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**Communication from the Commission to the Council, the European Parliament, the
European Economic and Social Committee and the Committee of the Regions**

on interoperability of digital interactive television services

Extended Impact Assessment

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EXECUTIVE SUMMARY

The extended impact assessment complements the Commission Communication on the interoperability of digital interactive television (I-TV) services pursuant to Article 18(3) of Directive 2002/21/EC (COM(2004) 541 final).

It recalls the issue in question and puts it into context. It explores a number of possible policy options, setting out the positive and negative impacts of each, including the imposition of mandatory standards, the use of a recommendation addressed to Member States, and promotional measures within the existing legal framework.

An approach requiring the imposition of one or more mandatory standards at European level would offer legal certainty to the various players in the I-TV value chain and enable economies of scale at European level. However it would have negative economic impacts with respect to legacy consumer equipment. It might also stifle innovation, as unstandardised new technologies would face a barrier to market entry.

A recommendation that would allow Member States to impose one or more standards at national level would not be compatible with the single market.

A lighter approach best serves the objectives laid down, and better satisfies the proportionality requirements and internal market considerations. The Commission has defined some promotional actions contributing to the uptake of a growing range of interactive services, available on an increasing number of transmission platforms, with increasing level of interoperability proportional to market development:

- the creation of a Member State group on implementation of the Multimedia Home Platform (MHP);
- confirmation that Member States can offer consumer subsidies for interactive television receiver equipment with return channel capability, subject to conformity with state aid rules;
- listing of further standards;
- monitoring of manufacturers' access to proprietary technologies from a regulatory perspective, in addition to possible competition law review.

As noted in the Communication, the Commission will review the situation in the second half of 2005.

1. THE ISSUE – WHAT & WHY?

1.1. Context – digital television

Digital television (DTV) uses advanced picture compression technologies and radio modulation techniques to deliver a variety of different types of TV service, which are either completely new or can be offered much more easily using digital technologies than earlier analogue ones. They include:

More TV services, thanks to compression, thereby providing greater programme choice;

Better quality pictures, thereby increasing the impact and realism of the programming, together with related features like 16:9 wide-screen and high definition television, a high resolution variant foreseen for very big displays using new digital display technologies;

Interactive television, providing additional features for television programmes, ranging from alternative sound tracks and camera views to additional information on the participants. Alternatively, items that have nothing to do with TV programmes can be transmitted alongside the programmes, like video games.

Interactive television requires a stack of software components to the basic digital television receiver, called an applications program interface (API), similar to that in a computer. Interactive applications become temporarily resident in the receiver when requested by the user. Some receivers are equipped with a communications link that can send information back to the broadcaster. This adds an additional level of sophistication, since potentially, interactive television could be used for delivering Information Society services as highlighted by the Seville Council and discussed in the Commission Communication on Barriers to widespread access to new services and applications of the information society through open platforms in digital television and third generation mobile communications¹.

Currently, digital television has achieved 21% household penetration across the pre-May 2004 Member States (EU15), but DTV is in much earlier stage across the new Member States. It is therefore important that there are no unnecessary barriers to the successful offer and take-up of these different types of service.

1.2. What is the issue and why should the Union address it?

In December 2003, around 25 million of the 32 million digital receivers in the EU15 included API functionality. The five different API systems are not interoperable at terminal level – meaning that no API can process data formatted for another API. The majority of the receivers use proprietary APIs.

An API that is standardised by the appropriate European standards organisation (European Committee for Standardisation (CEN), European Committee for Electrotechnical Standardisation (CENELEC), and European Telecommunications Standards Institute (ETSI)) can be considered as an ‘open’ API. Open standards are published and available to everybody, subject to licensing and payment of royalties for use of intellectual property. Such standards

¹ COM (2003) 410, 9.7.2003.

may be included in the list of standards published in the Official Journal (OJ) under the terms of Article 17 of European Parliament (EP) and Council Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services² (the Framework Directive).

The question is whether one or more standards should be mandated – or other measures adopted - in order to improve interoperability for interactive television services in the EU.

The issue is not new, and was intensively discussed during negotiation the Framework Directive. Article 18 of that Directive encourages the use of open standards on the one hand, and on the other hand accepts the reality of proprietary standards and puts in place safeguards to ensure transparency of technical specifications.

The underlying concern is the relationship between general interests and market forces. One side of the debate is characterised mainly by free-to-air broadcasters, with satellite pay television and cable operators ranged on the other side, together with players originating in the IT industry. Both sides can claim support from a major consumer electronics manufacturer.

Free-to-air broadcasters – notably public service broadcasters – are charged with fulfilling important general interest objectives such as media pluralism and cultural diversity, achieved through programming obligations. On the other hand, network operators play a key role in achieving the Lisbon agenda through the investment needed to roll out advanced communications networks. Each side seeks to champion their particular role in these policies when it finds some aspect of the other side's behaviour constraining.

Vertical integration can for instance create the potential for proprietary technologies to lock-in consumers to a particular digital platform or leverage market power from established markets to new ones. The use of proprietary technologies needs to be kept under competition law review to prevent any impediment of innovation and enhance consumer welfare. In some instances vertical integration can lead to higher economic efficiency, notably by eliminating double margins. General interests like cultural diversity and media pluralism are central to the European social model, while economic success is essential to ensure that the Union retains competitiveness and the resources necessary to fund the achievement of general interest objectives and digital switchover. In the EU, these dual policy objectives are implemented by separating content regulation (which targets the achievement of general interests) from communications regulation (which aims to promote a competitive market as the means of generating innovation and new investment). However these two policies meet at the API, which is why the debate over this issue is so intense.

The consultation revealed no significant, substantiated threats to the free flow of information, media pluralism and cultural diversity. General interests have a very high political profile in broadcasting regulation. Measures to secure them should be implemented in full respect for the principles of necessity and proportionality. Otherwise there is a risk that they will be subject to regulatory captured by particular groups of market players, leading to unnecessary restrictions. This would damage market incentives as well as possibly reducing support for the achievement of valid general interest objectives.

² OJ L 108, 24.4.2002, p.33.

1.2.1. Economic technological and social dimensions

The economic, technological and social dimensions of this issue are examined in Commission Staff Working Paper on the interoperability of digital interactive television services³ (the Working Paper) in preparation for this review⁴.

The Working Paper noted that approaches to interoperability were conditioned by a paradigm familiar from the roll-out of analogue terrestrial television in the 1960s. A key feature of this model is that all services are available on a single, universal receiver, a ‘one box solution’ - what the working paper called ‘simple interoperability’ - based on a common receiver terminal implementing a single technology. Salient features of this paradigm included a small number of services, with a wide choice of receivers available to consumers through retail outlets, following a horizontal market approach.

The Working Paper suggested that established views of interoperability needed to evolve - notably to take into account access regulation - and in particular that a universal receiver able to receive all the different types of services from all networks would be much harder to attain, for reasons linked to:

- (1) Network diversity - i.e. increasing use of cable, satellite and ADSL – requiring multiple tuners.
- (2) Technology dynamics, i.e. new technologies are entering digital television all the time so different populations using different technologies will co-exist.
- (3) Different business models, which mean that interoperability and user choice take different forms, depending on whether the service is free-to-air or pay television.
- (4) Convergence, which results in video services being increasingly delivered over other networks with different approaches to interoperability.⁵
- (5) In addition, the different starting dates and rates of development for implementation of digital broadcasting systems in Member States means that the economies of scale that a single EU-wide system potentially offers would not in practice be realised.

The Working Paper provided an overview of the market and technical aspects of interactive television and the underlying API technology. This suggested that there was still considerable uncertainty in the market over which of the two generic technical approaches to interactive television – execution engines or presentation engines⁶ – was appropriate. Citing the reports undertaken by the standardisation bodies, it suggested that weak consumer demand for interactive television services was the major problem rather than interoperability; it also reported the view that the market opportunity for MHP was greater in markets where digital television was less developed, rather than in the more developed markets with high populations of receivers containing earlier APIs.⁷

³ SEC (2004) 346, 18.3.2004.

⁴ http://europa.eu.int/information_society/topics/ecom/doc/useful_information/library/commiss_serv_d oc/sec_2004_346_en_documentdetravail_p.pdf

⁵ SEC (2004) 346, section 3.1.

⁶ SEC (2004) 346, section 3.2.1.

⁷ SEC (2004) 346, section 3.2.

Questions posed for the consultation covered:

- The extent to which interoperability of interactive digital TV services has been achieved in the EU;
- The benefits that could be achieved if implementation of the published MHP standards were to be made compulsory
- Whether the Commission should add further API-related standards and public specifications to the list of standards required by Article 17 of the Framework directive as they became available.

1.3. Risks

Both action (to mandate standards) and inaction (maintaining the status quo) carry certain risks. During the several years over which this issue has been debated, no consensus has emerged among market players and policy makers as to which approach carries the greatest risk. There are advantages and disadvantages in both approaches.

The risks of different options are further discussed in section 4 of this document.

1.4. Who is affected? What are the underlying motive forces?

The imposition of API standards for interactive digital TV would affect broadcasters, network operators, equipment manufacturers, software companies and viewers. Within these categories, however, there are sub-categories which may have differing views.

Pay TV operators (satellite and cable) have made substantial investments in network equipment and set-top boxes, based on proprietary technologies. They seek to protect their investment and maintain their commercial freedom, including their freedom to innovate without the need to co-ordinate with other market players through often lengthy standardisation processes.

Free-to-air broadcasters seek to have their interactive content available on different delivery platforms and seek a migration from proprietary standards to open standards.

Providers of first generation proprietary APIs are concerned that any imposition of open standards would force them either to incur costs in changing their systems, or to quit the market.

Some manufacturers of set-top boxes and television receiver equipment seek the economies of scale that a single standard could provide.

Interactive application and content providers face lower cost with a single API standard. Open standards offer more predictability than proprietary standards.

2. WHAT ARE THE MAIN OBJECTIVES?

2.1. Review requirement

The main objectives of the Commission Communication are set out explicitly in Article 18(3) of the Framework Directive. Article 18 of the Framework Directive addresses the concern that lack of interoperability in interactive television could adversely affect the free flow of information, media pluralism and cultural diversity by limiting freedom of choice for users.

Under Article 18(3) of the Directive, the Commission must examine the effects of Article 18. If interoperability and freedom of choice for users have not been adequately achieved in one or more Member States, the Commission may take action in accordance with the procedure laid down in Article 17(3) and (4)⁸. The Framework Directive itself is set in the context of the 'Lisbon agenda' of moving Europe towards a knowledge-based economy, and contributes directly to the specific objective of developing a 'world class communications infrastructure'.

2.1.1. *Single market considerations*

The Framework Directive is a single market instrument, and includes consolidation of the single market as one of the specific objectives for those regulatory authorities tasked with implementing the Directive at national level.⁹ As argued in the Working Paper, there is tension between the desirability of using standards to achieve economies of scale for equipment at the level of the Single Market and the national structure of broadcasting markets. The combined effect of national broadcasting markets developing at different speeds and rapid innovation make it more likely that different systems will be used in different markets.¹⁰

On the other hand it can be argued that standards are of most value in stable markets where technology development is lacking or is very slow. In an active and open market, competition between several systems may benefit consumers and operators by yielding better quality systems at lower cost. In the case of interactive television, this could result in more interactive content being developed and created than in a homogeneous market.

2.1.2. *General policy objectives*

The Commission aim is to ensure that European citizens benefit from a growing range of I-TV services, available on an increasing number of transmission platforms. This will safeguard the free flow of information, media pluralism, and cultural diversity, and at the same time increase the potential for I-TV platforms to support information society services.

The use of proprietary technologies needs to be kept under competition law review to prevent any impediment to innovation and in order to contribute towards enhanced consumer welfare.

⁸ Under Art 17(4), the Commission can make implementation of a specific standard mandatory by publishing it in the OJ. The Commission must undertake a prior public consultation, and imposition of the standard requires support from a qualified majority of Member States in the Communications Committee.

⁹ Notably Article 8(3) of the Framework Directive which requires National Regulatory Authorities to contribute to the development of the internal market inter alia by encouraging the establishment and development of trans-European networks and the interoperability of pan-European services, and end-to-end connectivity. For analysis, see SEC 2004 (346), section 3.3, p.23 et seq.

¹⁰ SEC (2004) 346 pp. 11-12.

3. POLICY OPTIONS AND ANTICIPATED IMPACTS

Three main policy options are considered. In the first option, the Commission could make implementation of one or more open standards mandatory for all APIs for I-TV in Europe. The second option entails a Commission Recommendation under which Member States could make implementation of one or more APIs standards mandatory. The third option maintains the current situation.

Within each broad option different variants are explored. In addition, three associated actions are identified which could complement any of the three main options.

3.1. Option 1: The Commission imposes mandatory implementation of one or more open standards, at European level

3.1.1. Option 1a: The Commission imposes mandatory implementation of one API standard, at European level

Requiring all operators to use a single API from a specific date would ensure technical interoperability at terminal level, and would contribute to all services being received on a single receiver. In practice, the MHP is the only candidate for such a single standard at present. It is already included in the list of standards published in the Official Journal under the terms of Article 17 of the Framework Directive.

However, even if the middleware is mandated, differences in delivery mechanisms (notably differences in transmission standards and conditional access systems) would hamper reception of all services on one box (what the Working Paper called “simple interoperability”) as, for instance, each transmission system needs its own demodulator. Furthermore ensuring technical interoperability of equipment and services does not in itself fully guarantee interoperability “at the level of the consumer”, as understood in Recital 31 of the Framework Directive since content providers still have to negotiate access to the networks and associated services.

Nevertheless, for those acquiring an interactive TV receiver in future, mandating a single API would facilitate interoperability as there would only be one API. Furthermore a single standard would reduce any consumer uncertainty that may exist regarding which equipment to buy. This measure could make more interactive content available at lower cost by reducing re-authoring requirements. On the other hand, imposing a single standard could reduce consumer choice (for example by preventing the deployment of a new, superior API technology that might become available). It would also inconvenience those consumers that already had interactive television equipment using a proprietary API which would need to be replaced.¹¹

For actors in the I-TV value chain, i.e. hardware manufacturers, content providers, application developers, imposing a single standard would provide legal certainty, which would help investment in equipment and services. A positive impact on quantity of services and price of equipment could ultimately be expected. The benefits of technology competition could be lost however.

¹¹ As noted on p.19 and in footnote 37 of SEC (2004) 346, it would theoretically be possible to devise a software plug-in that would make MHP applications run on receivers containing earlier APIs. In practice, the limited hardware resources of early receivers will reduce the possibility to use this technique. MHP uses more memory and requires more processing power than such products can offer.

The MHP standard encompasses many features that are not considered essential by the majority of consumers today. Given that MHP bears, at least temporarily, a price premium¹² consumer engagement is more uncertain at this stage. In fact there has been little interest in 2-way services encompassing real interactivity, even using cheaper APIs. Consumer engagement also depends on the availability of services. The more attractive the services available through digital reception are, as compared with analogue, the more likely consumers are to purchase digital receiving equipment.

In economic terms, the potential positive impacts from imposition of the MHP standard can be summarised as follows: it would provide hardware manufacturers, application developers broadcasters and in some cases platform operators with legal certainty concerning technological decisions. This could lead to further investment in equipment production and development of services and help achieve economies of scale for MHP. Availability of equipment and services and decreasing prices due to economies of scale might stimulate demand. Increased demand would allow MHP equipment and interactive services to attain critical mass. This could potentially help ensure the sustainability of interactive TV services, according to one view. This assumes that consumers' interest in interactive services rises well above its current level. In the absence of any consumer subsidies, imposing the MHP standard would increase the cost for consumers of interactive digital receiving equipment with interactive capabilities, which would act as a counter incentive, or could have a perverse incentive, by encouraging market players to offer digital TV receiving equipment without interactivity. The cost of licensing the underlying intellectual property rights in order to manufacture MHP receivers is still unknown, as the patent pool is still being formed. This introduces a further element of uncertainty into calculating the costs of introducing MHP.

A major issue concerns the installed base of more than 25 million set top boxes (STBs) with interactive functionality already in operation and not compatible with MHP. These STBs would have to be replaced or else left to function as simple “zapper boxes” deprived of any interactivity functionality. Replacing part or all of this STB population implies an important economic cost¹³ and considerable negative economic impact for the platform operators who had adopted proprietary systems, and possibly also for their clients.

Alternatively, if the earlier proprietary technologies are allowed to continue to operate with interactive capacity, while MHP is mandated for new systems, the benefits of interoperability would be clearly attenuated. Under such a hypothesis, the take up of MHP and the positive economic impacts associated with it would be reduced and the current, fragmented situation would be maintained.

Furthermore, imposing one standard would exclude the possibility of multiple entry levels for the consumer notably via presentation engines.¹⁴ Imposing one standard could be more easily justifiable if it concerned a basic level of equipment than a more complex, top-of-the-range standard like MHP.

¹² According to one statement at the public hearing, this currently amounts to approximately € 150.

¹³ The market price of a MHP set top box can be cautiously estimated at a current price of € 200. Assuming that MHP is imposed and a replacement of the whole population of interactive STBs (25 million) is required, in order to maintain the capacity of interactive applications at the current levels, this implies an economic cost of € 5 billion. Even if prices do fall due to economies of scale, the economic cost will remain at the level of € 3 billion to € 4 billion.

¹⁴ Presentation engines are equivalent to web browsers and require few resources in the set-top box.

In social terms, imposing a single standard would in time lead to the terminal interoperability, facilitating but not guaranteeing the reception of all services. This form of interoperability is expected to enable, from a technical point of view, consumers to access more content on a single receiver. A positive impact is expected in terms of reducing political concerns regarding media pluralism and cultural diversity. Broadcasters would not face additional difficulties negotiating over use of proprietary APIs. Furthermore imposing a single standard would provide simplicity, easing any consumer confusion about what equipment to buy. Finally, MHP is a strong platform for delivery of Information Society services, supports the Internet in its latest profile and could fulfil the role of delivering Information Society services to people not having a PC, reducing thus the digital divide, assuming all MHP receivers are equipped with a return channel capability.

Against this must be set the reduction in consumer choice, and the possible increase in the cost of consumer receiving equipment which could discourage to the take-up of digital TV. Existing APIs are also able to support Information Society services, where receivers are equipped with a return channel.

In environmental terms, mandatory replacement of some or all of the 25 million STBs with interactive capability already in the market would present a disposal problem and have a negative environmental impact.

In conclusion, this option presents certain positive social and economic impacts but it could block technological progress.

3.1.2. Option 1b: The Commission requires implementation of one of a range of APIs that had been standardised by a European standards body

Under this variant, individual players could choose which open API standard they implemented from a list published in the Official Journal, which would include other standards apart from MHP.

This option offers less guarantee to the consumer for having access to all services, and less legal certainty for actors in the I-TV value chain, than imposing a single standard. On the other hand this option leaves the market to decide which particular standard is preferable. The issue of accessing all content can be addressed, subject to commercial agreements between content providers and platforms operators, through content portability and the use of the portable content format (PCF)¹⁵.

In economic terms, the anticipated economies of scale in this option are expected to be lower, as there is a greater range of products. The anticipated positive impacts, in terms of I-TV sustainability, are smaller with this option than in the case of a single standard. This variant does take better account of innovation, since once standardised, a new API could be added to the list in the OJ and deployed. There would be more choice for consumers, since a range of products with differing capabilities could be supplied. In terms of the impact on the installed base of STBs, imposition of an open API has the same effect as imposition of a single standard (see above), unless owners of proprietary APIs decided to standardise their systems as a result of the measure.

¹⁵ As it had been analysed in the Working Paper, PCF will cover 80% of the interactive television application, but not the most complex application, e.g. electronic programme guide. PCF – see SEC (2004) 346, section 3.2.3.

In social terms, obligatory use of open standards does not guarantee that consumers can receive all content. One possibility for operators and broadcasters could be to implement PCF to allow their content to work with multiple APIs. In terms of media pluralism and cultural diversity measured as the capability to receive all content, this option has a less significant impact than imposing a single standard. Not all APIs based on open standards are capable of the delivery of Information Society services. Contribution towards reduction of digital divide is lesser than with imposition of MHP.

In environmental terms, the effect of imposition of an open API would be only slightly less than imposition of a single standard, i.e. it would potentially require the premature replacement or reduced functionality of STBs, with the associated negative environmental impacts.¹⁶

This option is lighter than imposing a single standard at EU level. It does not address the issue of interoperability at terminal level as completely as imposition of a single standard. Despite its lighter character, it is still associated with risks and uncertainty regarding demand for interactive television services. This option also fails to take advantage of the current situation where the installed base of receivers can serve as a critical mass for the sustainability of interactive services, if interoperability can be improved, notably through use of Portable Content Formats.¹⁷ Article 17 of the Framework does not include the possibility to mandate use of open standards in general. The Commission can only require use of one or more open standards that are on the list published in the Official Journal.

3.2. Option 2: Commission Recommendation proposing that Member States could make implementation of one or more APIs standards mandatory–

Option 2 recognises that the deployment of digital television is very different in different Member states, and therefore gives Member States the responsibility for making one or more standards mandatory.

As with Option 1, different variants can be envisaged.

3.2.1. Option 2a: Member States are recommended to require all market players to use one API chosen from the list of standards published in the OJ

A recommendation of this type could lead to some Member States imposing MHP, others imposing other open standards, and possibly others doing nothing at all. Within a Member State that imposed use of a specific standard, the impact of this option on market players and consumers in that Member State would be comparable to the impact of Option 1a above.

3.2.2. Option 2b: Member States are recommended to require market players to use “any API that has been standardised by a European standards body”

This option implies that individual players could choose which open API standard they implemented from the list published in the Official Journal.

¹⁶ Under this option, and assuming the MHEG5 standard is listed in the OJ, STBs using MHEG5 would be retained.

¹⁷ These enable content to be authored once and played out to receivers containing different APIs.

At the level of the Member State, the impact of this option on market players and consumers in that Member State is comparable to the impact of Option 1b above.

Overall, at a European level, Option 2 would result in fragmentation across the single market. This option is in fact institutionalising structural fragmentation of the single market, in a way that is not compatible with the aims of the EC Treaty.

3.3. Option 3: Member States continue to encourage open standards, including migration from proprietary standards, but do not mandate them

This option encourages the market to find its own solutions for interoperability, and represents the least interventionist approach. It implies continuation of the provisions laid down by the EP and Council in the Framework Directive, without further legislative measures. There would be no regulatory intervention to move the industry to a single common applications programming interface (API), although this outcome may naturally arise in all or part of the market. In the absence of regulation, cable and satellite are likely to continue using legacy APIs until they see commercial reasons for moving to open standards.

This option does not deliver interoperability at terminal level, and one possibility for content providers could be to implement the portable content format to achieve content portability across platforms. Content portability is the minimum interoperability requirement for media pluralism.

In economic terms, this option has least impact on the installed base of more than 25 million STBs with interactive capability. As no replacement is required, there are no such costs for the platform operators having adopted proprietary systems and their clients. This avoids the risk of a possible slowdown of the progression of I-TV in terms of network, equipment sales and services, as there is already an important installed base. The issue of critical mass is less important here. This option provides consumers with a choice of I-TV products, from inexpensive entry level boxes to more expensive high performance products. Finally this option preserves the prospect of innovation through either proprietary systems or open standards, while signalling that open standards are preferred.

On the other hand there are costs associated with multiple authoring, as content providers will continue to face the marginal cost of tailoring their content for different APIs. Furthermore, this option fails to provide hardware manufacturers, application developers and broadcasters with legal certainty concerning technological decisions as these are taken in a market context. The extent to which legal certainty over standards and technologies can be guaranteed in a dynamic market is a moot point. Without public intervention, the current situation of different approaches in different Member States will be maintained.

In social terms, this option provides consumers with less assurance that they are capable of receiving all services on a single receiver. However, this option facilitates the progress of I-TV in face of uncertain demand and provides consumers with a choice of interactive DTV receiver equipment.

In environmental terms, this option seems to best handle the issue of legacy, not requiring the replacement of any of the existing STBs.

3.4. Associated actions linked to creation of a sustainable, affordable MHP receiver market, notably in smaller Member states.

Aiming to create a sustainable, affordable MHP receiver market, notably in smaller Member States, the Commission has identified the following lines of action. These actions could be undertaken alongside any of the policy options listed above.

Action A: Implementations group for MHP

This action seeks to help MHP build critical mass and achieve economies of scale, overcoming the fragmentation problem that all new broadcasting products face. The Commission would set up an MHP implementation group involving Member States. The aim of the group would be to exchange information and report on best practice.

Action B: Temporary subsidies for consumers to acquire MHP receivers with return channel”

This action seeks to overcome the current temporary price differential between MHP products and cheaper products containing legacy APIs, by indicating that Member States can temporarily offer consumer subsidies. This approach has encouraged major free-to-air players in Italy to support MHP. Such subsidies would need to conform to competition law and have a minimal distortion on the market.

Action C: Listing of further API standards in the Official Journal

This action helps ensure that market players have a choice of API standards, between cheaper presentation engines and the already standardised MHP execution engine. Other standards intended to promote interoperability between APIs will also be proposed for listing once the M331 standardisation mandate is complete and ETSI has adopted the outputs. The Communications Committee must deliver an opinion on any revision to the list.

Action D: Inclusion of multiple technical facilities in receivers to speed up one box solutions

This action promotes the emergence of a universal receiver able to receive services from different platforms. There is no problem integrating multiple tuners, all standardised – except cost - but different proprietary APIs and conditional access systems are more problematic because of licensing terms. Under this action the Commission would seek to obtain commitments from the intellectual property rights (IPR) owners that their systems would be available for inclusion in a single receiver alongside a competing system. This builds on the requirement in Annex 1, Part I (c) of the Access Directive.

3.5. Subsidiarity and proportionality

Subsidiarity implies taking action at Community level only where the objective pursued cannot be achieved at Member State level. The Framework Directive, in granting to the Commission the power to make implementation of standards mandatory at the European level, has already signalled that in this area Community level action can be justified.

Proportionality implies taking only those actions that are necessary to achieve the aim pursued. In terms of the options described above, this means that Options 1 and 2 should only

be considered if the objective cannot be achieved under Option 3; and Option 1 should only be considered if the objective cannot be achieved under Option 2.

4. HOW CAN THE RESULTS AND IMPACTS OF THE PROPOSAL BE MONITORED AND EVALUATED?

The Commission will continue monitoring the evolution of digital TV in the EU and the issue of interoperability within DTV. To this effect, the annual report on the electronic communications sector will include relevant data on digital TV. More precisely the Commission intends monitoring the following data:

- Growth of digital television, (in terms of household penetration of receiving equipment),
- Growth of digital **interactive** television receivers, (in terms of household penetration of receiving equipment with interactive capabilities),
- Growth of MHP I-TV receivers, (in terms of household penetration of MHP receiving equipment and as percentage of whole population of I-TV receivers),
- Utilisation of I-TV services (in terms of operators revenue),
- Availability and take-up of government-related services as part of I-TV services.

In addition, the Commission intends to review interoperability in digital interactive TV in 2005. Any proposal for new legislative measures that might arise as a result of this review would in principle also be taken into account when the regulatory framework of electronic communications is reviewed in 2006.

5. STAKEHOLDER CONSULTATION

A study by Oxera¹⁸ undertaken for the Commission services (finalised and presented in March 2003) drew upon consultation with stakeholders, and provided economic analysis of interoperability issues, and the role of horizontal markets, focusing on consumer welfare. The CENELEC study – focusing on interoperability issues – was finalised in April 2003, and involved those active in EU standardisation. The ETSI/CENELEC/EBU Special Task Force 255 has developed a standardisation work plan¹⁹. This is intended to enhance the interoperability of interactive television across all EU markets. The Commission Services launched a public consultation on Interoperability of I-TV on the basis of a Commission Staff Working Document published in March 2003. This was thoroughly discussed at:

- an informal meeting at the Parliament on April 7th involving Members of EP and key market players

¹⁸ Study on interoperability, service diversity and business models in digital broadcasting markets, Oxera, February 2003. Available at: http://europa.eu.int/information_society/topics/ecom/shortcuts/digital_broadcasting/studies/index_en.htm

¹⁹ M331, undertaken by CENELEC and ETSI Special Task Force 255, reporting to the Commission through the Joint Technical Committee (Broadcast) of CENELEC, EBU and ETSI

- an open public workshop on April 20th
- a meeting of COCOM's Communications Broadcast Issues Sub-group (CBISS) on April 23rd.

The results of the consultation are presented in the Commission Communication on Interoperability of I-TV pursuant to Article 18(3) of Directive 2002/21/EC. The consultation confirmed the diverging views of the various players.

Broadcasting Issues Sub-group of the Communications Committee

The Broadcasting Issues Sub-group of the Communications Committee (COCOM) is composed of experts who do not formally represent a Member State position, although in practice many of participants are Ministry or NRA officials who are responsible for policy work in this area.

The discussion of the Commission Staff Working Paper on 23 April 2004 revealed little support for imposing one or more open standards, and some support for a non-binding recommendation. Several experts indicated that policy on I-TV should be subordinated to the need to achieve switchover and turn-off.

6. COMMISSION DRAFT PROPOSAL

The analysis in Section 3 above examined three options, but concluded that the option of a recommendation that would allow Member States to impose one (option 2a) or more standards (option 2b) at national level was not compatible with the single market. In effect therefore, there are two main approaches to be considered:

- An approach, consisting of some form of mandatory implementation of standards at European (option 1a).or national level (option 1b).
- A lighter approach permitting the market to develop, with the promotion of open standards, but no mandatory standards being imposed (option 3).

The first approach, consisting of some form of imposition of mandatory standards at European level would offer legal certainty to the various players in the I-TV value chain and enable economies of scale at European level. However it would have negative economic impacts with respect to legacy consumer equipment. It might also stifle innovation, as unstandardised new technologies would face a barrier to market entry.

According to the analysis undertaken, the second approach where the market is allowed to develop under its own impetus best serves the objectives laid down. This is on the understanding that interoperability should develop as the market expands. As argued above and in the consultation document, interoperability takes many forms, not just use of standardised APIs, This approach better satisfies the proportionality requirements and internal market considerations. If accompanied by the associated actions listed in section 3.4 above, this approach will serve to ensure that European citizens benefit from a growing range of I-TV services, available on an increasing number of transmission platforms. In any event, the use of proprietary technologies will remain subject to competition law review.