor should have the option to go to court and the licensee should be at risk of injunctions.

Q 7.4.1 Specificities of ADR for SEP disputes: Which particular features should ADR mechanisms have in order to be (more) suitable for SEP disputes? What would constitute a ADR mechanism "tailor-made for SEP disputes"?

Key features that ADR should have are:

- linked to a reputable arbitration institution e.g. the ICC;
- limited to a workable number of patents, the panel cannot look at tens of thousands of patents;
- reasonable timescale – it must not take longer than 18 months;
- 3 independent arbitrators;
- disclosure of comparable licences by each side;
- availability of expert economic evidence to evaluate the portfolios;
- whilst each side should be free to raise arguments about strength or weakness of a portfolio, the arbitration should not descend into a patent by patent infringement analysis of the entire portfolio, otherwise it ceases to have any benefit over court litigation.

Q 7.4.2 Scope of ADR: Which issues such as rate, validity, essentiality and infringement should be addressed by ADR in SEP disputes? Which territory should be covered? When is the adjudication of a global license suitable and when not? Should ancillary claims also be addressed and if so, how?

ADR should especially concentrate on the rate. Validity, essentiality and infringement of entire portfolio should be considered but not addressed in relation to each and every patent.

Territory should be global. There is no point in considering country by country in an industry which sells globally. Parties need legal certainty on a global scale. A global licence is always suitable whether or not all territories are actually relevant. If certain countries are not relevant, this can be taken into account in the global rate.

Q 7.4.3 Procedure: What procedural issues have you experienced in relation to ADR for SEP disputes? What procedural features are particularly important for resolving SEP disputes? What degree of procedural discretion should be left to the arbitrator? Should there be an appeals procedure and if so, in what form?

Procedural discretion should be set out in rules and depends on the arbitration body, e.g. WIPO and the ICC have good rules with enough flexibility to work for SEPs.

There should not be appeals in ADR for SEPs, the main attraction of ADR is to have one proceeding with limited costs in a limited timescale, and otherwise there is no reason to go for ADR. If there are fundamental errors in a decision, parties can go to state courts to appeal that. For example in Germany, there are a limited list of instances when appeal is possible for example if an arbitrator has a conflict which was not disclosed.

Q 7.4.4 Timeframe: What would be a reasonable timeframe for dispute resolution mechanisms? In which cases is an accelerated procedure suitable? In what procedural and/or substantive ways should this accelerated procedure differ from the regular one?

A reasonable timeframe is 18 months maximum from constitution of the tribunal.

There may be a reason to accelerate if there are concerns with recovering licensing fees, for example if a potential licensee may be about to go bankrupt. In accelerated proceedings, fewer

patents could be considered or the proceedings could be restricted to a pure economical approach to avoid or restrict infringement, essentiality and validity considerations.

Q 7.4.5 Transparency: Should the outcomes of ADR be made public in order to achieve transparency? If only partially, which part? And in what form?

The outcomes of ADR should not become public as confidentiality is an important part of the process. If the award or outcome becomes relevant in later arbitrations, it can always be brought in as evidence or through disclosure within the later procedure. However, both parties can agree what statements can be made public.

Q 7.4.6 Forms of ADR: Are there forms of decision making by the arbitrator that you consider particularly suitable for SEP disputes? If so, in what situations and why? Is the concept of baseball arbitration, where the arbitrator resolves the dispute by choosing either the offer of the patent holder or the offer of the implementer, a practical form to settle SEP disputes?

Baseball arbitration is not at all preferred. Neither party has full visibility of the other side's licensing agreements with third parties. Only the arbitrator(s) and the lawyers on either side have sight of these. Therefore, the parties themselves cannot necessarily make informed and reasonable offers as required in baseball arbitration. Only the tribunal is in a position to make a fully informed decision.

It is our view that the arbitrator should first look at the terms offered by a licensor and determine if they are compliant with the FRAND undertaking. This is because the FRAND commitment is a contractual commitment and therefore the first question to review should be whether the SEP holder has complied with his FRAND obligation. Only if the offered terms are not FRAND-compliant, should the adjudicator proceed to the next step and set new, FRAND-compliant terms.

Q 8.1 Defences for patent holder: What needs to be done to ensure that holders of standard essential patents have effective means of obtaining appropriate remuneration for their patents and to defend themselves against implementers who are unwilling to pay royalties or who delay payment of such royalties? What can standard setting organizations do in this regard?

As explained in our answers to previous questions the behaviour of some implementers, notably recent market entrants, has changed. They are more reluctant to take licences creating a substantially more challenging environment for licensors. A proper balance needs to be restored and maintained between licensors and licensees to ensure that FRAND licences can be negotiated and concluded in a timely manner.

Q 8.2 Protection against abuses: How can it be ensured (at the same time) that injunctions based on standard essential patents are not abused to either exclude companies from implementing a standard or to extract unfair, unreasonable or discriminatory royalties from them?

Please refer to our answer to Key issue 8 in the main paper.

Q 8.3 Prevalence of injunctions: According to your experience, in which fields of standardization and in which situations are/were injunctions based on standard essential patents threatened and/or actually sought? What are/were the consequences? Please be as specific as possible.

Injunctions are in practice extremely rare in all fields of standardization. Please refer to our answer to Key issue 8 in the main paper for a more detailed explanation.

Q 8.4 Consequences of banning injunctions: Are you aware of national jurisdictions that have banned injunctions based on standard essential patents or that have restricted injunctions even against unwilling implementers (court cases or legislative changes)? Did this impact on the licensing negotiations, on the royalty rates and/or on the risk of getting no remuneration at all? How did patent holders reacted in these jurisdictions?

As a result of extensive lobbying by implementers, statements by regulators, administrative determinations and some court decisions the availability of injunctions for SEPs has been called into question, particularly in Europe and the United States. This has increased uncertainty about when injunctions are available for SEPs. This uncertainty has emboldened implementers in delaying or refusing to take FRAND licenses. A proper balance needs to be restored between licensors and licensees to ensure that FRAND licences can be negotiated and concluded in a timely manner.

Q 8.5 Awareness among stakeholders: In your experience, is there sufficient awareness among standardization participants of the recent EC antitrust decisions cited above? What role can standard setting organizations play in ensuring awareness of these antitrust decisions? On what aspects of the issue as such would you welcome additional guidance, if any?

In our experience, participants are sufficiently aware of recent EC antitrust decisions.
