

DIGITAL INTEROPERABILITY FORUM (DIF)¹

RESPONSE TO THE COMMISSION STAFF WORKING PAPER ON THE INTEROPERABILITY OF DIGITAL INTERACTIVE TELEVISION SERVICES

SEC(2004) 346

EXECUTIVE SUMMARY

1. The Digital Interoperability Forum (DIF) is an industry group of many of the foremost players in Europe's world-leading digital television industry. DIF aims to promote the benefits of digital and interactive television, it deals with policy and regulatory matters for these services, including where these matters relate to standardisation issues (but DIF is not itself a standardisation body or involved in the development of standards). Its members are committed to the development of commercial and technological solutions that will make digital and interactive television services accessible to the largest number of people on the widest choice of platforms and devices.
2. DIF's members are active at many different technical and commercial levels of the delivery of digital and interactive television services. They have been instrumental in providing the infrastructure on which the wide choice of digital television channels and innovative interactive services — offering information, e-commerce and entertainment — that are accessed by millions of households in the majority of EU member states.
3. DIF's members have invested collectively in tens of billions of euro in developing and rolling-out digital TV in Europe. They participate in all the relevant technical standards bodies working on digital TV across satellite, cable and terrestrial platforms, along with broadband, mobile and fixed telephone connections. DIF's members remain committed to the development of industry-led solutions to make Information Society services available to European consumers and citizens.
4. DIF members recognise that it is compelling content and services which attract consumers to exploit the capabilities of digital and interactive television. Attractive content and services in turn require sustained, tangible and substantial commitments by content developers, infrastructure providers, and network operators to be successful.
5. It is worthwhile noting that a number of DIF members have made the commercial decision to develop MHP as a voluntary standard, thus providing their expertise to the DVB. MHP compatible solutions are being developed and deployed by CanalSatellite, NDS, and OpenTV, all of whom are members of DIF. In certain markets MHP

¹ DIF represents many of Europe's pioneers in the delivery of digital and interactive television through satellite, cable and terrestrial platforms. Its members are: Advance Digital Broadcast, BSkyB, Canal+, Espial; Flextech; Liberate; Microsoft; Nagravision; NDS; ntl; Numericable; OpenTV, Pace, MicroTechnology, Sky Italia; Telewest; UPC/chellomedia and ZetaCast.

compatible set top boxes are being used (e.g. 50,000 subscribers to CanalSatellite NDS' *Pilotime*)

General comments on the Commission Staff Working Paper on the Interoperability of Digital Interactive Television Services

6. DIF is pleased to contribute to the Commission's review of the issue of interoperability of interactive digital television services, and in particular on the question of whether it would be appropriate to make implementation of open standards compulsory at EU level.
7. DIF welcomes the depth of the analysis in the Working Paper. Setting the debate in its historical context of the evolution of broadcasting from analogue to digital television (DTV) and the process for development of technical standards is an essential starting point. It is especially welcome that the document clearly reaffirms the Commission's preference for market-led solutions, and regulation only where it is considered essential.²
8. DIF's observations are organised as follows:
 - A. Interoperability in digital television services
 - B. The role of regulatory intervention
 - Mandation of one API for free-to-air DTT or "greenfield" platforms
 - C. Detailed comments in response to specific questions raised in the Staff Working Paper.

A. Interoperability in digital television services

9. As recognised in the Working Paper, (DTV) systems are far more complex than their analogue predecessors. The delivery of interactive services via television receivers requires a combination of digital media and technologies that encompass innovations in the IT telecommunications and broadcasting industries. To be competitive with information society services on other delivery platforms and devices, the interactive television industry must be more dynamic than traditional analogue broadcasting. Diversification of content delivery modes, and, hence, the means by which consumers can access content, adds further weight to the forces affecting the industry. Widespread consumer adoption and success for digital interactive television services has to be achieved in a very challenging environment.
10. Just as with the Internet, DTV rests firmly on a standardised means of information delivery. DVB broadcast and MPEG compression standards have been highly successful in achieving pan-European (and in many respects worldwide) acceptance. This success has led to interoperability of audio and video content at the level of delivery. Driven by widespread industry support and adoption, standards have been developed which are focussed on content format and delivery, rather than content management and presentation. This has left individual vendors of set top boxes, APIs etc., the freedom to innovate around a core set of technologies; each vendor providing solutions that fit a variety of commercial needs.

² "Commission policy is that, in general, standardisation should be an industry-led process; it is for market players to agree and introduce standards in a timely and consensual manner, in order to meet their own business needs", Page 23, staff working paper (SWP).

11. This approach, which is supported by DIF members, provides a workable solution in a European Union composed of Member States which are culturally, economically and technologically diverse – and at different stages of development of DTV. Moreover, DIF maintains that this approach is fully in accord with the eEurope 2005 Action Plan which has at its core, the encouragement of investment and innovation.
12. As recognised in the Staff Working Paper, television is largely a nationally-based activity³: even satellite pay TV is not generally marketed across borders for a number of both commercial and cultural reasons. It is clear, therefore, that market fragmentation does not result from a lack of interoperability and interoperability will not modify Europe's rich heritage of languages and cultures. Thus, the scope of interoperability across the EU will always be limited by factors that the compulsory use of a particular API cannot influence.
13. DIF believes strongly that the interests of EU citizens and consumers should be foremost in the Commission's deliberations. Serving the consumer and satisfying consumer demands is a prerequisite for a successful DTV industry. In DIF's view, this requirement is being met, and will continue to be met, through the service offerings which are made available by industry players who only survive through facing up to the diversity of consumer needs. In this context, DIF asks the Commission to have full regard to the fact that **the European countries in which digital television is the most advanced are those in which DIF members have made substantial investment**; investments which are aimed at simulating and satisfying consumer demand.
14. DIF's members maintain that **standardisation without widespread market acceptance serves neither interoperability nor market development**. Historically, industry-led standards based on content format and delivery have been able to obtain broad support from both commercial and regulatory parties – as has been the case in DTV transmission, Internet protocols, and mobile telephony. In contrast, standards with limited support, designed to reinforce specific technologies or market models will fail and invariably cripple development (e.g. D2MAC). DIF believes that attempts to enforce standardisation beyond levels accepted by industry will stifle the innovation and growth seen to date in Europe's world-leading DTV industry.

B. The role of regulatory intervention

15. The Working Paper recalls one of the fundamental principles of the new regulatory framework, i.e., to regulate only where "strictly necessary"⁴. DIF believes that regulatory intervention in the area of the API used to deliver interactive services is unjustified.
16. Investments by DIF members have made digital television and interactive services a reality across Europe and have contributed significantly to Europe's leading position in this field. Such industry-led developments are crucial to attaining the e-Europe 2005 Action Plan objectives. The Working Paper recognises this fact by recognising that no one API should be made obligatory across the various platforms or in any one Member State.⁵
17. Since an overriding concern of all participants in this debate is that Europe maintains its lead in digital and interactive television services, DIF is pleased to note that the

³ Page 24, SWP.

⁴ Article 17 of the EC (Framework) Directive 2002/21/EC

⁵ Page 13, SWP.

Working Paper recognises the risks of regulatory intervention. Moreover, the Working Paper recalls that different traditions of interoperability apply in sectors other than broadcasting which are also affected by convergence (e.g. mobile telephony). It is clear that such traditions – and tendencies for regulatory intervention - must also be taken into account. Given the continuing evolution of these converging sectors, the Commission recognises that it would be inappropriate to contemplate regulatory intervention in broadcasting if measures could be bypassed by players on other networks.⁶ DIF agrees and argues that this would also be counterproductive and contrary to another fundamental principle of the Directives, i.e., technological neutrality.

Mandation of one API for free-to-air DTT or “greenfield” platforms

18. In respect of free-to-air DTT, as yet in the early stages of deployment in most of Europe, the question of obligatory implementation of a single open API is raised. The Working Paper suggests that such a policy would not result in a significant impact on an installed base of set-top-boxes using a “legacy” technology. DIF suggests that even in respect of such sectors, the Commission’s statement in the Working Paper is particularly pertinent: such a policy choice could have a significant detrimental effect regarding future infrastructure investment, since market players could simply adopt a “wait-and-see” attitude for future standardisation decisions.⁷
19. With regard to the DTT sector specifically, DIF would make the following observations:
 - Although relatively small in the context of DTV in the EU as a whole, there is an existing DTT sector. In the UK, for example, there are in excess of 3.2m DTT homes. The legacy issue therefore exists;
 - As stated by the Working Paper, ‘the opportunity for achieving interoperability through the MHP standard varies depending on the market’⁸. This will also apply to DTT across Europe, which weakens the case for such standardisation;
 - Even within the DTT segment, it is in the interests of the consumer to encourage competition in respect of reception devices. In the UK there are approximately 20 manufacturers of STBs and interactive digital TVs (iDTV). These competitors should not be limited solely to compete on price, as would be likely with a common API. Competition on features, including functionality (for example, the degree of sophistication of the interactive services supported by the box) must also be allowed. This would be hindered by a mandatory API standard; and
 - The success of free-to-air DTT as a consumer proposition is far more dependent on the reliability and robustness of the technology and the willingness of stakeholders with diverging interests to reach agreement on numerous commercial and technical issues, than on the API which is used.
20. DIF supports the Working Paper in identifying the disadvantages of implementing one open API for “greenfield” platforms (DTT, cable, satellite, etc.) and advocates the following additional points:
 - DTV embraces “greenfield” platforms. If a standard is to be imposed on a sector that has already seen significant development then that standard should be broadly supported by industry. There is little point in mandating standards that have not achieved consensus;
 - A prescriptive regulatory regime will stifle innovation in the name of interoperability;

⁶ Page 12, SWP

⁷ Page 22, SWP

⁸ Page 18, SWP

- The mandation of any particular API represents an attempt to address a commercial issue in a minority of Member States via technical means: an approach which is highly counterproductive at best; and
 - It is important to reiterate that the imposition of a single API does not and cannot guarantee interoperability: differences in platform performance, implementations and feature sets will mean that users will not have identical experiences. This holds for both existing and greenfield platforms.
21. In summary, DIF agrees with the analysis in the Working Paper that mandation would send the wrong message to future investors, thereby freezing market initiatives. In addition, it is worth noting that past attempts at such regulation (for example, the imposition of the D2MAC standard for DBS satellite) foundered.

C. Detailed comments on specific questions raised in the staff working paper

22. DIF's response to the Commission's specific questions is set out below:
1. **The extent to which interoperability of interactive digital TV services has been achieved in the EU.**
23. DIF members have deployed interactive DTV services across different distribution platforms (cable, satellite, and terrestrial) and have facilitated such deployment in the platforms which they operate. For example, in France, identical interactive betting services⁹ are currently being deployed both on the CanalSatellite and TPS multichannel bouquets, and on cable (Noos). In the UK, the shopping channel QVC, MTV and Music Choice Europe all have similar applications running on both satellite and cable. Another UK example is that of the BBC (not a DIF member) which is currently offering content across cable satellite and terrestrial platforms.
24. Interoperability is already a fact of life, despite differences in APIs. CanalSatellite itself uses two different middleware solutions (MediaHighway and MediaHighway Advanced, an MHP compliant solution). Moreover, interactive applications for the CANAL+ channel (programme information, language soundtrack change option, subtitling), which are available over satellite are also available over the different cable platforms, which use OpenTV as their middleware solution. The interoperability of these services is guaranteed by adapting the service according to the different distribution platform (cable, satellite) and/or the underlying middleware solution (MediaHighway Advanced, MediaHighway, OpenTV) used.
25. Another example is that of UPC/chellomedia's product, Mistral, which is an end-to-end product suite designed to support the production, distribution and management of all elements of enhanced tv programming regardless of the middleware platform for which it is targeted. It is this product that enables UPC/chellomedia to offer multi-screen UEFA content, interactive advertising and other enhanced programming features to its various DTV platforms - thus highlighting the existence of solutions that already facilitate portability of content.
26. All the above goes to show that the requirements of Article 17 have already been met; i.e. interoperability at the level of the consumer currently exists, as services can be received by the consumer across multiple platforms irrespective of the middleware used.

⁹ On line betting (horse-racing) for the *Pari Mutuel Urbain* (PMU)

1) a) The different levels of interoperability and access and interworking issues

1) a) i) – *Simple interoperability: device to network interoperability, typically ensuring access in free-to-air broadcasting;*

27. Simple interoperability in the sense used by the Working Paper (i.e., a single box that can be plugged into any digital service network, including those of Pay TV operators) is unlikely to arise in a competitive commercial environment. (See DIF response to point 1)a) ii)).

28. Simple video and audio interoperability, i.e., conventional television viewing, has already been achieved within each mode of transmission in Europe through the work of the DVB: terrestrial—DVB-T; cable—DVB-C; satellite—DVB-S. As with the GSM standard, industry reached widespread consensus for the basic transport of content and data. But as with the telephony sector, simple device-to-network interoperability across platforms may not be available: an analogue telephone cannot be connected directly to an ISDN network. Nevertheless, cross-platform availability of content, data, and services is widely available through means other than imposing a single technical solution, such as an API, on different platforms.

29. Regarding the need to ensure access to free to air broadcasting, DIF would argue that both the Access and Universal Service Directives, coupled with EU Competition law, ensure that any problems that may arise can be resolved.

1) a) ii)– *Content interoperability: portability of content between different API platforms;*

30. It is in the interest of content providers to optimise distribution of their product. Thus, content portability is becoming increasingly widespread in relation to interactive digital television services. This is especially true for information-driven applications such as enhanced news services and transactional services in France and the UK. These services are available across multiple APIs and delivery mechanisms. Such multi-platform deployments are readily achieved by separating content presentation (which is platform-specific) from content generation and delivery (which can be made platform-independent).

31. Other solutions which increase content portability include BskyB's WTVML specification which has been standardised in ETSI and the DDE-T SMPTE standard/specification. In addition, work is ongoing within the DVB to create a specification for a Portable Content Format (PCF). It is expected that this work will be completed by the first quarter of 2005. Other commercial solutions already available in the marketplace include, UPC/chellomedia's Mistral product which already supports a number of DTV middleware platforms.

32. Interoperability for interactive services extends also beyond content delivery: there has been extensive work done by industry players to make information feeds available to platforms in standardised form, such as NewsML. All of the above are evidence of industry's active engagement in providing solutions that ensure portability of content over multiple APIs and across a variety of platforms and devices.

33. Nevertheless, availability of content on multiple platforms remains a commercial rather than a technical issue. DIF notes that **commercial arrangements, including content access and distribution rights, are a far more significant factor in the portability and availability of content, than the API used.**

1) a) iii) – **Head-end interoperability: normally real-time operations to facilitate multi-platform availability of services e.g. replacing modulation format;**

34. DIF members have already demonstrated a variety of techniques for making services available across multiple platforms including head-end additions for technologies such as portable content formats. Products such as UPC/chellomedia's Mistral, NDS' iEngine2, and BSkyB's WTVML browser allow the simultaneous playout of enhanced content over multiple APIs including Liberate, Open TV and MHP on cable, satellite, and terrestrial platforms.

1) a) iv) – **Interworking agreements: commercial agreements between platform operators to make services available to each others' customers.**

35. Such inter-platform agreements are widespread and successful (although the agreements are normally between the content provider and platform operator). For example, the Canal+ channel and interactive services are available on cable networks such as Noos, France Telecom Câble and UPC, which use different middleware solutions. BBC, ITV, Channel 4 and 5 interactive programming is available on the digital satellite, ntl and Telewest digital cable platforms in the UK, and on digital terrestrial.

1) b) **The role of market forces**

1) b) i) – **To what extent can market forces ensure that interoperability is provided to meet user needs?**

36. Interoperability is market sensitive. DIF believes that markets are driven by users and consumer preferences. By definition, therefore, market forces will work in users' favour to meet their needs. Activities to achieve interoperability are a natural symptom of a constantly evolving interactive digital services sector where the technology cycles are only beginning to emerge and the content services just beginning to be developed. As the services evolve so too will efforts to devise and achieve interoperability.

37. Consumer demand will ensure interactive content providers generate their content on different platforms. For example, in the UK, online retailer QVC has applications running on both digital satellite and cable; the application is different on each platform, but both applications are fed by data in the same format. In addition, Open TV makes its Playjam interactive service available across multiple platforms, middleware and delivery networks in Europe and the US. (See DIF's answer to Question 1: 'The extent to which interoperability of interactive digital TV services has been achieved in the EU' for further comment).

1) b) ii) – **Will the market on its own produce "one box" receiver solutions, e.g. containing several proprietary APIs and conditional access systems?**

38. Consumer adoption of interactive television services is driven by content; consumers are, in general, indifferent to the technology in the receiver. To the extent that content can be made available in multiple markets by other means (e.g., interworking agreements, plug-ins, portable content formats), there is little incentive for manufacturers to produce, or for consumers to buy, a "one box" receiver.

39. Nevertheless, there is no technical barrier to creating a receiver that supports multiple reception standards (cable, satellite, terrestrial) and multiple APIs (e.g. OpenTV, NDS, Liberate, Mediahighway, MHP) just as there is no technical barrier to building a telephone that can be used with analog, ISDN and GSM connections. Indeed, there are already receivers on the market that support multiple content formats. However, the

final decision to field a 'single' box solution lies with the consumer. In the absence of demand, such a solution would inevitably be more costly than single API alternatives.

40. It is also important to recall that there are fundamental differences between traditional analogue and digital interactive television environments. DTV platform providers need to carefully manage the STB and related software (APIs) so as to ensure quality of service for the idtv viewers. Indeed this management is constant and often involves adjusting an API to the platform involved. In other words, deployment of the exact same API specification across the same or even differing platforms will most likely result in variations to that API thus belying the belief that mandation or promotion of a single API across a given territory will guarantee interoperability.
41. **Notions such as a “one box” receiver, which worked in the analogue world, are no longer feasible in the digital interactive world.** In those EU territories where DTV is more developed there is no evidence to suggest that consumers do not understand the fundamental difference in the consumer equipment requirements for DTV. In other words, consumers do not expect to be able to use the same receiving equipment on different networks and to suggest otherwise (or that freedom of choice would be improved if this were possible) is misleading and understates consumer awareness.
 - 1) **b) iii) – *Will the deliverables resulting from the CENELEC report and the follow-up mandate (in particular, authoring guidelines and possibly a common content format) facilitate adequate interoperability across the different markets of the EU?***
42. DIF fully supports the development of standards for content format and authoring guidelines to strengthen further service and content interoperability. In particular, DIF members are making significant contributions through the DVB Portable Content Format (PCF) and ETSI (BSkyB WTVML) specifications. However, in common with the STB API, DIF members believe these should be voluntary standards.
43. These approaches have the advantage of enabling content to reach both existing and emerging platforms, providing nascent markets with a larger base of experience and services than any single platform can offer. For that reason, DIF believes that regulatory focus on APIs alone overlooks a critical opportunity to develop a model that supports a variety of platforms, including those based on proprietary technologies.
44. DIF observes also that the requirements of Article 17 currently do not admit solutions put forward by such organizations as the W3C¹⁰ or IETF¹¹. This is unjustified, given the critical role such organizations have played in the development of the Internet, e-mail, and the World Wide Web. Significant innovation continues to be accomplished around the World regarding the delivery of information services to a variety of consumer devices, including PCs, televisions, PDAs, and mobile phones. DIF members suggest that it would be beneficial for the Commission to widen consideration of specifications to any standard which is available under terms substantially similar to those provided by ETSI, CEN, and CENELEC.

1) **c) The role of public authorities**

¹⁰ The World Wide Web Consortium (W3C) develops interoperable technologies (specifications, guidelines, software and tools) to lead the Web to its full potential. <https://www.w3.org>

¹¹ The Internet Engineering Task Force (IETF) is a large open international community of network designers, operators, vendors and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. www.ietf.org

- 1) **c) i) – What forms should public authorities’ support for interoperability take during different phases of the technology lifecycle typically (1) proprietary systems (2) introduction of standardised system(s), possibly after some delay (3) introduction of replacement next generation technology...etc, taking into account policy objectives described above?**
45. DIF believes, and as the Commission itself states in the Working Paper, that market-led solutions are the most appropriate method to resolve technology issues. The forbearance shown so far by the Commission has generated the most dynamic and fastest growing digital TV sector in the world.
- 1) **c) ii) – How far will access rules suffice to meet the objectives of content regulation, as expressed in Art 18 (free flow of information, media pluralism and cultural diversity)?**
46. The Access Directive and anti-trust provisions of the EC Treaty will collectively ensure that access to networks and platforms continue to be regulated on fair, reasonable and non-discriminatory terms.
- 1) **d) The result of including the MHP standard in the voluntary list of standards published in the OJ in December 2002:**
- 1) **d) i) – Is MHP being implemented by market players? If so, by which market players?**
47. MHP development is underway by both STB manufacturers and middleware providers (amongst whom a number of DIF members also feature). While development, testing and trials continue, there have been a small number of actual deployments of various versions of MHP. (Further information can be obtained from the DVB Project Office).
48. Regarding platform operators’ adoption of MHP, CanalSatellite in France commercially chose to deploy the MediaHighway MHP API alongside another proprietary API illustrating that multiple API’s can coexist on the same platform supporting interoperability. Other (non-trial) deployments in Europe have been carried out by digital terrestrial operators in Finland and Italy.
- 1) **d) ii) – At what point after publication would it be appropriate to decide whether or not the standards have been adequately implemented?**
49. An adequacy finding should be based on objective, relevant and achievable measures of implementation. Such measures should, in particular take into account market acceptance and market development. Whatever a standard’s apparent advantages might be, if it cannot attract broad and sustained investments in actual deployments then any discussion regarding the adequacy of its implementation is moot – especially in a sector where other solutions are already deployed.
50. Furthermore, given the complexity of interactive digital platforms and of associated infrastructure, any measure of implementation should take into account the entire value chain, rather than use a single point measure as a proxy for overall implementation.
51. Finally, fixing an appropriate date to decide whether or not the standard has been adequately implemented must be done carefully i.e. the lifespan of the current installed solution should be taken into account; inappropriate measures risk penalising those who have done the most to establish Europe’s digital and interactive television sector. Since set-top-boxes typically have a lifespan of over 10 years, it would be necessary to

allow for a number of years before judging whether or not, in the context of the Framework Directive, the published voluntary standards have been adequately implemented. Ultimately, however, this depends upon the willingness of industry to adopt the standard.

2. The benefits that could be achieved if implementation of the MHP standards published in the OJ were to be made compulsory. In addressing this issue, respondents are invited to comment on the following:

2) a) – *How would compulsory implementation of MHP standards improve interoperability and freedom of choice for users?*

52. DIF does not believe that compulsory implementation of any standard would remove all interoperability issues or substantially increase freedom of choice. The objectives reflected in the Lisbon agenda and eEurope are innovation, investment, diversity and seamless delivery of content across all current and emerging delivery platforms. It is too narrow to concentrate – through legislative intervention – on standardising a device that attempts to achieve interoperability of interactive TV services alone. Indeed the mandating of MHP could put the aforementioned objectives at risk, since as mentioned below, it could lead to more widespread development of simple zapper boxes without the capacity to support interactive services, thereby reinforcing the digital divide.

2) b) – *Who would benefit? Who would not benefit? When would the benefits be felt? Which undertakings would be required to implement the standard?*

53. Compulsory implementation of MHP standards may benefit some large consumer electronics manufacturers who can handle distribution on an EU-wide basis. Holders of IPRs and technologies specific to MHP would also benefit from such mandating, although this would clearly come at the expense of competing IPR and technology holders. Furthermore, Member States who have chosen to subsidise, directly or indirectly, MHP receiving equipment may be able to reduce or remove that subsidy if economies of scale were to generate a sufficient reduction in the price of STBs or idTVs. However these benefits are not specific to MHP; they would apply to any single mandated API.

54. DIF believes that those who would suffer from compulsory implementation of the standard include the consumer, pioneer digital platform operators, middleware providers as well as innovators of not-yet-developed technical services and solutions. The reasons for this include:

- As has been stated above, there are potential cost savings resulting from volume production, but there is contrary evidence that such cost savings also stem from increased competition (as shown, for example, in the UK market where the cost of DTT/DSat receivers/decoders has fallen in anticipation of increased sales). In addition, the IPR cost attributable to MHP is unlikely to fall;
- Legacy issues, as recognised by the Working Paper, will not allow platform operators already serving significant populations of digital receivers to introduce a different API. As stated in the Working Paper, “Mandating migration to a standard after market players had been permitted to use proprietary standards for several years could be hostile to future infrastructure investment... such a delay could also damage welfare by reducing choice.”¹²; and

¹² Page 22, SWP.

- For new platforms, if the choice is either “MHP or no interactivity”, it is likely that some operators may decide that MHP is too complex and/or costly, and, consequently, opt for “no interactivity”. Solutions presented must be matched to the circumstances: the recent decision to enforce a rapid switch-off of analogue broadcasts in Berlin has led to strong sales of zapper boxes with no interactivity.

2) c) – Who would bear the costs? Would the benefits exceed the costs?

55. Ultimately, it is the consumer who will bear the costs. MHP does not offer substantially, if any, more features than those already available on proprietary systems, yet can require more memory and processing power. **MHP is also not ‘free’ in IPR terms – and many of the intellectual property rights for the specification are not yet declared.** In addition, the true cost of the software stack¹³ - which is unlikely to be lower than the cost of existing software stacks - is also unknown. Therefore the cost of commercially exploiting MHP and related software is totally unknown. DIF therefore believes that it is impossible to argue that the benefit to the consumer of compulsory implementation of MHP is worth the cost, when this is not quantifiable.

2) c) i) – If implementation were to be made compulsory, from what date would it apply? Would there be a phasing-out period for legacy systems?

56. No standard should be made compulsory before it has clear and broad support for compulsory status from the industry: to do otherwise could result in a significant regulatory failure, such as arose from the mandation of D2MAC. In addition, as there is a large established base for non-MHP based interactive television services, it would be counterproductive to consider a compulsory transition to another API such as MHP. In the event that MHP-related infrastructure and services are developed and deployed with a scope and scale at least equal to that of existing platforms, market forces will determine an economically acceptable transition period, if this is appropriate. If the proposed API has not established itself as a viable alternative, then compulsory implementation cannot be justified. It would represent intervention for industrial policy purposes and would not be technology neutral (and therefore would be in contradiction with the principles of the 2003 Communications Package).

2) d) – How would the imposition of the MHP standards affect switchover and related policy objectives?

57. DIF believes that imposition of the MHP standards will slow down the switchover process. Although it has been argued that interactivity alone is likely to be a key factor driving the adoption of DTV, there is little or no evidence that this is the case. As stated by the Working Paper, technology does not necessarily create demand. In addition, in those markets where interactivity is available, few users would argue that it is either material for their choice of a particular digital service provider, or their primary reason for staying with that provider.
58. Whatever their merits in specific areas, **proposed compulsory APIs such as MHP, have so far failed to attract substantial investments in many of the less developed markets:** markets that mandation supporters often put forward as ideal targets for mandation. Such investments are critical to the success of any platform and switchover.

¹³ Software stack refers to the software necessary to run applications on the API specification. Users must obtain the necessary IPR for the software stack as well as for the API specification itself.

59. DIF members believe that, in the absence of widespread voluntary support for and investment in MHP, the imposition of MHP is likely to lead to a future where zapper boxes become the principal means of digital TV reception. This would effectively foreclose the use of DTV to deliver information society services; an outcome which would harm the goals of the eEurope Action Plan.

60. Regarding overall policy objectives, there is a danger that imposition of a compulsory API standard would, in fact, hinder their attainment. With reference to the objectives as presented on page 21 of the Working Paper, there are a number of problems that may be identified. These are presented here under the headings of the major policy objectives.

61. To promote competition

“... ensuring that users ... derive maximum benefit in terms of choice, price, and quality”. Clearly, users must be free to choose from a wide selection of options ranging from highly sophisticated interactive services, to more simple interactive services, to services that do not include interactivity. A decision mandating that interactivity must be provided — and, moreover, specifying the level of sophistication of such interactivity — whether the user wants to make use of it or not, discourages competition;

“... ensuring that there is no distortion or restriction of competition in the electronic communications sector”. As the diversification of delivery means for digital television content continues, regulatory intervention in any one area will inevitably lead to distortion of the market and restriction of competition;

“... encouraging efficient investment in infrastructure and promoting innovation”. Europe has been the arena for the world’s most rapid growth of investment and creative commercial exploitation in digital TV. DIF believes that this success derives from the favourable conditions provided for under the existing regulatory framework. The implementation of compulsory standards will send the wrong message both to those who have had the vision and courage to make European DTV the success it is today and to other candidates for investment in emerging markets.

62. To develop the internal market

“... removing remaining obstacles to the provision of electronic communications networks, associated facilities and services and electronic communications services at European level”. There are currently no identifiable obstacles that would be removed by the compulsory implementation of a standard API;

“... encouraging the establishment and development of trans-European networks and the interoperability of pan-European services, and end-to-end connectivity”. Such an objective has already been met for simple digital video and audio content. As has been argued elsewhere in this document and in the Working Paper itself, trans-European networks and interoperability of services will not be achieved through the sole implementation of a standardised API;

“... ensuring that in similar circumstances, there is no discrimination in the treatment of undertakings providing electronic communications and services”. DIF believes that existing legal instruments, such as the Access directive and the anti-trust provisions of the EC Treaty, are sufficient to deal with any issues that might arise.

63. To promote the interests of citizens

“... ensuring a high level of protection for consumers in their dealings with suppliers”. DIF firmly supports this objective, but believes that the best possible protection for consumers lies in providing effective choice. As stated above, effective choice must also include the differentiation of interactive services and capabilities of equipment. Furthermore, DIF members believe that consumers expect DTV to be as reliable and safe as analogue TV. Accordingly, the integrity and reliability of the delivery system, are paramount;

“... promoting the provision of clear information”. DIF firmly supports this objective. There is little or no evidence that any consumer confusion derives from the lack of a standardised API. Indeed, it could be argued that such a move would be counter-productive: **neither interactivity nor interoperability are dependent on a standardised API**, and moves to explain that the introduction of a standardised API is aimed at ensuring that interactivity is supported could confuse the public;(emphasis added)

“... ensuring that the integrity and security of the consumer experience, is not a function of the API, but is about the ownership and end to end responsibility for the whole platform. Successful vertical operators have taken strict measures in terms of end to end systems integration and rigorous testing of new applications and software upgrades to ensure the integrity of these platforms are maintained. The complexity increases with every new STB variant that is deployed and is difficult and expensive to manage in a controlled vertical market. In a horizontal market, where the numbers of STB variants could be unrestricted and there is no single owner, with overall end to end responsibility and importantly a commercial interest, the task of maintaining integrity and security for the consumers is even more difficult to manage and control. The imposition of such a complex API as MHP, which is only a specification and not an implementation, will further complicate this task and act as a further deterrent to investment.

3. Should the Commission add further API-related standards and public specifications to the list of standards required by Article 17 of the Framework Directive as they become available?

64. The Commission must add any standard or specification which contributes to interoperability. Additional published standards could increase options for operators allowing the development of different retail offers including different levels of interactivity according to the level of service required. DIF members note that the precise process for adding specifications to the list is unclear; we would appreciate the Commission's clarification on this issue.

CONCLUSION

65. The Commission's Working Paper provides important insight and clarity on issues central to the debate on the interoperability of digital interactive television services.

66. The Paper clearly sets out the fundamental difference between interoperability in analogue television and interoperability in the present digital environment.

67. DIF agrees with the statement in the Staff Working Paper that compulsory implementation of any API is not justifiable and is likely “to be hostile to future infrastructure investment ... and could also damage welfare by reducing choice.”