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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

[SEC(2004)1028]

EXECUTIVE SUMMARY

This Communication sets out the Commission's position on interoperability of digital interactive television services pursuant to Art. 18(3) of Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services (the Framework directive).

The Commission has undertaken this review in two stages. Stage 1 entailed publication for comment of a Commission Staff Working Paper on the interoperability of digital interactive television services SEC (2004) 346 in March 2004.

This Communication draws upon the public consultation inputs. Underlying analysis for this Communication is contained in the accompanying Extended Impact Assessment (EIA) issued as SEC (2004) 1028.

Art. 18(3) of the Framework directive requires the Commission to examine the effects of Art. 18, concerning interactive television services. If interoperability and freedom of choice for users have not been adequately achieved in one or more Member States, the Commission may act with the aim of making certain standards mandatory.

Responses to the public consultation paint a conflicting picture as to whether adequate interoperability has been effectively achieved. The Commission considers that in view of the complexity of the technological and market environment, the very different perceptions of interoperability held by market players, and late implementation of the Framework Directive in many Member States, the aim of the review is essentially to determine whether there is a case to propose making one or more standards mandatory.

The Commission concludes that there is no clear case for mandating standards at present; the issue should be reviewed in 2005. Meanwhile, a range of promotional actions are proposed to promote the deployment of interactive digital services using the Multimedia Home Platform (MHP) standard, currently the only open standard for APIs adopted by EU standards bodies. These include the creation of a Member State group on MHP implementation, confirmation that Member States can offer consumer subsidies for interactive television receiver equipment, subject to conformity with state aid rules, and monitoring of access to proprietary technologies.

The Commission seeks to ensure that European citizens benefit from a growing range of interactive television services, and considers that the market is best served at the present time by continuing to apply the provisions already agreed by the European Parliament and the Council in the Framework Directive.

1. BACKGROUND

Interactive TV adds another layer of functionality to digital television (DTV) beyond video. It consists of applications sent in the transmission alongside the video, processed by a software stack in the receiver called an applications program interface (API). Today there are over 32m digital receivers in use in Europe,¹ of which at least 25m have interactive capability.²

The market for interactive television developed without a European API standard. Initially there were five significant APIs in Europe, none of which was standardised by a European standards body. Content or applications authored for one API could not be used by a receiver containing a different API.³

This triggered concerns about lack of interoperability (covering both technical interoperability and access issues) and possible constraints on consumer choice, which could affect the free flow of information, media pluralism, and cultural diversity. These concerns could be summarised as follows. Consumers would be unable to buy a standardised, universal receiver able to receive all free-to-air and pay television interactive services and could be locked into using more costly receivers containing proprietary APIs. Broadcasters would face obstacles in developing and delivering interactive services because they would have to negotiate with vertically-integrated network operators, in control of proprietary API technologies.

These concerns were led to Art. 18 of Directive 2002/21/EC (the 'Framework Directive') entitled 'Interoperability of digital interactive television services'.

Art. 18(1) requires Member States to encourage providers of digital interactive television services and equipment providers to use an open API.

Art. 18(2) requires Member States to encourage proprietors of APIs to make available all such information as is necessary to enable providers of digital interactive television to provide all services supported by their APIs in fully functional form.

Art. 18(1) is consistent with general EU policy of encouraging open standards for the single market. Art. 18(2) accepts the market reality that proprietary API standards exist, and seeks to ensure transparency of technical specifications so that content providers can build interactive applications that function with these proprietary standards.

Art. 18(3) requires the Commission to examine the effects of Art. 18 by 24 July 2004, following which the Commission may take action to impose a standard using the powers contained in Art. 17 of the Framework Directive.

At the European Parliament Plenary of December 2001, the Commission gave an oral undertaking to include the MHP standards on the list of standards published in the Official Journal of the EU to be encouraged by the Member States, as foreseen in Art. 17 of the Framework Directive.

¹ ETSI TR 102 282, February 2004, p.11.

² Standardisation in digital interactive television, Contest consultancy for CENELEC, April 2003, p.13.

³ Delivery of conventional DTV does not require an API to be included in the receiver. An API is an optional extra. Moreover, DTV transmission is fully standardised, with only ETSI standards used in Europe.

Process

The Commission began preparing for this review as soon as the Framework Directive was adopted, by undertaking a study through an independent consultancy on possible policy options and by issuing a mandate to the European standardisation bodies in order to investigate how further standardisation could help interoperability.⁴ The MHP standards were included in the published list.⁵ The Commission also stated that the obvious way to achieve interoperability would be widespread adoption of MHP.⁶

In March 2004, the Commission Services launched a public consultation, based on a Commission Staff Working Paper SEC (2004)346 (the Working Paper). The consultation included a public hearing, and an informal seminar organised by Members of the European Parliament.

2. THE VIEWS OF THE PLAYERS

A wide range of players responded to the consultation, notably manufacturers, network operators, broadcasters and API providers; also consumer associations and others dedicated to particular viewpoints. In total, 51 entities contributed over 350 pages of closely-argued views, strong testimony to the importance of the debate for industry. Responses fall into two main groups.

2.1. Those in favour of the imposition of standards

For those who support mandatory imposition of open standards - including MHP - interoperability at the level of the consumer has not been achieved. They argue this is the most empowering form of interoperability as it maximises the choice of services and equipment for consumers. Currently, the market is fragmented and unable to attain the benefits linked to a single standard.

Market forces are unlikely to deliver adequate interoperability without public authority intervention. Attaining a critical mass of sales at European level is still an important objective for manufacturers in order to achieve economies of scale. Solutions like the proposed Portable Content Format (PCF) - which enables content to be written once and to operate on multiple API platforms – are helpful, but are not a solution for free-to-air broadcasters. For these broadcasters, access rules are a compromise solution in respect of pluralism and freedom of choice. Broadcasters still depend on network operators acting as gatekeepers in order to deliver their services to viewers. Public authorities should take a more interventionist role, following the GSM example.

The benefits of mandating open standards including MHP would include increased consumer choice and legal certainty, leading to lower prices for receivers and acceleration of the switchover from analogue to digital television. If broadcasters did not have to confront the unnecessary obstacle of proprietary APIs, this would improve the flow of information and therefore help pluralism. Service innovation should no longer depend on API proprietors. Sub-segments argue either that Member States should have the possibility to require use of a

⁴ Referenced in SEC(2004) 346 at footnotes 31, 32, 40.

⁵ OJ C 331, 31.12.2002, p.32.

⁶ EP Oral question O/2002/40

single API within their territory or that across the EU, only open standard APIs should be legal. Imposition of open standards should not be limited just to free-to-air terrestrial TV, as this would not solve the gatekeeping problem caused by proprietary APIs on cable and satellite. Other standards should be listed if they do not overlap with already listed standards.

General remarks focused on the potential for interactive television to contribute to the Lisbon agenda as underlined by the Seville Council, and criticised the Working Paper for neglecting the social role of free-to-air television. Market players supporting this position were predominantly free-to-air broadcasters from Member States where digital television is less well-developed, and a major manufacturer.

2.2. Those against imposition of standards

This group argued that interoperability had already been achieved. Their view of interoperability is different: it means the availability of the same interactive services on different distribution platforms. Head-end and network technologies enable content to be ported between different API systems. These include authoring systems able to generate applications for several APIs - multiple authoring - or the proposed PCF.

For this group, interoperability is sensitive to market demand. Where there is demand, interactive applications become available on several different platforms. Examples include gambling, video games and weather forecasting. A one box universal receiver is unlikely because of high costs, and unnecessary because of simulcasting on different networks; however there are no technical barriers. Regarding public authority intervention, they argue that the European DTV market is more dynamic than in the USA because of regulatory forbearance by public authorities. Within the remit of communications regulation, access rules are largely sufficient for preserving pluralism and user choice. Ex post imposition of standards to the detriment of substantial investments in earlier, proprietary systems would deter future investments in subsequent generations of innovative technologies.

These players' general remarks supported the line taken in the working paper, that the greater complexity of DTV alters many factors compared with the simpler analogue model. They favour the possibility to innovate on top of a standardised layer of transmission technologies, as in the internet model. No single technology is appropriate for the diverse market situations to be found across the Member States. When assessing adequacy of implementation, the Commission should take into account the current level of market acceptance and interoperability across the whole value chain. No definitive future decision on adequacy of implementation should be reached before the passage of 3-5 years.

For this group, the costs of imposing open standards would outweigh the benefits. Imposition of MHP would provide a strong incentive for the market to promote receivers without interactive capability, given the additional costs of MHP receivers and the lack of strong demand for interactive television services.

The players supporting these views were predominantly satellite pay TV and cable operators, frequently from Member States where DTV is well-developed, containing substantial populations of receivers with proprietary APIs. Other members of this constituency were software and IT companies, including owners of proprietary APIs, and a major manufacturer.

2.3. Other views

Public authority inputs reflected whether their DTV markets are well-developed – and therefore contain a substantial population of receivers using proprietary APIs – or less well-developed. Respondents from countries where interactive television is most advanced were in general satisfied that there was an adequate level of interoperability.

Consumer organisations at national and European level favoured imposition of open standards in order to achieve interoperability.

At the public hearing, several major Italian players strongly supported MHP, but were sceptical about imposing it. Government subsidies to Italian consumers for the purchase of an MHP receiver with return channel functionality reduce the additional cost of MHP. Such receivers sell for the same price as in other markets using cheaper API technologies.

3. THE COMMISSION'S ANALYSIS AND POSITION

3.1. The impact to date of Art. 18

Delays in the transposition of the Framework Directive⁷ mean that it is premature to reach an overall assessment of the effects of Art. 18(3). Discussions in the broadcasting sub-group of the Communications Committee (COCOM) have revealed a rich seam of activity regarding interoperability at working level in many Member States, frequently linked to implementation of digital terrestrial television.

Regarding Art. 18(2), relatively few Member States have API providers based or represented in their territory; so this provision has limited application for the majority. The Commission is unaware of any regulator having received a formal complaint regarding failure by an API owner to make available all information necessary to enable providers of interactive television services to provide all services supported by the API in a fully-functional form. Owners of proprietary APIs argue that they have incentives to ensure that all users obtain maximum benefit from a particular system, on fair, reasonable non-discriminatory terms – notably because there are competing APIs.

In the Commission's view, the provision of Art. 18 that has had the most impact is the requirement to review interoperability and its impact on user choice by July 2004. This has galvanised the market players to debate interoperability in considerable depth. The standards bodies received significant support from market players on both sides in developing their two reports on interoperability. Market players have given high priority to the issue, even if their views on the nature of the legal requirement and how best to fulfil it may differ.

The consultation revealed no significant, substantiated threats to the free flow of information, media pluralism and cultural diversity. The Commission notes recent political concerns however expressed in the European Parliament⁸.

⁷ On the date of application, 24 July 2003, 5 of the 15 Member States had transposed the Directive into national law. By the end of May 2004, 9 of the 25 Member States had not completed transposition.

⁸ Resolution P5_TA(2004)0373

3.2. Central issues

Responses to the consultation are sharply divided. Free-to-air broadcasters are ranged against satellite and cable TV operators and IT players. Both sides claim support from a major consumer electronics manufacturer.

The crux of the dispute is the relationship between general interests and market forces. 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 and distribution obligations. 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 of the delivery of broadcasting services with digital infrastructures is a particular source of concern among free-to-air public service broadcasters. Vertical integration can for instance create the potential for proprietary technologies to lock consumers into a particular digital platform or leverage market power. Use of proprietary technologies needs to be kept under competition law review. In some instances, vertical integration can lead to higher economic efficiency⁹.

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, aiming to promote a competitive market as the means of generating innovation and new investment. These two policies meet at the API, which is why this debate is so intense.

3.3. Interoperability and Art. 18(3) of the Framework Directive

Art. 18(3) of the Framework Directive requires the Commission to assess the effects of Art. 18. If adequate interoperability has not been achieved, the Commission may invoke the procedure in Art. 17 by which certain standards can be made mandatory.

Interoperability is not defined in the Framework Directive or in the associated directives. In addition to its use in Art. 17 and 18 of the Framework Directive, interoperability is used in Art. 24 of the Universal Service directive¹⁰, where the term covers provision of an open interface socket for the connection of peripherals.

Recital 31 - motivating Art. 18 - reflects different aspects of interoperability, stating:

- (1) interoperability of digital interactive television services, at the level of the consumer, should be encouraged in order to ensure the free flow of information, media pluralism and cultural diversity;
- (2) open APIs facilitate interoperability, i.e portability of interactive content between delivery mechanisms with full functionality of the content intact.

⁹ e.g by eliminating double margins.

¹⁰ Directive 2002/22/EC, OJ L 108, 24.4.2002, p.51.

The Commission concludes that, in view of the complex environment described in the Working Paper, and differing perceptions revealed by the public consultation, the review's aim is to determine whether there is now a case to propose making one or more API standards mandatory for one or more segments of the market.

The consequences of different scenarios under which standards could be made mandatory, have been examined in the accompanying EIA. Proposals that individual Member States should be able to make one or more open API standards mandatory are incompatible with the single market. Such a policy would erect barriers to trade between Member States.

Making the MHP standard mandatory by a certain date at EU level could ensure technical interoperability of equipment and services, but content providers would still have to negotiate access to the networks and associated services, as mentioned above. Most commentators recognise the problems this policy would create for the estimated 25m set top boxes with API functionality already in the market, and in fact no major contributor proposes this level of intervention. In the light of the negotiating history of the Framework Directive, it is unlikely that such a proposal would find the necessary support from Member States.

The Commission concludes that there is no clear case to mandate EU wide standards generally at the present stage of market evolution, and that more time will allow the provisions of Art. 18 of the Framework Directive to take full effect. It will also be necessary to see whether the concerns related to the "gatekeeping" role of operators using proprietary APIs materialise in the form of formal complaints to regulatory authorities.

The limited commercial success of interactive television so far has not provided much incentive for market players to ensure that all services can be made available to all receivers, however this might be achieved. As the market grows, interoperability of services can be expected to develop in parallel. The possibility to develop interactive content so that it can be adapted to different API platforms is the minimum requirement for service interoperability in a growing market. PCF and improved authoring techniques can facilitate portability of content between APIs.¹¹ This does not rule out other forms of interoperability, including migration to open standards from proprietary standards where there is a business case. Uncertainty regarding demand suggests that simpler, cheaper presentation engines should continue to be available alongside the more sophisticated and more costly execution engine, in order to provide consumer choice.

The Commission will review this issue in the second half of 2005. Meanwhile, further promotion of the MHP standard could benefit European consumers.

3.4. Promotional measures

3.4.1. Improved co-ordination of Member States' implementation of MHP

The Commission will constitute a working group of Member States in order to achieve a clustering effect. Fragmentation caused *inter alia* by widely varying rates of market development in different Member States makes it hard for manufacturers to achieve economies of scale. The aim would be to identify actions that would help MHP achieve critical mass and exploit economies of scale, leading to price reductions and improved

¹¹ PCF could cover 80% of the interactive television application, but not the most complex ones, e.g Electronic Programme guides

prospects of market take-up. Currently, the additional costs of MHP are a barrier to wide-spread take up. This measure is intended to help smaller Member States in particular.

3.4.2. Consumer subsidies

One way of reducing the additional costs to consumers of equipment incorporating standard execution engines such as MHP is to subsidise purchases at the level of the consumer. Consumer subsidies are already available in Italy, and MHP receivers with the subsidy now retail for the same price as a digital receiver using an earlier, cheaper API in other, more mature national markets. The conditions imposed also provide the public with an incentive to acquire a receiver with both interactivity and a return channel, rather than a simple receiver without these functionalities. Member States may therefore offer consumer subsidies. Such consumer subsidies need to be technologically neutral and must be notified and conform to State Aid rules. They should be temporary and reduce in proportion to the falling cost of receivers, in order to avoid over compensation. Subsidies to undertakings are not included in this initiative and would need to be notified to the Commission in accordance with the normal procedure.

3.4.3. List of standards published in the Official Journal

The Commission signals its intention to add two presentation engines, MHEG 5 and WTVML, when the list is next updated, conditional upon their adoption by ETSI. The revised list would be submitted for opinion to COCOM as foreseen in Art. 17 of the Framework Directive.

Other standards emerging from the standardisation work programme defined in phase 1 of mandate M331, will be considered for inclusion in the List of Standards when they become available. These deliverables have the potential to improve interoperability as described in the Working Paper.

3.4.4. Monitoring access to proprietary technologies

The Commission – assisted by the Member States as appropriate – will continue to monitor the availability of proprietary technologies for licensing by manufacturers. Combining multiple complementary technologies into receivers is one way of achieving a “one box” universal receiver. Where these functions are standardised – tuners for instance – the only barrier is cost; but there could be greater clarity regarding the availability of proprietary technologies such as APIs. Art. 6, Annex I of the Access and Interconnection Directive¹² already imposes a requirement on providers of conditional access systems to ensure that these are made available on fair, reasonable and non-discriminatory terms, when granting licences to manufacturers of consumer equipment.

The Commission will follow up through its regular implementation reports on the eCommunications package.

¹² Directive 2002/19/EC, OJ L 108, 24.4.2002, p.12

4. CONCLUSION

The Commission seeks to ensure that European citizens benefit from a growing range of interactive DTV services, available on an increasing number of transmission platforms, and considers that the market is best served at the present time by continuing to apply the provisions already agreed by the European Parliament and the Council in the Framework Directive. Moreover, use of proprietary technologies will remain subject to competition law review.

The Commission will take additional measure to promote the voluntary implementation of the MHP standard, which is currently the most advanced open API standard in Europe.

The Commission will continue to pursue the aim of full and effective transposition of Art. 18 by all Member States, but in view of the complexity of the environment, the different perceptions held by market players, and late implementation of the Framework Directive in many Member States concludes it is inappropriate to determine that interoperability has or has not been adequately achieved in the context of Art. 18(3). However, this review has not substantiated the view that concerns related to cultural diversity and media pluralism could only be overcome by imposition of a single standard for APIs. More significant elements in the media pluralism debate lie within the competence of Member States, notably media ownership and control.

The Commission will review the situation in the second half of 2005.