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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 reviewing the interoperability of digital interactive television services
pursuant to Communication COM(2004) 541 of 30 July 2004**

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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

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EXECUTIVE SUMMARY

In July 2004, the Commission published a Communication setting out its position on the interoperability of digital interactive television services pursuant to Article 18(3) of Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services ('the Framework directive'). In that Communication, the Commission concluded that there was no clear case for mandating standards for interactive television, and indicated that the issue would be reviewed in 2005. The Communication also proposed the setting up of a working group to identify actions that could improve market take-up of the Multimedia Home Platform (MHP) standard.

This review builds on that earlier assessment, and takes account of the market developments since July 2004. Over the past 18 months the Commission has held an intensive dialogue on digital TV interoperability with interested parties in both the public and private sector in the 'MHP Implementation Group'. This Group has been presented with reports of the situation in ten Member States, and has served as a forum for the exchange of ideas and best practice.

Developments in the market, particularly in Italy, have shown that interoperability can be achieved when stakeholders act together with a common aim to implement a technical standard like MHP, but that this in itself is not sufficient to ensure the emergence and growth of interactive digital television services; further business and technical developments are needed.

The Commission's priorities are now to work with Member States to ensure the successful switchover to digital TV, which is a pre-requisite for having interactive digital services, and to support open standards and the ongoing cooperation on interoperability and exchange of best practice between Member States and between stakeholders.

The Commission seeks to ensure that European citizens enjoy the benefits of digital television, including a growing range of interactive digital TV services, available on an increasing number of transmission platforms. It considers that the market is best served at the present time by continuing to rely on industry-led voluntary standardisation initiatives.

1. BACKGROUND

In May 2005, the Commission published a Communication on accelerating the transition from analogue to digital broadcasting[1] proposing a target date of 2012 for Member States to make the transition to digital television and switch off analogue TV transmission. One of the advantages of digital TV is the ability to have fully interactive applications, where the viewer is able to interact with the broadcaster via a 'return channel'. Interactive applications require a software stack in the receiver called an 'applications program interface' or API.

On 30 July 2004 the Commission published a Communication on interoperability of digital interactive television services[2]. The Communication set out the Commission's position on interoperability of digital interactive television services pursuant to Article 18(3) of the Framework directive[3]. According to this article, the Commission may take steps to make certain standards mandatory, if adequate interoperability of interactive digital television has not been achieved. The Communication stated that there was no clear case to take action to mandate any API standard at that time, but the issue should be reviewed in 2005. In the meantime, a range of promotional and associated actions were proposed to promote the deployment of interactive digital services using the MHP standard, which at the time was the only open standard for APIs adopted by EU standards bodies. These actions included the creation of a working group on implementation of MHP, confirmation that Member States can offer consumer subsidies for <u>interactive</u> television receiver equipment, subject to conformity with state aid rules, and monitoring of access to proprietary technologies.

The underlying analysis was contained in the accompanying Extended Impact Assessment issued as SEC(2004) 1028. This analysis indicated that, while the imposition of one or more mandatory standards at European level could offer legal certainty to the various players in the interactive TV value chain and enable economies of scale at European level, it would have negative economic impacts with respect to legacy consumer equipment, and could stifle innovation and create a barrier to market entry.

The present Communication assesses the developments in interactive digital television since July 2004.

2. DEVELOPMENTS IN THE INTERVENING PERIOD (JULY 2004 – DECEMBER 2005)

2.1. Conclusions of the Telecommunications Council

On 9 December 2004 the Transport, Telecommunications and Energy Council adopted Council Conclusions, welcoming the Commission's Communication and its proposed promotional measures, as well as the intention of the Commission to review the situation regarding the interoperability of digital interactive television services in the second half of 2005. In addition, the Council invited the Commission to identify actions with regard to standards other than MHP, published in the Official Journal of the European Union in

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[1]   COM(2005) 204
[2]   COM(2004) 541
[3]   Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services

accordance with Article 17(1) of the Framework Directive, in order to encourage the development of interactive digital television.

2.2. The MHP Implementation Group

The MHP Implementation Group set up as a result of the 2004 Communication held its first meeting in Brussels in November 2004. The aims of the group were to exchange information, report on best practice and facilitate contacts between actors in the interactive television field. This action sought to help MHP build critical mass and achieve economies of scale, overcoming the fragmentation problem that new broadcasting products face. In response to the Council conclusions, the work of the group encompassed issues related to interactive digital television in general, including the use of standards other than MHP.

The group held five meetings between November 2004 and September 2005. Players participating in the Group included ministries and regulatory authorities, broadcasters, network operators, manufacturers, industry associations and research projects. Ten country cases were presented (Italy, Finland, Sweden, Norway, Denmark, Hungary, the Netherlands, Spain, Germany and Belgium) along with other industry presentations, demonstrating the importance of the debate for European broadcasting.

The work of the MHP Implementation group has served to demonstrate the value of having a forum for exchange of views between interested parties in a complex area like interoperability of interactive digital TV services.

2.3. Developments in digital television

Moving from analogue to digital television is a prerequisite for the introduction of interactive digital television services. Digital terrestrial TV in Europe suffered from a number of false starts, but sustainable business models are now emerging and switchover is gaining pace.

Table 1 shows the situation of digital television in the EU at the end of June 2005.

	Digital TV					penetration %
	Subscribers (000)					
	Cable	Satellite	Terrestrial	DSL	**Total**	
Austria	60	228	0	0	288	**8,8%**
Belgium	146	0	10	3	159	**3,7%**
Cyprus	0	12	0	4	16	**6,5%**
Czech Rep.	0	90	0	0	90	**2,2%**
Denmark	140	337	0	0	477	**19,2%**
Estonia	0	8	1	0	9	**1,5%**
Finland	129	48	516	0	693	**28,6%**
France	1022	4402	490	750	6664	**25,3%**
Germany	2038	2440	2200	0	6678	**17,1%**
Greece	0	218	0	0	218	**5,6%**
Hungary	0	150	4	0	154	**3,9%**
Ireland	170	363	0	0	533	**38,1%**
Italy	0	3318	2500	221	6039	**26,9%**
Latvia	10	8	0	0	18	**2,0%**
Lithuania	0	8	0	0	8	**0,6%**
Luxembourg	1	0	0	0	1	**0,6%**
Malta	2	0	0	0	2	**1,5%**
Netherlands	190	555	128	0	873	**12,4%**
Poland	45	1230	0	0	1275	**9,3%**
Portugal	380	389	0	0	769	**15,1%**
Slovakia	0	15	0	0	15	**0,8%**
Slovenia	2	0	0	5	7	**1,0%**
Spain	665	1776	0	57	2498	**17,3%**
Sweden	230	608	450	12	1300	**28,9%**
U.K.	2600	7913	5178	26	15713	**63,5%**
TOTAL EU 25	7826	24116	11477	982	44497	**23,7%**

Source: Dataxis

2.4.   MHP – market developments

The demand for interactive TV applications has proved to be less than many forecast some years ago, and the commercial success of interactive television remains limited. The most successful applications have been in the area of quiz shows, sport, gambling and reality television; governments have yet to find ways to exploit the technology successfully as a means of communicating with citizens.

The most extensive deployment of interactive set top boxes using the MHP standard has been in Italy. The successful introduction of MHP in Italy is closely linked to the consumer subsidy scheme that applies there; the purchase of a decoder with interactive capabilities and return channel has been subsidised by the authorities. The subsidy served to overcome the price differential between MHP products and cheaper products without interactive capabilities, and as a consequence the interactive decoder market has been dominated by MHP. As a result of the increased demand and competitive supply, prices of MHP products in Italy have fallen considerably. The demand has allowed MHP equipment to attain critical mass, leading to economies of scale and considerable price reductions.

The presence of a sufficiently large equipment base is a prerequisite for the successful launch of interactive services. In Italy, there are over 2 million MHP decoders but interactive services have nevertheless been slow to develop. One difficulty is a reluctance of consumers with interactive decoders to connect and use the return channel via their telephone line, often for the very mundane reason that the TV set in the home is not always near a telephone connection[4]. Furthermore, the Italian MHP decoder population concerns the terrestrial platform; during this simulcast (analogue-digital) period there is an extreme spectrum scarcity which impedes the deployment of interactive services, as such services also require spectrum. Nevertheless, the Italian authorities plan to establish interactive television as a main platform for services to the public.

The very competitive market for set top boxes in Italy has driven down the price of MHP decoders to less than 100 €, but these reductions have not spilled over into other, less competitive markets where prices of MHP equipment remains relatively high. In the Nordic markets (Finland, Sweden, Denmark, Norway) and in Germany, the considerable price differential between MHP decoders and other simpler digital decoders has led the vast majority of buyers not to choose MHP products.

Even for a single standard like MHP, there can be a variety of implementation specifications. The Italian broadcasters worked closely together to develop a set of common implementation specifications. The successful take-up of MHP in Italy lies in a combination of the following factors:

1) the voluntary agreement of Italian broadcasters to use MHP,

2) the introduction of the subsidy scheme for interactive decoders by the authorities, and

3) the definition of common implementation specifications.

The developments on digital TV in Italy serve to demonstrate how flexibility and consensus among market players can achieve effective interoperability.

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[4]   This may change with the introduction of home network systems.

In the Nordic countries, although there has been a wide consensus among broadcasters and public authorities around the NorDig agreements, MHP has never achieved a strong penetration, primarily because of its price differential compared with "zapper boxes", i.e. set top boxes with no interactive television or enhanced broadcasting functionalities. Although prosperous, the Nordic countries are relatively small markets, and the price differential, in the absence of any subsidy scheme, has been the main handicap towards the successful take-up of MHP.

In Germany there have been announcements of support for MHP from cable operators and the public services broadcasters, but there has not been the same degree of stakeholder coordination as in Italy. Commercial broadcasters and pay-TV operators have been more reluctant to invest in interactive television, especially in the absence of a clear business model, and consumer subsidies have not been generally available.

In the region of Flanders, in Belgium, launching MHP on the cable network appears very promising, as cable is, by essence, a two-way interactivity medium and users can really benefit from and appreciate interactive services. Furthermore, the cable operator has established partnerships with broadcasters and content providers.

2.5. Other standards for Interactive digital television

The Commission signalled in the July 2004 Communication its intention to add two more interactive TV standards - namely MHEG-5[5] and WTVML[6] - to the List of standards that is published in the Official Journal of the European Union in accordance with Article 17 of the Framework Directive, conditional upon their adoption by ETSI. These standards have now been adopted by ETSI, and the Commission is in the process of amending the List of standards accordingly[7]. These standards are widely used in the market.

Other standards emerging from the standardisation work programme defined in mandate M331, like the portable content format (PCF)[8], will also be considered for inclusion in the List of Standards when they become available. PCF enhances interoperability by enabling content providers to author their content once and run it on multiple API platforms. PCF covers 80% of interactive television applications. PCF and other deliverables under mandate 331 have the potential to facilitate the development of interactive content as well as to improve interoperability.

With regard to proprietary standards, the Framework Directive requires Member States to encourage proprietors of APIs to make available on fair, reasonable and non-discriminatory terms, and against appropriate remuneration, all such information as is necessary to enable providers of digital interactive TV services to provide all services supported by the API in a fully functional form. The Commission has been monitoring the situation regarding the

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[5]   MHEG-5 is part of an international standard developed by the Multimedia and Hypermedia Experts Group (MHEG). MHEG-5 is simpler than MHP. There are estimated to be more than 5 million set-top boxes using MHEG-5.

[6]   WTVML is an extension of the Wireless Mark-up Language (WML) for TV. It is a micro-browser for interactive television applications. There are estimated to be more than 7 million set top boxes using WTVML.

[7]   This involves seeking the opinion of Member States via the Communications Committee.

[8]   See SEC(2004) 346, p. 19

availability of proprietary technologies for licensing by manufacturers, and has received no complaints concerning licensing arrangements.

2.6. Roadmap on High Definition Television (HDTV) Technical Interoperability

The Commission Services, concerned about possible market fragmentation arising from different - albeit standardised - technical options for HDTV, organised a workshop on 21 January 2005, in Brussels, on HDTV interoperability. The workshop was attended by European public and private broadcasters, manufacturers, infrastructure and service providers and national and European HDTV planning groups.

A labelling scheme for display devices was agreed, according to which 'HD ready' consumer equipment will be able to support both the main approaches used internationally, for scanning formats, i.e. 720 lines progressive scanning and 1080 lines interlaced scanning. In the longer term use of the more costly, but very high quality 1080/50 progressive format is also foreseen. The workshop also confirmed that all HD receiving equipment would support MPEG-2 as well as the new advanced compression coding system MPEG-4 AVC[9]. This leaves broadcasters free to make their own choices of scanning formats and coding systems, within the options provided by the 'HD ready' displays.

The underlying approach of the European industry representatives present in the workshp is to promote flexibility and interoperability among HDTV specifications. This agreement, which is voluntary and open to all market players, provides certainty for the consumer contemplating the purchase of HDTV equipment, given that the purchase of a large panel display represents a significant investment for consumers. The HD Ready label allows the consumer to distinguish between standard definition and high definition displays. The roadmap has been submitted to the Communications Committee (COCOM) and is available on the COCOM register of public documents[10].

3. THE COMMISSION'S POSITION ON INTEROPERABILITY OF INTERACTIVE DIGITAL TV

Article 18(3) of the Framework Directive allows the Commission, if adequate interoperability has not been achieved, to invoke the procedure in Art. 17 of the Directive, by which certain standards can be made mandatory. In its July 2004 Communication, the Commission noted the different aspects that are covered by the term interoperability as set out in the Directive, and concluded that the real decision facing the Commission was not so much whether interoperability had or had not been achieved, but whether there was a case to make one or more API standards mandatory for one or more segments of the market.

Drawing on the Extended Impact Assessment set out in SEC(2004) 1028, the Commission concluded that there was no clear case to take action to mandate standards at that time, but that the issue should be reviewed in 2005. One and a half years on, the decision facing the Commission remains the same, but the development of the market in the intervening period,

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[9]   Support of the compression coding system VC1 could also be foreseen when this becomes a European standard.
[10]   COCOM05-37, available at
        http://forum.europa.eu.int/Public/irc/infso/cocom1/library

and the extensive discussions that have taken place with stakeholders, have brought to light a number of issues:

- A standard like MHP is a complex specification with a variety of implementation options. One reason for the success of MHP in Italy is that the broadcasters collectively agreed a common technical implementation specification for MHP, and developed appropriate test suites to verify compliance and ensure interoperability of equipment from different manufacturers.

  This experience demonstrates that interoperability cannot be guaranteed by simply imposing in law a standard like MHP; it can be achieved when stakeholders act together to implement a standard with a common aim of securing interoperability.

- One of the arguments for having a common standard is that it allows manufacturers to achieve economies of scale and hence reduce the price or consumer equipment. Experience over the last year (for example when comparing prices of similar MHP products in Italy and Germany) shows that the price of equipment are governed to a large extent by market conditions, and low prices in one country do not immediately 'spill over' into other countries.

- The growth of interactive services has been slower that many expected. There is a need for business models to evolve further before major growth of on-line government services can be envisaged.

- A new paradigm of consensual approach and cooperation on technical interoperability has emerged in the area of High Definition TV, and this appears as a promising model for solving other interoperability issues.

The Commission considers that these developments lend support to its previous analysis and conclusions, namely that mandating EU-wide standards under Article 18(3) of the Framework Directive would not contribute significantly to the growth of interactive digital television in Europe, and could have significant negative effects.

4. CONCLUSION

The Commission's priorities are to:

- **Work with Member States to ensure the successful switchover to digital TV – as the facilitator for interactive digital services**

  The Commission will follow up its Communication of May 2005 on switchover, and will be monitoring closely the progress in Member States. Information on the switchover plans of the Member States will be published regularly on the Europa website.[11]

- **Promote open standards and interoperability**

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[11] http://europa.eu.int/information_society/policy/ecomm/todays_framework/digital_broadcasting
/switchover/national_swo_plans/index_en.htm

In the context of digital switchover, interoperability of digital television services and technologies, the Commission will continue to promote open standards developed by European standards bodies.

- **Support cooperation between Member States and between stakeholders**

  The Commission will continue to bring together Member States in the Broadcasting subgroup of the Communications Committee, as a forum for the exchange of experience and best practice on digital TV in general, and interactive digital TV in particular.

  The MHP Implementation group demonstrated the value of having a forum for exchange of views between interested parties, and the industry is taking an initiative to continue stakeholder coordination. This will be based on the successful model adopted for HDTV, where the European Broadcasting Union (EBU) and the Digital Interoperability Forum (DIF) have established a European HDTV forum.

  The Commission supports such industry-led initiatives and will ensure cooperation between the above two activities as necessary.

- **Promote international cooperation on digital TV open standards and interoperability**

  Digital television has the potential to foster digital inclusion and social cohesion. The Commission will continue to promote open, interoperable standards for digital television so that content can be exchanged across the world. The Commission has established and funded a series of actions to promote international co-operation in research, development and standardisation on digital TV. This could be extended to international collaboration in implementation and production of digital TV.

- **Monitor use of proprietary technologies**

  The use of proprietary technologies will remain subject to competition law review.