

**Media Content Distribution (MCD);
MCD framework;
Part 3: Regulatory issues, social needs and policy matters**



Reference

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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Media Content Distribution (MCD).

This is a multi-part deliverable identifiable by the same main number and a common part of the title. This set of partial deliverables (parts and sub-parts handled and published independently but treated in a coordinated form) builds a whole deliverable handling the subject identified by the common part of the title.

The common part of the title is Media Content Distribution framework.

Each part and sub-part of the present set of deliverables covers a specific subject specified in the corresponding scope and referred to in the specific part of the title. To each part and sub-part of the whole deliverable, a specific number attached to the common main number of the deliverable will also be assigned.

The present document, the only one providing an overview of regulatory issues, social needs and policy matters, is part 3 of the multi-part deliverable covering the Media Content Distribution framework, as identified in part 1 [i.28] of this multi-part deliverable.

For a rational maintenance and easy usage of the complete set of the documents, only part 1 of the set of the documents, will maintain an updated list of the documents in the series, all the other documents should refer to part 1 [i.28], working therefore as the central point of the series.

Introduction

In the context of MCD work, as explained in part 1 [i.28] of this series of documents, the collection of regulatory issues were early identified as a major step to proceed to the necessary analysis in this sector.

Regulatory issues, social needs and policy matters build a nucleus of central information for the majority of the market players to be aware of their environment and prevent to deploy services or to build equipment, which might be not appropriate to be offered on the market. It is therefore important to collect and list most relevant applicable regulatory ruling and sectoral policies and associate them whenever possible with the social needs associated to them.

This material is expected to be a central tool for the identification of MCD requirements and the specification of a roadmap for the standardization work to be developed.

1 Scope

The present document belongs to a multi-part deliverable proceeding to the widest possible coordinated study on the Media Content Distribution (MCD) matters with the primarily goal of identifying standardization needs not covered or not correctly covered at the present stage of development. This set of documents will cover at least the activities and areas better specified in part 1 of this set of documents.

The present document is part 3 of the multi-part deliverable and studies regulatory issues, social needs and policy matters falling within the wide scope of this set of documents.

The study to be undertaken will focus on Europe as much as possible but it will mention most relevant national applications or other important national measures, trying to understand the reasoning for them. Very important exceptions should be identified. At least in the first edition of the document an exhaustive listing of national specific and sometimes contradictory (among different countries) requirements is excluded.

The issues identified are not handled at the very last detail and the purpose of the document is rather to raise the awareness from the industry for the existing regulation and policy and from the regulating authorities for the industry views and difficulties to apply relevant policy and regulatory documents.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific.

- For a specific reference, subsequent revisions do not apply.
- Non-specific reference may be made only to a complete document or a part thereof and only in the following cases:
 - if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;
 - for informative references.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

Not applicable.

2.2 Informative references

The following referenced documents are not essential to the use of the present document but they assist the user with regard to a particular subject area. For non-specific references, the latest version of the referenced document (including any amendments) applies.

- [i.1] Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (R&TTE Directive).
- [i.2] Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive).
- [i.3] Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (Authorisation Directive).
- [i.4] Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive, (FwD)).
- [i.5] Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive, (USD)).
- [i.6] Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications).
- [i.7] Commission Directive 2002/77/EC of 16 September 2002 on competition in the markets for electronic communications networks and services.
- [i.8] Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC (EMC Directive).
- [i.9] Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (EMC Directive).

NOTE: Updated by [i.8].

- [i.10] Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision).
- [i.11] Regulation (EC) No 2887/2000 of the European Parliament and of the Council of 18 December 2000 on unbundled access to the local loop (ULL Regulation).
- [i.12] Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (Low Voltage Directive (LVD)).
- [i.13] Council Directive 73/23/EEC of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (Low Voltage Directive (LVD)).

NOTE: Updated by [i.12].

- [i.14] European Convention on Transfrontier Television, Strasbourg, 5.V.1989; Text amended according to the provisions of the Protocol (ETS No. 171) which entered into force, on 1 March 2002.

NOTE: The above convention is in an advanced phase of revision for alignment with AVMSD [i.15].

- [i.15] Directive 89/552/EEC of 3 October 1989 of the European Parliament and of the Council on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services (Audiovisual Media Services Directive).

NOTE: The above AVMSD [i.15] is the result of the Directive 89/552 [i.15] amended by Directive 97/36/EC of the European Parliament and of the Council of 30 June 1997 [i.17] and Directive 2007/65/EC of the European Parliament and of the Council of 11 December 2007 [i.16].

- [i.16] Directive 2007/65/EC of the European Parliament and of the Council of 11 December 2007 amending Council Directive 89/552/EEC on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the pursuit of television broadcasting activities.

NOTE: Amending Directive resulting in the AVMSD [i.15].

- [i.17] Directive 97/36/EC of the European Parliament and of the Council of 30 June 1997 amending Council Directive 89/552/EEC on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the pursuit of television broadcasting activities.

NOTE: Updated by [i.16].

- [i.18] Regulation (EC) No 2006/2004 of the European Parliament and of the Council of 27 October 2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws.

- [i.19] COMMISSION REGULATION (EC) No 107/2009 of 4 February 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for simple set-top boxes.

- [i.20] ETSI SR 002 211 (V1.1.1): "List of standards and/or specifications for electronic communications networks, services and associated facilities and services; in accordance with Article 17 of Directive 2002/21/EC".

- [i.21] ETSI SR 002 211 (V2.1.2): "Electronic communications networks and services; Candidate list of standards and/or specifications in accordance with Article 17 of Directive 2002/21/EC".

- [i.22] ETSI SR 002 586: "Electronic communications networks and services; Consequence on the NGN standardization activity from the EU ECN&S regulatory view point".

- [i.23] ETSI TR 102 299: "Emergency Communications; Collection of European Regulatory Texts and orientations".

- [i.24] ETSI EG 201 399: "Electromagnetic compatibility and Radio spectrum Matters (ERM); A guide to the production of candidate Harmonized Standards for application under the R&TTE Directive".

- [i.25] ETSI EG 201 450: "Guidance on the identification of Harmonized Standards and/or other technical specifications for Radio equipment and Telecommunications Terminal Equipment (R&TTE) covering requirements under article 3.1 of Directive 1999/5/EC".

- [i.26] ETSI EG 201 730-1 (V2.1.3): "Terminals' access to Public Telecommunications Networks; Application of the Directive 1999/5/EC (R&TTE), article 4.2; Guidelines for the publication of interface specifications; Part 1: General and common aspects".

- [i.27] ETSI TS 105 174: "Access and Terminals (AT); Relationship between installations, cabling and communications systems; Standardization work published and in development".

- [i.28] ETSI TR 102 688-1: "Media Content Distribution (MCD); MCD framework; Part 1: Overview of interest areas".

- [i.29] Council Decision 2006/515/EC of 18 May 2006 on the conclusion of the Convention on the Protection and Promotion of the Diversity of Cultural Expressions.

- [i.30] ETSI EN 300 468: "Digital Video Broadcasting (DVB); Specification for Service Information (SI) in DVB systems".

- [i.31] ETSI EN 300 743: "Digital Video Broadcasting (DVB); Subtitling systems".
- [i.32] ETSI EN 300 472: "Digital Video Broadcasting (DVB); Specification for conveying ITU-R System B Teletext in DVB bitstreams".
- [i.33] ETSI EN 300 706: "Enhanced Teletext specification".
- [i.34] ETSI TR 102 282: "Standardization Work Programme in support of digital interactive television and the effective implementation of article 18 of Directive 2002/21/EC".
- [i.35] ETSI TS 102 182: "Emergency Communications (EMTEL); Requirements for communications from authorities/organizations to individuals, groups or the general public during emergencies".
- [i.36] ETSI TR 102 444: "Emergency Communications (EMTEL); Analysis of the Short Message Service (SMS) and Cell Broadcast Service (CBS) for Emergency Messaging applications; Emergency Messaging; SMS and CBS".
- [i.37] ITU-T Recommendation Y.1901: "Requirements for the support of IPTV services".
- [i.38] ETSI EN 300 707: "Electronic Programme Guide (EPG); Protocol for a TV Guide using electronic data transmission".
- [i.39] ETSI TR 101 288: "Television systems; Code of practice for an Electronic Programme Guide (EPG)".
- [i.40] ISO/IEC Guide 71: "Guidelines for standards developers to address the needs of older persons and persons with disabilities".
- [i.41] ETSI EN 300 708: "Television systems; Data transmission within Teletext".
- [i.42] ETSI TR 100 287: "Television systems; Code of practice for enhanced Teletext".
- [i.43] EBU TECH.3264-E: "Specification of the EBU Subtitling data exchange format".
- [i.44] ETSI TS 102 825 (all parts): "Digital Video Broadcasting (DVB); Content Protection and Copy Management (DVB-CPCM)".
- [i.45] United Nations Convention on the Rights of Persons with Disabilities .
- [i.46] ITU-T Recommendation E.106: "International Emergency Preference Scheme for disaster relief operations (IEPS)".
- [i.47] ITU-T Recommendation H.460.21: "Message Broadcast for H.323 Systems".
- [i.48] ITU-T Recommendation J.260: "Requirements for Emergency/Disaster Communications over IP-Cablecom Networks".
- [i.49] ITU-T Recommendation J.261: "Framework for implementing preferential telecommunications in IP-Cablecom and IP-Cablecom2 networks".
- [i.50] ITU-T Recommendation J.262: "Specifications for authentication in preferential telecommunications over IP-Cablecom2 networks".
- [i.51] ITU-T Recommendation J.263: "Specification for priority in preferential telecommunications over IP-Cablecom2 networks".
- [i.52] Directive 2009/140/EC of the European Parliament and of the Council of 25 November 2009 amending Directives 2002/21/EC on a common regulatory framework for electronic communications networks and services, 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities, and 2002/20/EC on the authorisation of electronic communications networks and services.

- [i.53] Directive 2009/136/EC of the European Parliament and of the Council of 25 November 2009 amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services, Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector and Regulation (EC) No 2006/2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws.

NOTE 1: References [i.1], [i.8], [i.9], [i.10], [i.11], [i.12], [i.13], [i.22] and [i.23] might be considered out of scope of MCD as content distribution is increasingly independent from the underlying infrastructures. Nevertheless, to support the explanations of the document and facilitate the overall regulatory frame conditions of the converging telecom and broadcasting markets the references are kept.

NOTE 2: All EU legislation is available at: <http://eur-lex.europa.eu/en/index.htm>.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

audiovisual commercial communication: images with or without sound which are designed to promote, directly or indirectly, the goods, services or image of a natural or legal entity pursuing an economic activity

NOTE 1: Such images accompany or are included in a programme in return for payment or for similar consideration or for self-promotional purposes. Forms of audiovisual commercial communication include, inter alia, television advertising, sponsorship, teleshopping and product placement.

NOTE 2: This is based on AVMSD [i.15], Article 1 §2 (h).

AudioVisual Media Service (AVMS):

- a service as defined by Articles 49 and 50 of the Treaty which is under the editorial responsibility of a media service provider and the principal purpose of which is the provision of programmes in order to inform, entertain or educate, to the general public by electronic communications networks; and/or

NOTE 1: Within the meaning of Article 2(a) of Directive 2002/21/EC [i.4]. Such an audiovisual media service is either a television broadcast as defined in point (e) of this Article or an on-demand audiovisual media service as defined in point (g) of this Article.

- audiovisual commercial communication

NOTE 2: This is based on AVMSD [i.15], Article 1 §2 (a).

captions: provide a real-time on-screen transcript of the dialogue as well as any sound effects

NOTE 1: This service can be provided by means of either textual or graphical supplementary content. The captions and the dialogue are usually in the same language. The service is primarily to assist users having difficulty hearing the sound. Ideally, users may have some control over the position and size of the presentation. Different speakers are distinguished, usually by different colours.

NOTE 2: This is based on ITU-T Recommendation Y.1901 [i.37], section 3.2.4.

Content Provider (CP): generic designation for all those making available any kind of content where they have editorial responsibility or represent those with editorial responsibility

NOTE: In the context of AVMSD [i.15] the designation Content Provider (CP) is equivalent to Media Service Provider (MSP).

electronic communications network (ECN): transmission systems and where applicable, switching or routing equipment and other resources, including network elements which are not active, which permit the conveyance of signals by wire, radio, optical or other electromagnetic means, including satellite networks, fixed (circuit- and packet-switched, including Internet) and mobile terrestrial networks, electricity cable systems, to the extent that they are used for the purpose of transmitting signals, networks used for radio and television broadcasting, and cable television networks, irrespective of the type of information conveyed

NOTE: This is based on the FwD [i.4], Article 2, Definitions, (a) after amendment by the new Directive [i.52].

electronic communications service (ECS): service normally provided for remuneration which consists wholly or mainly in the conveyance of signals on electronic communications networks, **including telecommunications services and transmission services in networks used for broadcasting**, but exclude services providing, or exercising editorial control over, content transmitted using electronic communications networks and services; it does not include information society services, as defined in Article 1 of Directive 98/34/EC, which do not consist wholly or mainly in the conveyance of signals on electronic communications networks

NOTE: This is based on the FwD [i.4], Article 2, Definitions, (c).

Electronic Communications Service Provider (ECSP): those offering ECS; in the context of Media Content Distribution (MCD) means those that offer the contents available from Content Providers but do not have editorial interference on it

Media Service Provider (MSP): natural or legal person who has editorial responsibility for the choice of the audiovisual content of the audiovisual media service and determines the manner in which it is organised

NOTE: This is based on AVMSD [i.15], Article 1 §2 (d).

Network Termination Point (NTP): physical point at which a subscriber is provided with access to a public communications network; in the case of networks involving switching or routing, the NTP is identified by means of a specific network address, which may be linked to a subscriber number or name

NOTE 1: This is based on the new version of the FwD article 2(da), after amendment by the new Directive [i.52].

NOTE 2: In the R&TTE Directive [i.1] a NTP is a physical connection point at which a user is provided with access to public telecommunications network.

television broadcasting or television broadcast: (i.e. a linear audiovisual media service) audiovisual media service provided by a media service provider for simultaneous viewing of programmes on the basis of a programme schedule

NOTE: This is based on AVMSD [i.15], Article 1 §2 (e).

broadcaster: media service provider of television broadcasts

NOTE: This is based on AVMSD [i.15], Article 1 §2(f).

on-demand audiovisual media service: (i.e. a nonlinear audiovisual media service) audiovisual media service provided by a media service provider for the viewing of programmes at the moment chosen by the user and at his individual request on the basis of a catalogue of programmes selected by the media service provider

NOTE: This is based on AVMSD [i.15], Article 1 §2 (g).

IPTV: multimedia services such as television/video/ audio/text/graphics/data delivered over IP-based networks managed to support the required level of QoS/QoE, security, interactivity and reliability

NOTE: This is based on ITU-T Recommendation Y.1901 [i.37].

retransmission: signifies the fact of receiving and simultaneously transmitting, irrespective of the technical means employed, complete and unchanged television programme services, or important parts of such services, transmitted by broadcasters for reception by the general public

NOTE: This is based on the European Convention on Transfrontier Television [i.14], Article 2 (b).

transmission: initial emission by terrestrial transmitter, by cable, or by satellite of whatever nature, in encoded or unencoded form, of television programme services for reception by the general public

NOTE 1: It does not include communication services operating on individual demand.

NOTE 2: This is based on the European Convention on Transfrontier Television [i.14], Article 2 (a).

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AVMS	AudioVisual Media Services
AVMS-D	AudioVisual Media Services Directive 2007/65/EC

NOTE: See [i.16].

BCG	Broadband Content Guide
CA	Conditional Access
CAS	Conditional Access System
CI	Common Interface
CP	Content Provider
CPCM	Content Protection and Copy Management
CSA	Common Scrambling Algorithm
DRM	Digital Rights Management
DVB	Digital Video Broadcast (-C for Cable, -T for Terrestrial, -S for Satellite)
ECN	Electronic Communications Network
ECN&S	Electronic Communications Networks and Services
ECN&S-D	ECN&S Directives
ECS	Electronic Communications Service
ECSP	Electronic Communications Service Provider
EPG	Electronic Programme Guide
ESG	Electronic Service Guide
EU	European Union
FwD	Framework Directive 2002/21/EC

NOTE: See [i.4].

IDTV	Integrated Digital TV
IP	Internet Protocol
IPTV	Internet Protocol TeleVision

NOTE: Based on ITU definition, over managed networks.

ISG	Interactive Programme Guide
MCD	Media Content Distribution
MSP	Media Service Provider
NO	Network Operator
NTP	Network Termination Point
PoI	Point of Interconnection
R&TTE	Radio equipment and Telecommunications Terminal Equipment
R&TTE-D	R&TTE Directive 1999/5/EC

NOTE: See [i.1].

SP	Service Provider
STB	Set Top Box
TV	TeleVision
TVwF	TeleVision without Frontiers Directive 89/552/EEC

NOTE: See [i.15].

UN	United Nations
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USA	United States of America
USO	Universal Service Obligation
VoD	Video on Demand

4 General and common aspects

The present document aims the clarification of regulatory and policy frame conditions applicable in Europe based on the EU framing documents. References to similar conditions or documents from other regions or national specific may be done but will not be the focus of the document. The objective is to bring different views from different sectors of the industry and of the authorities together and facilitate a useful debate. Therefore the present document should rather offer overviews of relevant aspects than provide solutions.

To organize and develop the document and for an easier consultation, the following global graphic representation was considered (the same as in clause 4.2, figure 2 of TR 102 688-1 [i.28]).

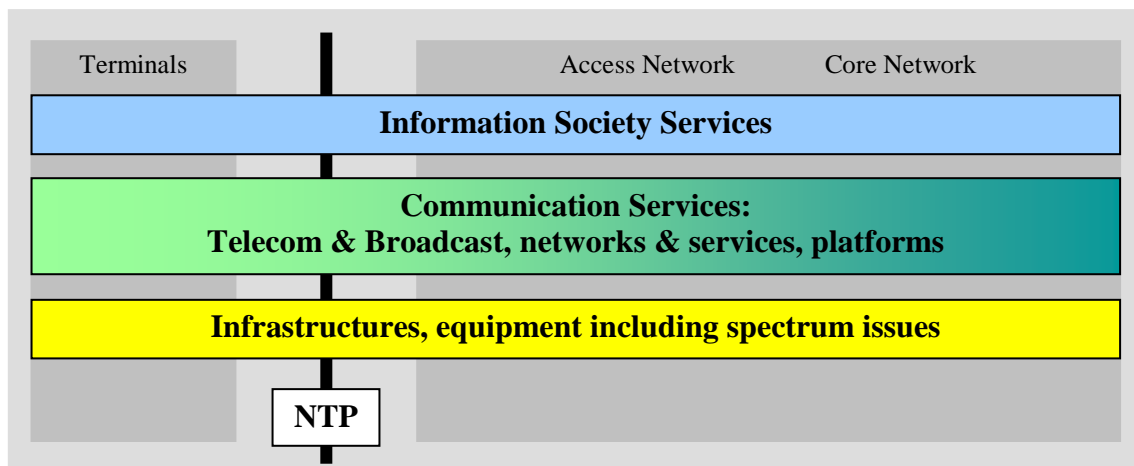


Figure 1: Reference graphic representation of communications systems areas

It should be noted that this representation corresponds widely to the 3 main regulatory frameworks identified in the clause 5 of the present document. It is nevertheless not the goal of the present document to establish borderlines among the represented areas and also not among the identified regulating documents.

5 Major regulatory frameworks

In Europe the most consistent and relevant regulation system applicable to the widest number of countries and population is the one adopted in the EU. All (27 in 2009) EU Member States must transpose into their national legislation the EU Directives. Other countries (3 candidate countries to the EU and 19 other European countries in 2009), depending on their agreements with the EU and their policy, adopt in general very similar rules. This results in a reasonable level of convergence of the regulatory framing conditions overall in Europe even if in some cases different specific implementation measures are applicable in the different countries.

With the intensification of the worldwide activity in the ICT sector some countries outside Europe are also following comparable frame conditions for their markets.

In Europe there are 3 main domains of regulation applying MCD communications:

- The AVMSD [i.15], handling the media policy and contents aspects; these aspects are mainly covered in clause 6.
- The ECN&S set of directives, where the FwD [i.4] is the main document, covering aspects of the communications services and networks; these aspects are mainly covered in clause 7.

- The R&TTE-D [i.1], covering aspects of safety (also covered by the LVD [i.12]), of electromagnetic compatibility (also covered by the EMCD [i.8]) and essential aspects of the radio spectrum on radio equipment. We may say that this directive covers mainly infrastructures and equipment aspects; these aspects are covered in clause 8.

Regularly updated generic information can be found on following ETSI website:

- <http://www.etsi.org/WebSite/AboutETSI/RoleinEurope/Publicpolicy.aspx>

6 TV without frontiers (TVwF-D) and the AudioVisual Media Services Directives (AVMS-D)

The Council of Europe has adopted the European Convention on Transfrontier Television [i.14], which is at present in an advanced phase of revision to be aligned with AVMSD [i.15]. The AVMSD [i.15] is the most relevant document in the EU establishing the frame legal principles in this area. European countries outside the EU tend to follow the same principles because many of them are bound by the above mentioned convention. These central documents establish a balanced compromise between a common ruling for Europe and the independence of cultural developments in the Member States as well as the preservation of cultural diversity in the Community.

AVMSD [i.15] resulted from the amendment of TVwF [i.15] by the amending Directives [i.16] and [i.17] and constitutes the regulatory basis for media regulation and policy in Europe. The document is difficult to consult because it is a list of changes introduced to earlier regulation. A helpful consolidated version is available on the EU web site; it is easier to consult but should not be used for formal purposes.

AVMSD [i.15] recognizes the challenge for the traditional broadcasting services introduced by the new electronic communications platforms. New services like VoD and new business models based on e.g. new interactive functionalities offered by the service providers changed in fact the traditional broadcasting market and may introduce undesirable market distortion effects and act against the initial objectives of ruling this sector. It was therefore decided to enlarge the initial 'TV without frontiers' treatment to cover in general the 'AVMS'.

The Protection and Promotion of the Diversity of Cultural Expressions is considered a central matter in this area and therefore AVMS is not seen not merely as a commercial subject but also as an essential component for the recognition of the plurality of the society identities, values and meanings. The Council Decision 2006/515/EC [i.29] approved the corresponding Unesco Convention which entered into force on 18 March 2007. This AVMSD [i.15] respects the principles of that Convention.

Further regularly updated information can be found on following address:

- http://ec.europa.eu/avpolicy/reg/avms/index_en.htm.

6.1 Scope and application

AVMSD [i.15] offers the regulatory basis for media regulation and policy in Europe and extends the scope from the traditional broadcasting services to all the areas of media distribution.

Relevant aspects of AVMSD [i.15] have to do with media policy content intrinsic matters like advertising, e.g. prohibiting television promotion of tobacco products or rules to protect the physical, mental and moral development of minors, i.e. have no particular direct impact in the content distribution services, which is the focus of the present study but may determine or suggest the introduction of special requirements like functionalities facilitating the parental control of the usage of the distributed contents.

6.2 Most relevant rules

6.2.1 Freedom of reception

AVMSD [i.15] art. 2a states that:

Member States shall ensure freedom of reception and shall not restrict retransmissions on their territory of audiovisual media services from other Member States for reasons which fall within the fields coordinated by this Directive.

In the same article 2a (§2) some exceptional conditions related to infringements (past or still existing) to the directive are listed and may justify a decision for a Member State to restrict the broadcasting of contents from other Member States. Further, in the same article 2a (§4), the exceptional conditions for Member States to restrict the distribution of contents over 'on demand services' are listed and they widely relate to aspects like public policy, protection of public health, public security and protection of consumers and investors.

6.2.2 Support people with disabilities

AVMSD [i.15] art. 3c states that:

Member States shall encourage media service providers under their jurisdiction to ensure that their services are gradually made accessible to people with a visual or hearing disability.

Subtitling video messages is in general considered a reasonable support for user with hearing disabilities. The overlapping of a video window with the sign language corresponding to the actors' messages is increasingly used by European broadcasters.

To associate to a video message an audio message describing the video information helps users with visual disabilities.

Further enhancements in this area are expected with increasing possibilities of new communications services.

6.2.3 Requirements on all services

Apart from the publication of their name, address and the easiest way to contact them, Content Providers ('audiovisual media services providers' in the context of the AVMSD [i.15]) shall respect the provisions of AVMSD [i.15], chapter IIa. These provisions require them, among other items:

NOTE 1: These citations are summarized, for the correct or detailed understanding of the rules the reference document AVMSD [i.15] will be studied.

- not to incite to hatred based on race, sex, religion or nationality (art.3b);
- to not transmit cinematographic works outside periods agreed with the rights holders (art.3d);
- audiovisual commercial communications shall:
 - be readily recognizable as such (art.3e §a);
 - not use subliminal techniques (art.3e §b);
 - respect human dignity (art.3e §c.i);
 - not include or promote any discrimination based on sex, racial or ethnic origin, nationality, religion or belief, disability, age or sexual orientation (art.3e §c.ii);
 - not encourage behaviour prejudicial to health, safety or the protection of the environment; (art.3e §c.iii and art.3e §c.iv);

- not offer support to:
 - cigarettes and other tobacco products, (art.3e §d);
 - alcoholic beverages aimed specifically at minors (art.3e §e);
 - immoderate consumption of such beverages (art.3e §e);
- respect States rules for medical products and medical treatment (art.3e §f);
- not cause physical or moral detriment to minors. Therefore they shall not (art.3e §g):
 - directly exhort minors to buy or hire a product or service by exploiting their inexperience or credulity (art.3e §g);
 - directly encourage them to persuade their parents or others to purchase the goods or services being advertised, exploit the special trust minors place in parents, teachers or other persons, or (art.3e §g);
 - unreasonably show minors in dangerous situations (art.3e §g).

NOTE 2: Protection of minors in TV broadcasting is ruled in further detail in Chapter V (art. 22) of the AVMSD [i.15].

Sponsored contents are submitted to rules similar to the 'commercial contents' set of rules and shall in no circumstances affect the responsibility and editorial independence of the Content Provider.

Product placement is prohibited except under limited rules specified in art. 3g of AVMSD [i.15]. Product placement is indeed permitted under certain conditions, Member States of EU are free to adopt stricter rules complying with EU law for AVMS under their jurisdiction.

It is important for ECSP (Electronic Communications Service Provider) to understand the existence of media ruling, since the easy combination of two information streams (easy to introduce in present systems) may lead to disrespect of some media policy rules or challenge de editorial responsibility of the content producer. If a ECSP, while distributing a contents, changes it by combining, adding or subtracting some parts, he may be consider a CP since he is assuming some editorial responsibility. In this case media contents legislation may apply; a simplified way of understanding the differences between a ECSP and a CP (or more specifically MSP under AVMSD [i.15]) is to compare the definitions of transmission and re-transmission as stated in the Convention [i.14]; it might be assumed that in principle the CP/ MSP transmits the information and has editorial liability and that the ECSP retransmits and has normally no editorial liability. If the ECSP intervenes at editorial level, he may be classified as a CP/ MSP as well.

6.2.4 Requirements on on-demand services

AVMSD [i.15], chapter IIb specify the framing regulation specific (and in addition to those referred to in the clause 6.2.3) for on-demand services which are summarized in this clause.

On-demand services which might seriously impair the physical, mental or moral development of minors are only made available in such a way that ensures that minors will not normally hear or see such on-demand AVMS.

CP should promote the production of and access to European contents. Such promotion could be made by including such content in the catalogue of programmes offered by the on-demand services. Member States may adopt different measures to achieve this goal.

6.2.5 Requirements on TV broadcasting

AVMSD [i.15], chapter IIc specifies the framing regulation specific (and in addition to those referred to in clause 6.2.3) for TV broadcasting services which are summarized in this clause.

The main requirement is not to allow broadcasters to distribute on an exclusive basis events which are regarded as being of major importance for society. The public in general should not be dependent from a single broadcaster to have the possibility of following such events by live or deferred coverage on free television. The national authority will draw up a list of designated events, national or non-national, which it considers to be of major importance for society.

AVMSD [i.15], art. 3k rules the access of broadcasters to events of high interest to the public for the purpose of short news reports. This access should be offered by the broadcaster having exclusivity rights and should be done in a fair, reasonable and non-discriminatory basis.

AVMSD [i.15], chapter III (art. 4 and 5) specifies a regime of minimal support to European works created by independent content producers. This aims an informational, educational, cultural and entertainment policy respecting the public needs.

AVMSD [i.15], chapter IV (art. 10... 20) establishes the rules for advertising and teleshopping and it also changes the rules on the limit of advertising quantity in a more flexible way. The same directive rules in chapter V the protection of minors and in chapter VI (art. 23) the right of reply.

6.2.6 Country of origin

The principle of the country of origin is a core concept of the TVwFD [i.15] and remains valid with AVMSD [i.15]. According to this rule, MSP are subject only to the rules applicable in their own country. The recital 27 of the TVwFD [i.15] states:

Whereas Member States, with due regard to Community law and in relation to broadcasts intended solely for the national territory which may not be received, directly or indirectly, in one or more Member States, must be able to lay down different conditions for the insertion of advertising and different limits for the volume of advertising in order to facilitate these particular broadcasts.

AVMSD [i.15] provides criterias to define jurisdiction of satellite services.

6.2.7 Self-regulation

The new directive AVMSD [i.15] also encourage the use of self-regulation and co-regulation e.g. on the following statement of Art. 3e, al. 2.

Member States and the Commission shall encourage media service providers to develop codes of conduct regarding inappropriate audiovisual commercial communication, accompanying or included in children's programmes, of foods and beverages containing nutrients and substances with a nutritional or physiological effect, in particular those such as fat, trans-fatty acids, salt/sodium and sugars, excessive intakes of which in the overall diet are not recommended.

6.3 Issues

The relative strict specification of the contents' rules may be of particular importance for ECSP based on new platforms offering innovative functionalities and not so familiar with media policy rules. ECSP retransmit the signal provided by CP/ MSP and according the definitions of transmission and retransmission in [i.14] (see clause 3.1) they should not change the editorial sense of the contents with the overlapping or combination of images or sound.

6.4 ETSI work

The main scope of this of AVMSD [i.15] is rather focused on media contents policy and therefore outside the ETSI activity, rather centred in communications systems and services. Nevertheless a number of communications facilities were designed to support media distribution and are prepared to respect rules applicable to MCD.

JTC Broadcast is in ETSI the closer body to this area and many services related to broadcast have their information available to the user on the base of EN 300 468 [i.30] (Specification for Service Information (SI) in DVB). Also the respect of IPR associated to the distributed contents are facilitated by standards like the series of TS 102 825 (parts 1 to 13) [i.44] (Content Protection and Copy Management, DVB-CPCM). In this area related to security of communication systems important work has been developed by the ETSI group OCG SEC and TISPAN.

In the context of support to people with auditive disabilities the following standards are available:

- EN 300 743 [i.31];
- EN 300 472 [i.32];
- EN 300 706 [i.33].

7 e-Communications Networks and Services Directives (ECN&S-D)

7.1 Scope and application

The basis for the ECN&S Regulatory Regime is through five major EU Communications Directives that are intended to converge and harmonize as appropriate the electronic communications regulation throughout the European community. These five Directives are:

- Directive 2002/21/EC [i.4];
- Directive 2002/20/EC [i.3];
- Directive 2002/19/EC [i.2];
- Directive 2002/22/EC [i.5];
- Directive 2002/58/EC [i.6].

In addition, there is a further Directive 2002/77/EC [i.7] on competition matters consolidating the existing "liberalization" Directives applicable to telecommunications.

There is also the unbundling of the local loop regulation [i.11] and other documents related to this nucleus of Directives. In this case NRAs may (or not) force a certain physical point to be used as NTP.

Finally, there is a Commission Decision on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision [i.9]), which establish a policy and legal framework in the Community in order to achieve the harmonization of the use of the radio spectrum. This may impact the technologies used to offer the end user access to Telecommunications Networks.

Further regularly updated information can be found on following addresses:

- http://ec.europa.eu/information_society/policy/ecomm/current/index_en.htm
- http://ec.europa.eu/information_society/policy/ecomm/index_en.htm

Recently EU published (see note 1) (new Directives [i.53] and [i.52]) amendments of the directives Framework (FwD) (2002/21/EC) [i.4], Access and Interconnection (2002/19/EC) [i.2], Authorisation (2002/20/EC) [i.3], Universal Service (2002/22/EC) [i.5] and Personal data/ protection of privacy (2002/58/EC) [i.6] as well as of the Regulation (EC) No 2006/2004 [i.18] on cooperation between national authorities responsible for the enforcement of consumer protection laws. The text of the new EU Directives ([i.53] and [i.52]) amending these documents includes some significant measures towards 'total communications for all'. The new versions also have stronger rules on user protection, including data protection, transparency and publication of information.

NOTE 1: http://ec.europa.eu/information_society/policy/ecomm/tomorrow/index_en.htm

NOTE 2: The text of the present document was initially based on the versions of regulatory documents in force by November 2009 and reviewed for update according recent publications. The new directives ([i.53] and [i.52]) are in the form of amendments and therefore need to be consulted together with the main documents.

7.2 Most relevant rules

7.2.1 Must Carry

Concerning "Must carry" obligations USD [i.5] states in article 31 (after amendment of directive [i.53]):

1. Member States may impose reasonable "must carry" obligations, for the transmission of specified radio and television broadcast channels and complementary services, particularly accessibility services to enable appropriate access for disabled end-users, on undertakings under their jurisdiction providing electronic communications networks used for the distribution of radio or television broadcast channels to the public where a significant number of end-users of such networks use them as their principal means to receive radio and television broadcast channels. Such obligations shall only be imposed where they are necessary to meet general interest objectives as clearly defined by each Member State and shall be proportionate and transparent.

The obligations referred to in the first subparagraph shall be reviewed by the Member States at the latest within one year of 25 May 2011, except where Member States have carried out such a review within the previous two years.

Member States shall review "must carry" obligations on a regular basis.

2. Neither paragraph 1 of this Article nor Article 3(2) of Directive 2002/19/EC (Access Directive) shall prejudice the ability of Member States to determine appropriate remuneration, if any, in respect of measures taken in accordance with this Article while ensuring that, in similar circumstances, there is no discrimination in the treatment of undertakings providing electronic communications networks. Where remuneration is provided for, Member States shall ensure that it is applied in a proportionate and transparent manner.

7.2.2 Interoperability

7.2.2.1 Services

Concerning interoperability of digital interactive television **services** the FwD [i.4] states in Article 18 (after amendment of directive [i.52]):

1. In order to promote the free flow of information, media pluralism and cultural diversity, Member States shall encourage, in accordance with the provisions of Article 17(2):

(a) providers of digital interactive television services for distribution to the public in the Community on digital interactive television platforms, regardless of the transmission mode, to use an open API;

(b) providers of all enhanced digital television equipment deployed for the reception of digital interactive television services on interactive digital television platforms to comply with an open API in accordance with the minimum requirements of the relevant standards or specifications.

(c) providers of digital TV services and equipment to cooperate in the provision of interoperable TV services for disabled end-users.

2. Without prejudice to Article 5(1)(b) of Directive 2002/19/EC (Access Directive), Member States shall 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 television services to provide all services supported by the API in a fully functional form.

Concerning interconnection and interoperability of **services** the Access Directive [i.4] states in Article 5 (after amendment of directive [i.52]):

Powers and responsibilities of the national regulatory authorities with regard to access and interconnection

1. National regulatory authorities shall, acting in pursuit of the objectives set out in Article 8 of Directive 2002/21/EC (Framework Directive), encourage and where appropriate ensure, in accordance with the provisions of this Directive, adequate access and interconnection, and the interoperability of services, exercising their responsibility in away that promotes efficiency, sustainable competition, efficient investment and innovation, and gives the maximum benefit to end-users.

In particular, without prejudice to measures that may be taken regarding undertakings with significant market power in accordance with Article 8, national regulatory authorities shall be able to impose:

(a) to the extent that is necessary to ensure end-to-end connectivity, obligations on undertakings that control access to end-users, including in justified cases the obligation to interconnect their networks where this is not already the case;

(b) to the extent that is necessary to ensure accessibility for end-users to digital radio and television broadcasting services specified by the Member State, obligations on operators to provide access to the other facilities referred to in Annex I, Part II on fair, reasonable and non-discriminatory terms

ab) in justified cases and to the extent that is necessary, the obligations on undertakings that control access to end-users to make their services interoperable.

2. Obligations and conditions imposed in accordance with paragraph 1 shall be objective, transparent, proportionate and non-discriminatory, and shall be implemented in accordance with the procedures referred to in Articles 6, 7 and 7a of Directive 2002/21/EC(Framework Directive).

3. With regard to access and interconnection referred to in paragraph 1, Member States shall ensure that the national regulatory authority is empowered to intervene at its own initiative where justified in order to secure the policy objectives of Article 8 of Directive 2002/21/EC(Framework Directive), in accordance with the provisions of this Directive and the procedures referred to in Articles 6 and 7, 20 and 21 of Directive 2002/21/EC (Framework Directive).

Concerning conditional access systems and other facilities the Access Directive [i.4] states in Article 6 (after amendment of directive [i.52], see also annex A.1 where the text of the Access Directive [i.4] Annex I is copied):

1. Member States shall ensure that, in relation to conditional access to digital television and radio services broadcast to viewers and listeners in the Community, irrespective of the means of transmission, the conditions laid down in Annex I, Part I apply.

2. In the light of market and technological developments, the Commission may adopt implementing measures to amend Annex I. The measures, designed to amend non-essential elements of this Directive, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 14(3).

3. Notwithstanding the provisions of paragraph 1, Member States may permit their national regulatory authority, as soon as possible after the entry into force of this Directive and periodically thereafter, to review the conditions applied in accordance with this Article, by undertaking a market analysis in accordance with the first paragraph of Article 16 of Directive 2002/21/EC (Framework Directive) to determine whether to maintain, amend or withdraw the conditions applied.

Where, as a result of this market analysis, a national regulatory authority finds that one or more operators do not have significant market power on the relevant market, it may amend or withdraw the conditions with respect to those operators, in accordance with the procedures referred to in Articles 6 and 7 of Directive 2002/21/EC (Framework Directive), only to the extent that:

(a) accessibility for end-users to radio and television broadcasts and broadcasting channels and services specified in accordance with Article 31 of Directive 2002/22/EC (Universal Service Directive) would not be adversely affected by such amendment or withdrawal, and

(b) the prospects for effective competition in the markets for:

(i) retail digital television and radio broadcasting services, and

(ii) conditional access systems and other associated facilities,

would not be adversely affected by such amendment or withdrawal.

An appropriate period of notice shall be given to parties affected by such amendment or withdrawal of conditions.

4. Conditions applied in accordance with this Article are without prejudice to the ability of Member States to impose obligations in relation to the presentational aspect of electronic programme guides and similar listing and navigation facilities.

Concerning *Obligation of transparency* the Access Directive [i.4] states in Article 9 (after amendment of directive [i.52]):

1. *National regulatory authorities may, in accordance with the provisions of Article 8, impose obligations for transparency in relation to interconnection and/or access, requiring operators to make public specified information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, including any conditions limiting access to and/or use of services and applications where such conditions are allowed by Member States in conformity with Community law, and prices."*;
2. *In particular where an operator has obligations of non-discrimination, national regulatory authorities may require that operator to publish a reference offer, which shall be sufficiently unbundled to ensure that undertakings are not required to pay for facilities which are not necessary for the service requested, giving a description of the relevant offerings broken down into components according to market needs, and the associated terms and conditions including prices. The national regulatory authority shall, inter alia, be able to impose changes to reference offers to give effect to obligations imposed under this Directive.*
3. *National regulatory authorities may specify the precise information to be made available, the level of detail required and the manner of publication.*
4. *Notwithstanding paragraph 3, where an operator has obligations under Article 12 concerning whole sale network infrastructure access, national regulatory authorities shall ensure the publication of a reference offer containing at least the elements set out in Annex II.*
5. *The Commission may adopt the necessary amendments to Annex II in order to adapt it to technological and market developments. The measures, designed to amend non-essential elements of this Directive, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 14(3). In implementing the provisions of this paragraph, the Commission may be assisted by BEREC.*

Concerning *publication of and access to information*, the Access Directive [i.4] states in Article 15 (no amendment in directive [i.52]):

1. *Member States shall ensure that the specific obligations imposed on undertakings under this Directive are published and that the specific product/service and geographical markets are identified. They shall ensure that up-to-date information, provided that the information is not confidential and, in particular, does not comprise business secrets, is made publicly available in a manner that guarantees all interested parties easy access to that information.*
- ...

7.2.2.2 Equipment

Concerning *Interoperability of consumer digital television equipment* the USD [i.5] states in article 24 and annex VI (after update of [i.53]).

- Member States shall ensure the interoperability of the consumer digital television equipment (the selected text up to this point is from article 24 and refers to the text of annex VI copied below)...*
- ...
1. *Common scrambling algorithm and free-to-air reception*
- All consumer equipment intended for the reception of conventional digital television signals (i.e. broadcasting via terrestrial, cable or satellite transmission which is primarily intended for fixed reception, such as DVB-T, DVB-C or DVB-S), for sale or rent or otherwise made available in the Community, capable of descrambling digital television signals, is to possess the capability to:*
- *allow the descrambling of such signals according to a common European scrambling algorithm as administered by a recognised European standards organisation, currently ETSI,—*
 - *display signals that have been transmitted in the clear provided that, in the event that such equipment is rented, the renter is in compliance with the relevant rental agreement.*

2. Interoperability for analogue and digital television sets

Any analogue television set with an integral screen of visible diagonal greater than 42 cm which is put on the market for sale or rent in the Community is to be fitted with at least one open interface socket, as standardised by a recognised European standards organisation, e.g. as given in the Cenelec EN 50 049-1:1997 standard, permitting simple connection of peripherals, especially additional decoders and digital receivers.

Any digital television set with an integral screen of visible diagonal greater than 30 cm which is put on the market for sale or rent in the Community is to be fitted with at least one open interface socket (either standardised by, or conforming to a standard adopted by, a recognised European standards organisation, or conforming to an industry-wide specification) e.g. the DVB common interface connector, permitting simple connection of peripherals, and able to pass all the elements of a digital television signal, including information relating to interactive and conditionally accessed services.

7.3 Issues

The relative quick and uncontrolled growth in number of users, traffic and performance of Internet contrasts with the high controlled development of traditional broadcasting and telecom world. Now that new functionalities associated to MCD are often launched on the market and that new technologies (FTTx, compression and coding techniques) offer nearly 'unlimited' transmission capabilities to the user and the performance difference between the managed and non-managed environment reduces dramatically, market players need to deeply reassess their business models.

Interoperability becomes probably a new dimension to content distributors traditionally centred in the broadcasting activity. From broadcasting a limited number of well known content providers, opening the door to internet or even to broadband networks with hybrid technologies will expose the traditional TV receiver to possibly contradictory and not controlled messages from different sources.

7.4 ETSI work

SR 002 211 (V1.1.1) [i.20], clause 4.2 presents an overview of the e-communications Directives and in clause 4.4 studies the relationship of them to the R&TTE Directive [i.1]. Even if in some details this deliverable may be not fully updated, for the purpose of an initial overview in this area of regulation it can still be considered a very helpful analysis and a good source of information.

SR 002 211 (V2.1.2) [i.21] makes a more pragmatical approach proposing a very limited list of standards to be recommended by the authorities for the industry to apply.

SR 002 586 [i.22] studies the '*consequence on the NGN standardization activity from the EU ECN&S regulatory view point*' and offers a very helpful analysis on how to apply this legislation to the NGN concepts mainly as they are developed by TISPAN and 3GPP.

TR 102 299 [i.23] collects European regulatory information in Emergency Communications.

In the areas of broadcasting oriented systems and Internet based networks and services and in general in the MCD sector there is no particular discussion or guidance in the regulatory related subjects published by ETSI. It is the intension of the present document to initiate these discussions.

TR 102 282 [i.34], Standardization Work Programme in support of digital interactive television and the effective implementation of article 18 of Directive 2002/21/EC [i.4], reflects JTC Broadcast answer to the EU Commission mandate M/331 in this context.

8 Radio and Telecommunications Terminal Equipment Directive (R&TTE)

The R&TTE Directive [i.1] is not the main focus of TC-MCD work as this Directive addresses primarily placing on the market of Radio and Telecommunications equipment with focus on essential requirements for apparatus; this directive has mainly to do with physical layers and infrastructures aspects. Nevertheless the requirement (art. 4.2 of the R&TTE Directive [i.1]) to network access providers requiring from them the publication of the detailed characteristics of the interface offered to the users, may be important for the correct interoperation between terminals and networks. This is discussed in the clauses 8.2.2 and 8.4.

8.1 Scope and application

In simplistic terms, the R&TTE Directive [i.1] covers in its scope (up to some exceptions) all radio equipment and all telecommunications terminal equipment. It specifies the mechanisms to place on the market and to put into service these types of equipment. It also rules the radio interfaces (articles 4.1 and 5) and the way for communications services and network providers to describe the interfaces they offer to the public for connection of the terminals supporting the services they provide (article 4.2 of the R&TTE Directive [i.1]).

One of the exceptions identified by this directive for its scope (Annex 1 of the of the R&TTE Directive [i.1]) is:

- Radio receivers for broadcast services.

This exception may disappear with the future evolution determined by the convergence; this exception relates only to a minority of terminal devices supporting MCD systems and therefore will not be related to multimedia terminals such as advanced, hybrid STBs with IP-connectivity beside classical Broadcast interfaces.

Further regularly updated information can be found on following addresses:

- <http://www.etsi.org/WebSite/Technologies/rtte.aspx>;
- http://ec.europa.eu/enterprise/rtte/index_en.htm.

8.2 Most relevant rules

8.2.1 Essential requirements

The R&TTE Directive [i.1], article 3 states:

1. The following essential requirements are applicable to all apparatus:

(a) the protection of the health and the safety of the user and any other person, including the objectives with respect to safety requirements contained in Directive 73/23/EEC, but with no voltage limit applying;

(b) the protection requirements with respect to electromagnetic compatibility contained in Directive 89/336/EEC.

2. In addition, radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communication and orbital resources so as to avoid harmful interference.

3. In accordance with the procedure laid down in Article 15, the Commission may decide that apparatus within certain equipment classes or apparatus of particular types shall be so constructed that:

(a) it interworks via networks with other apparatus and that it can be connected to interfaces of the appropriate type throughout the Community; and/or that

(b) it does not harm the network or its functioning nor misuse network resources, thereby causing an unacceptable degradation of service; and/or that

(c) it incorporates safeguards to ensure that the personal data and privacy of the user and of the subscriber are protected; and/or that

(d) it supports certain features ensuring avoidance of fraud; and/or that

(e) it supports certain features ensuring access to emergency services; and/or that

(f) it supports certain features in order to facilitate its use by users with a disability.

Summarising it can be said that the most general essential requirements are related with safety and emc effects (article 3.1 of the R&TTE [i.1]) and for radio equipment with the appropriate usage of the spectrum (article 3.2 of the R&TTE [i.1]), which is widely specified in Harmonized Standards, many of them published by ETSI. Article 3.3 is rarely applied since the associated procedure did not lead, excluding some exceptions, to decisions requiring the application of the alinea of the requirement. One exception related to article 3.3 e (emergency) is cited in TR 102 299 [i.23].

The essential requirements and the applicable standards of the Low Voltage [i.12] and EMC [i.8] Directives apply to all types of equipment and go beyond communications networks and terminals. Somehow, the two first essential requirements of the R&TTE Directive [i.1] are similar to the requirements of the Low Voltage [i.12] and EMC [i.8] Directives.

NOTE: In fact Low Voltage [i.12] and EMC [i.8] Directives do not apply to equipment under R&TTE-D [i.1], but the essential requirements and the applicable standards are often the same.

8.2.2 Publication of the interfaces offered to the public (NTP)

The R&TTE Directive [i.1], article 4.2 states:

"...Member States shall ensure that such operators publish accurate and adequate technical specifications of such interfaces before services provided through those interfaces are made publicly available, and regularly publish any updated specifications. The specifications shall be in sufficient detail to permit the design of telecommunications terminal equipment capable of utilizing all services provided through the corresponding interface. The specifications shall include, inter alia, all the information necessary to allow manufacturers to carry out, at their choice, the relevant tests for the essential requirements applicable to the telecommunications terminal equipment. Member States shall ensure that those specifications are made readily available by the operators."

8.3 Issues

The spectrum management has been always a delicate issue. With the new technologies the usage spectrum became more effective. With Internet based TV and IPTV new platforms have been introduced. Mobile communications users request often performances comparable to those they obtain from fix network connections. The 'digital dividend' obtained from the enhanced spectrum management is a central issue in discussion at present with telecom operators wishing to seize ranges of the spectrum formally used for broadcasting services.

New generation terminal devices are strongly dependent from service and applications layers protocols and not all SP and NO publish their publicly offered interface (NTP) according to the requirements cited in clause 8.2.2. Since there is at present an increasing level of competition in telecom at network and service provision level, it can be discussed on how could the R&TTE Directive [i.1], article 4.2 be interpreted or in the future even reformulated in an updated form.

8.4 ETSI work

The large majority of the ETSI work in this regulatory area is related to the production and maintenance of Harmonized Standards, which when recognized and published by the EU authorities, facilitate the presumption of conformity of R&TTE to the essential requirements of the R&TTE-D [i.1]. There is a large number of such Harmonize Standards available through both ETSI or the EU web pages cited in clause 8.

EG 201 399 is a guide for experts to the produce candidate Harmonized Standards for application under the R&TTE-D [i.1].

EG 201 450 [i.25] guides on finding standardization work in support of (safety) requirements under article 3.1 of the R&TTE-D [i.1].

Infrastructures might in general be considered not a major issue in the scope of MCD as content distribution is increasingly independent from the underlying infrastructures. Nevertheless, equipment of central importance like radio base stations for broadcast and for telecommunication systems need to fulfil the essential requirements of the appropriate harmonized standards. Also the issues on digital dividend and the change of the assignment of some areas of the spectrum from one type of application to the other are essentially infrastructure matters. Due to these reasons an overview of the existing main documents ruling infrastructures was judged convenient.

In addition to infrastructures aspects interworking between access networks and terminal devices (including home systems) is indirectly treated by the art. 4.2 of the R&TTE directive [i.1]. Network access providers are, in this context, requested to publish the detailed characteristics of the interface offered to their users.

At present there is a tendency by some access network providers to offer system specific solutions for the users' interfaces. This may be seen by some NRA as a bundling technic between network and service offers and in the case of significant market power, as a challenge to the good application of the competition principles. Normally these problems may be solved by an appropriate choice of the Network Termination Point (NTP).

EG 201 730-1 [i.26] studies the application of the requirement for the publication of the telecommunications interfaces offered to the public.

9 Special measures and social needs associated with regulatory framework

9.1 EU policies

The EU sets also new programmes and policies dealing with content. Two Communications are cited below as an example. They have no legal significance such as a directive or a regulation, but it could be interesting for the reader as well since they show the intention of policy makers:

- The Communication on Content online, dealing with the distribution of content in the digital environment and address copyrights issues.

NOTE 1: See http://ec.europa.eu/avpolicy/other_actions/content_online/index_en.htm.

- EU activities on E-inclusion and the Communication "European i2010 initiative on e-Inclusion - to be part of the information society".

NOTE 2: See

http://ec.europa.eu/information_society/activities/einclusion/policy/accessibility/com_2008/index_en.htm

In the context of the [European i2010 initiative on e-Inclusion](#) it is considered that (see note 3) *"To be part of the Information Society", includes an active strategy to improve accessibility to the Information Society for all potentially disadvantaged groups. In order to bridge the eAccessibility gap, the Communication calls on:*

- *The ICT industry to work to help disabled people access digital TV and electronic communications products;*
- *Industry and consumers to work closely with European standardisation bodies, especially in the area of procurement of accessible ICT products and services for public-sector bodies; and*
- *Member States to work harder to address eAccessibility issues in the context of existing EU legislation, and to agree a plan of action by mid-2008 to ensure public websites are fully accessible.*

NOTE 3: See information on

http://ec.europa.eu/information_society/activities/einclusion/policy/accessibility/index_en.htm

NOTE 4: An important source of information on European media policy and MCD market development is the European Audiovisual Observatory (see e.g. http://www.obs.coe.int/about/oea/pr/mavise_end2009.html).

NOTE 5: Another area where important changes occur is the spectrum management. In this context the EU web pages:

- on the Radio Spectrum Policy:
http://ec.europa.eu/information_society/policy/ecom/radio_spectrum/index_en.htm
- on the R&TTE:
http://ec.europa.eu/enterprise/sectors/rtte/index_en.htm are very helpful.

Recently (beginning of 2010) some discussions on the transfer of the 'digital dividend' to the 'Telecom sector' is discussed (including the impact on CATV distribution); 'digital dividend' is the radio spectrum availability obtained from the switching over from analogue to digital broadcasting transmission.

9.2 Power limitation for broadband terminals and for TV receivers

European authorities are having an increasing concern on environmental aspects and particularly in power consumption domain. A number of 'Codes of Conduct' have been produced and information is regularly updated on the web.

NOTE 1: See http://re.jrc.ec.europa.eu/energyefficiency/html/standby_initiative.htm.

At the present the following 'Codes of Conduct' are published:

- Code of Conduct for Data Centres.
- Code of Conduct for Digital TV Services.
- Code of Conduct on Energy Consumption of Broadband Communication Equipment.
- Code of Conduct on Efficiency of External Power Supplies.
- Code of Conduct on AC Uninterruptible Power Systems (UPS).

Further to this Guiding documents with very specific recommended measures a recent COMMISSION REGULATION (EC) No 107/2009 of 4 February 2009 [i.19] applicable to simple set-top boxes in the EU countries was published. Further information on regulation activity in this area can be obtained from the web.

NOTE 2: See http://ec.europa.eu/enterprise/eco_design/dir2005-32.htm.

The EU maintains a 'eco-design' web page offering guidance in different areas.

NOTE 3: See http://ec.europa.eu/energy/efficiency/ecodesign/legislation_en.htm.

ETSI (e.g. EE and ATTM) is taking part on the discussions in order to contribute to a rapid and effective evolution to lower level of consumption per user without disturbing the healthy expansion of communication systems. Since MCD is normally associated to broadband communications it is important for the industry in this sector to be active in these discussions.

ETSI ATTM is publishing a series of specifications TS 105 174 [i.27] building initial help for the industry to align their products to the EU policy and regulation.

ITU also established a strategy for 'climate change' (see note 4). Particularly in IPTV domain, which is specially relevant for MCD, ITU-T is elaborating at present (drafting phase) a recommendation on the coordination of powered devices designated as HSTP.IPTV-TDPower (see note 5) "Terminal device power management"; for completion in 2010.

NOTE 4: See <http://www.itu.int/themes/climate/>.

NOTE 5: See http://www.itu.int/ITU-T/workprog/wp_search.aspx?isn_sp=545&isn_sg=554&isn_task=7396.

9.3 Emergency situations and alarming population

MCD systems may have an important role to play in the domain of supporting the distribution of appropriate messages in emergency situations.

In some countries there are particular legal provisions where content providers and content distributors are obliged to transmit specific emergency messages in case of very particular situations. This distribution is often expected to be restricted to the regions affected; emergency messages distributed outside the aimed region or by inappropriate supports may have negative effects.

It is necessary to understand the national emergency concept in each country to define and deploy the most appropriate supportive MCD system. ETSI EMTEL studied these matters in the wide scope of communications and has published a number of important documents in this domain. A general survey on EMTEL publications may be useful but for MCD aspects the following documents are recommended:

- TR 102 299 [i.23];
- TS 102 182 [i.35];
- TR 102 444 [i.36].

ITU has a wide range of activities (see note 1) linked to emergency situations. ITU-T coordinates their own activities and published an important number of recommendations under the designation Telecommunications for Disaster Relief and Mitigation (TDR) (see note 2). ITU-R is also active in this domain (see note 3).

NOTE 1: See <http://www.itu.int/emergencytelecoms/index.html>.

NOTE 2: See further information on <http://www.itu.int/ITU-T/special-projects/pcptdr/>.

NOTE 3: See information on <http://www.itu.int/ITU-R/index.asp?category=information&link=emergency>.

The ITU-T aims to develop Recommendations that describe and define a telecommunication capability that will facilitate the use of public telecommunication services and systems by authorities for communications during emergency, disaster relief and mitigation operations. This capability, referred to as the emergency telecommunications service (ETS), will enable authorized users organizing and coordinating disaster relief operations to have preferential treatment for their communications via the Public Telecommunications networks. Preferential treatment is particularly important because during disaster events public telecommunication networks often experience infrastructure damage, which combined with high traffic demands causes severe congestion and overload situations.

An important achievement by ITU-T Study Group 2 in the field of Telecommunication for Disaster Relief was the March 2000 approval of ITU-T Recommendation E.106 [i.46], *"International Emergency Preference Scheme (IEPS) for disaster relief operations"*. The Recommendation, updated in October 2003, describes a scheme for the use of public telecommunications by national authorities in emergency and disaster relief operations. The IEPS is needed when there is a crisis situation causing an increased demand for telecommunications when use of the International Telephone Service may be restricted due to damage, reduced capacity, congestion or faults. In crisis situations there is a requirement for IEPS users of public telecommunications to have preferential treatment.

The most relevant recommendations in this context are:

- ITU-T Recommendation E.106 [i.46];
- ITU-T Recommendation H.460.21 [i.47];
- ITU-T Recommendation J.260 [i.48];
- ITU-T Recommendation J.261 [i.49];
- ITU-T Recommendation J.262 [i.50];
- ITU-T Recommendation J.263 [i.51].

As an example of recognition of the need to adapt emergency and alarm situations to the real situation in each country, ITU-T Recommendation Y.1901 [i.37] states in section 6.7.2 (Emergency telecommunications and regulatory information services, architecture requirements, R6.7.2-01): *the IPTV architecture is required to support emergency alert service where required by regulation or law of the country*.

9.4 Must-Carry rules

Must-carry rules are typically measures in support of the independence of cultural developments in the Member States as well as the preservation of cultural diversity in the Community. The essential concept is to protect some national relevant identity values and the rights of minorities, e.g. speaking less used languages or attached to some particular cultural values. Some European TV programs are often also included in the 'must-carry packet'.

The principles of ruling must-carry are referred to in clause 7.2.1. Often the application of the must carry rules are associated with quality requirements, regional limitations and the association to EPG and other broadcast related functionalities.

9.5 Licensing Content Providers for national or regional broadcasting

To ensure that regional, local or national contents of particular importance are distributed in the relevant regions, the media authorities may specify a licensing regime, including specifications and conditions for content distribution.

However this licensing regime being mainly a media policy issue, some requirements like regional limitations, quality of the service or services associated to the content distribution may imply particular conditions for the communication services supporting the distribution of such contents.

9.6 Often mandatory broadcasted TV additional services

Many of the services treated in the present clause aim to protect the legitimate rights of users with special needs and user protection aspects, particularly encouraging transparent information to be available for the consumer.

It should be noted that the scope of the FwD [i.4] was extended by the new amending directive [i.52] and additional provisions introduced in the ECN&S-D to facilitate the access for disabled users to electronic communications services, electronic communications networks, associated facilities and associated services.

9.6.1 EPG, BCG, ESG and comparable services (enhance text)

EPG is a well standardized facility allowing the user to have a simultaneous overview of the time table of different TV programs. It facilitates the users choice to select from each TV channel the most interesting contents. The basic EPG standard is EN 300 707 [i.38] and TR 101 288 [i.39] establishes a helpful code of practice for it.

Some authorities in Europe require from communications services providers the support for these facilities and from content providers under some circumstances the data required for this service to be provided to the users. This is supposed to facilitate a more transparent market for the user.

Based on the good experience and success of EPG, the technological evolution offering MCD new platforms to be used beyond the traditional broadcasting systems and with the increasing combination of the MCD with other services, a number of comparable type of services have been standardized. This may be considered the case of BCG (Broadband Content Guide), ISG (Interactive Programme Guide) or the ESG (Electronic Service Guide).

All these services have the main goal of enhancing the user information about the offers available. This transparency is in general welcomed and promoted by the administrations' policies and regulatory measures and beneficiates users and service providers.

9.6.2 e.accessibility and services for users with special needs

The United Nations Convention on the Rights of Persons with Disabilities [i.45] is the most relevant document at a global level (see note 1). The USA, the EU countries and many more are at different stages of its adoption (signature, ratification) (see note 2).

NOTE 1: The general UN page for disabilities is <http://www.un.org/disabilities/>.

NOTE 2: See details on the list of countries at <http://www.un.org/disabilities/countries.asp?navid=12&pid=166>.

ITU (particularly ITU-T SG2 and SG 16) is working in this area (see note 3). Also ISO/IEC Guide 71 [i.40] offers guidance for standardization experts when addressing the needs of older persons and persons with disabilities.

EU has established e.accessibility (see note 4) and e.inclusion (see note 5) as major policy priorities. The aim is to enhance the access to communications services (including digital TV, see clause 9.1) for all citizens, particularly those limited by some sort of impairment, who often see their rights reduced by the fact that the industry guides repeatedly their developments for the majority of the population, not necessarily for particular cases. These policy programs, even if they cover a more generic area, promote solutions based on ICT technologies facilitating a wider range of services (including MCD areas) for all.

NOTE 3: See details on <http://www.itu.int/themes/accessibility/> or <http://www.itu.int/ITU-T/worksem/accessibility/200911/>.

NOTE 4: See http://ec.europa.eu/information_society/activities/einclusion/policy/accessibility/index_en.htm.

NOTE 5: See http://ec.europa.eu/information_society/activities/einclusion/index_en.htm.

The new trend is to cover 'total communications for all', meaning synchronized real time bidirectional audio/ video/ text offered as a part of the USO. The project 'reach 112' (see note 6) covers aspects related to emergency services in this context. This may imply with current technologies at least an access of approximately 1 Mbps for both up- and downstream real time communications (not only data access to internet) and should therefore facilitate even more the usage of infrastructures for the purpose of MCD.

NOTE 6: See <http://www.reach112.eu/view/en/index.html>.

A recent EU Council adopted (see note 7) the amendments of the directives Universal Service (2002/22/EC) [i.5] and Personal data/ protection of privacy (2002/58/EC) [i.6] as well as of the Regulation (EC) No 2006/2004 [i.18] on cooperation between national authorities responsible for the enforcement of consumer protection laws. The text of the new EU Directive amending these documents can be found on the web (see note 8) and includes some significant measures towards 'total communications for all'.

NOTE 7: See public announcement on http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/gena/110776.pdf.

NOTE 8: See the decision on <http://register.consilium.europa.eu/pdf/en/09/st03/st03674.en09.pdf>.

In ETSI the most active bodies in this area (see note 9) are TC HF and the User Group. TC HF regularly produces standardization work under the mandate of the EU Commission. In the specific area of MCD some functions associated to traditional broadcast like subtitling have been standardized by JTC Broadcast.

NOTE 9: See <http://www.etsi.org/website/Technologies/Accessibility.aspx> or more general <http://www.etsi.org/website/homepage.aspx>.

9.6.3 Multiple audio channels for the same video transmission

Offering several audio channels for the same video content allow some particular contents to be accessible to a wider range of population. This is particularly important for societies where multicultural environment is the most relevant and to respect the rights of information for the linguistic minorities. With an increasing dynamic behaviour of the population, e.g. business and migration effects, this item is becoming a more important facility.

These functions are required by some authorities, often in the context of limiting the impairment associated to the reduced knowledge of the original audio language. The requirements may apply to some content providers and are often considered a relevant part of the content to be distributed by communications service providers.

This feature may be used to provide audio description of images and facilitate the understanding of video contents for blind users. It may also be used in more sophisticated offers, e.g. to feed stereo installations, which are not necessarily associated to policy or regulatory measures.

9.6.4 Subtitling

Subtitling is a particular important feature for users with hearing difficulties. This may be implemented with the help of a teletext specific page or with the specific function standardized by DVB. The synchronization between the text, the image and the sound is an important feature to facilitate appropriate quality for the service.

Subtitling functions are required by some authorities, often in the context of support to impaired users. The requirements may apply to some content providers and are often considered a relevant part of the content to be distributed by communications service providers.

EBU published in TECH 3264-E [i.43] its subtitling data exchange format and ETSI specified in EN 300 743 [i.31] the subtitling systems.

9.6.5 Teletext

Teletext functions are required by some authorities, often in the context of support to information associated to the contents being distributed. The requirements may apply to some content providers and are often considered a relevant part of the content to be distributed by communications service providers.

With the development of multiplay offers and the 'unlimited' information available on the internet, the relative importance of teletext may be reduced or otherwise understood. It is possible that some authorities consider the requirement on teletext satisfied if an appropriate service based on Internet data is offered to the user.

The most important ETSI activity in this area is undertaken by JTC Broadcast and the most relevant standards are EN 300 706 [i.33] and EN 300 708 [i.41]. TR 100 287 [i.42] establishes an useful code of practice for enhanced Teletext.

9.6.6 Descriptive Audio

This function may be implemented to provide audio description of the images and therefore facilitate the understanding of video contents for blind users.

In the context of support of people suffering visual impairments, this function may be required in special cases from authorities.

9.6.7 Closed/Open Captions

The standard definition of caption, according to ITU-T Recommendation Y.1901 [i.37], is offered on clause 3.1. Captions are commonly understood (see note) as *on-screen text descriptions that display a video product's dialogue, identify speakers, and describe other relevant sounds that are otherwise inaccessible to people who are deaf or hard of hearing. Captions are synchronized with the video image so that viewers have equivalent access to the content that is originally presented in sound, regardless of whether they receive that content via audio or text.*

NOTE: See <http://www.washington.edu/accessit/articles?1050>.

Captions to be active permanently, independently from user's control, are open captions, they are for the public in general. If captions may be turned on and off by the viewer they are classified closed captions.

Captions correspond, from the consumer point of view, to the subtitling functions offered in association to the traditional broadcasting systems.

With an increasing importance offered by the authorities to areas like e.accessibility (see clause 9.6.2) it may be expected that some measures (mandatory or promotional) may be decided to increasingly make available captions associated to different communications services. One of the first examples might be related to clause 9.3.

9.7 Rights to distribute and to consume contents

As explained in clause 6.2.1 legislation recognizes in general the right of the citizens of the freedom of reception of audiovisual media contents and of service providers to retransmit audiovisual media services.

In general rights and obligations for content distribution are based on AVMSD [i.15] as well as USD [i.5] (see chapter 6 and clause 7.2.1). Concerning interoperability associated to CA/DRM systems, USD [i.5], article 24 and annex VI, refers to the use of a Common Scrambling Algorithm (CSA), which applies to classical Broadcasting systems (DVB-C, -S, -T).

Associated with the distribution of content are, beside the eventual transmission scrambling initially developed to protect content ownership and rights to distribute, the rights for consuming content, depending on e.g. regional aspects (country, region or local), authorization aspects linked to parental survey of children or to the subscription of a contract (rights to view, consume, store content).

Controlled access to content based on DRM generally applies to VoD as well as premium Linear TV content, e.g. World championship, Hollywood Blockbusters, Adult TV or selected HD/HD+. DRM systems normally are based on the control of the distribution associated to the interactivity between distributing centre and the terminal installation, while CAS apply rather to the transport of the contents and assumes that the terminal with the appropriate key to correctly receive the content.

Conditional Access Systems (CAS), based on the Common Scrambling Algorithm (CSA), have been introduced in the classical Broadcasting world (DVB-C, -S) for many years. With the evolution of IPTV additional technologies, based on DRM systems, take advantage of the bidirectional characteristics of IPTV control protocols. In parallel to these developments, DVB has made efforts to develop a Content Protection Copy Management (CPCM), specifically addressing needs in a home network environment.

As CA/DRM technologies, especially in deployed IPTV systems, have led to proprietary solutions, Media Content Distribution with support of convergence and interoperability seems an urgent need; also taking into account Internet/Web-TV and mobile TV.

It should be taken into account the statements concerning *Conditional access systems and other facilities* in the Access Directive [i.4], in Article 6, as it is referred in clause 7.2.2.1. Discussions in clause 9.9 may help in this domain.

9.8 Parental control

The concerns about not causing physical or moral detriment to minors expressed in the AVMSD [i.15] and explained in clause 6 of the present document justify, when appropriate, the usage of functions associated to MCD systems and devices whereby parents can exercise the required control on the distribution.

This may be seen as a particular feature of CPCM and similar systems but care should be taken since the eventual requirements that the authorities may have on this domain do not necessarily justify a complex and expensive system of rights management.

9.9 Interoperability Requirements and Consequences for MCD

Clause 7.2.2. discusses basic requirements for interoperability. However technical solutions in Broadcast environment (DVB-C/C2, -S/S2, -T/T2), IPTV, WEB-TV as well as Mobile TV were rapidly developed and have been built upon different technical platforms leading to a widely fragmented market.

Technical platforms are often independent and likely to have differences implying interoperation difficulties and leading to a widely fragmented market with risks of quality impairments. This may lead to many possible interconnection agreements of different types requiring special attention since, in opposition to nowadays common multiple IP networks, the traditional broadcasting systems were very much based in single, well-controlled distribution networks. This major change causes difficulties on the MCD market.

Several obstacles for interoperability have been identified, e.g. associated to Audio/Video Codecs, Middleware, Signalling Protocols and CA/DRM-Systems, and are determined by the multitude of solutions and interfaces. This may cause insufficient interoperability and even lead to non-compliance with established rules.

9.9.1 Interoperability Constraints for Market Players

Proprietary solutions as well as parallel existing protocols and technologies are obviously major impairments for content providers to distribute their content to a widebroad community of end-users independently of access technologies and technical platforms.

A fragmented world market makes it difficult for consumer electronics suppliers to reach economy of scale due to the need of adaptation for different access networks; this is the case of IDTV terminals (sets integrating TVdisplay and STB) where some users are forced to purchase from their SP a system specific STB having already a standard one included in their TV terminal. IDTV sets and most recent STB are in general prepared to interoperate in different environments but the solution for this extended interoperability resulted in extra cost due to the integration of special interfaces (e.g. CI+).

The above mentioned difficulties with system specific TV distribution is common to some other services. End users are therefore facing difficulties with different and often proprietary technical solutions when connected to system specific platforms (of a network operator or service provider), making it impossible to use:

- "off-the-shelf" (lower cost) terminal equipment; and/or
- having access to different platforms or content sources with the same terminal device.

On the other side, future Next Generation Networks (NGN) will offer the end-user a huge variety of horizontal layered applications and services, from which e.g. IPTV is being considered by ITU-T and ETSI as a key business case, with content distribution via several access networks to the home network. Considering seamless communications across different terminal devices, including those with nomadic and mobile characteristics, it appears more than realistic, that convergence in media content distribution will play a vital role in finding future-proof interoperable solutions.

If future solutions are fully interoperable or there is room for system specific solutions is questionable. There is a need for each provider to finance their own costs and this will be charged directly or indirectly to the client. System specific solutions may facilitate the client identification but create other problems, as discussed above. New solutions coming to the market are improving the situation by offering solutions for some of the identified problems. How far future solutions will be based on gateway-specific or terminal-specific solutions may be subject to further investigation in TC-MCD and other bodies.

9.9.2 Views / Guidance on Interoperability

Experts in general say that standards are essential for the rollout of new technologies. This applies to global new MCD services deployment. A first generation of new MCD services, particularly IPTV services, is available on the market mainly based in initial proprietary solutions. A second generation needs to be in line with ruling principles requiring interoperability, free choice of the service and network providers and of the terminal devices.

Regulatory measures may have to be undertaken if the industry by itself does not solve the existing problems. The insufficient success of the launch of new services and products is nevertheless likely to force providers to reduce, by their own decision, the impairments on interoperability. The present set of documents and the standardization in general is aiming to contribute to the satisfaction of these needs.

A potential outcome of this will be that a customer can go into a shop, buy an TV terminal or a STB, call their network operator, sign-up and then can easily access a wide range of services from the largest possible number of service providers.

IPTV, as defined by ITU-T (see clause 3.1), is one of the most significant business cases and drivers for the deployment of next generation networks (NGN). But other MCD solutions, including TV over Internet and others should also be considered and respect the interoperability rules.

In this context DVB states that *the goal of the IPI group in DVB is to specify technologies on the interface between an IP network and retail receivers, enabling the end user to buy a DVB-IPTV receiver in any shop, connect it to a broadband network, switch it on and, without further ado, start to receive DVB services over IP-based networks.*

9.9.3 Open Interfaces for Interoperability

The requirement of R&TTE Directive [i.1], article 4.2, on the publication of public offered interfaces, refer to paragraph 8.2.2, may be considered a clear interoperability requirement. The fact that the surveillance of this requirement is often not considered in a high priority level, may be the reason for some major consumer interoperability problems.

The provisions of art. 9 of the Access Directive [i.4] (after amendment of directive [i.52], see clause 7.2.2.1) may (to be studied in more detail) also be understood to encourage interoperability, including at the NTP, between terminals and networks and services.

The 'interconnection regime' used in Europe to rule the relationship among market actors (mainly network operators, service operators) is widely based in bilateral arrangements among actors. Nevertheless guidance on typical arrangements or the listing of most common PoI with relevance for MCD may be useful to achieve acceptable levels of interconnection.

Most common and important interfaces (NTP, PoI, others) with implications on end-to-end Interoperability have to be identified and cited or defined in a publication taking into account the discussions on the introductory text of clause 9.9.

9.9.4 Interoperability Test Scenarios

Interoperability Tests of Media Content Distribution Platforms and associated systems and terminals have to be considered under convergence aspects.

Multi Media Terminals, e.g. STB, with advanced / hybrid features should be tested, analysing basic mandatory features identified by TC-MCD as necessary/essential requirements for interoperability reasons.

Further advanced (optional) enhancements (e.g. related to CoD/VoD) might be left for a later phase. Additional tests related to identified interfaces (network-, services or- applications interfaces) may be also included as far as required.

ETSI offers the possibility to support enhancement of interoperability (see note) including the organization of events to test and discuss issues in this area. It is nevertheless essential prior to the test to establish an appropriate list of requirements, assign priorities and proceed to a test plan.

NOTE: See <http://www.etsi.org/WebSite/OurServices/interopolis/Interopolis.aspx>.

Annex A:

Copy of helpful text from relevant documents

A.1 From annex I of the Access Directive

Title of the annex:

ANNEX I, CONDITIONS FOR ACCESS TO DIGITAL TELEVISION AND RADIO SERVICES BROADCAST TO VIEWERS AND LISTENERS IN THE COMMUNITY

Contents of the annex:

Part I: *Conditions for conditional access systems to be applied in accordance with Article 6(1)*

In relation to conditional access to digital television and radio services broadcast to viewers and listeners in the Community, irrespective of the means of transmission, Member States must ensure in accordance with Article 6 that the following conditions apply:

(a) conditional access systems operated on the market in the Community are to have the necessary technical capability for cost-effective transcontrol allowing the possibility for full control by network operators at local or regional level of the services using such conditional access systems;

(b) all operators of conditional access services, irrespective of the means of transmission, who provide access services to digital television and radio services and whose access services broadcasters depend on to reach any group of potential viewers or listeners are to:

- *offer to all broadcasters, on a fair, reasonable and non-discriminatory basis compatible with Community competition law, technical services enabling the broadcasters' digitally-transmitted services to be received by viewers or listeners authorised by means of decoders administered by the service operators, and comply with Community competition law,*
- *keep separate financial accounts regarding their activity as conditional access providers.*

(c) when granting licences to manufacturers of consumer equipment, holders of industrial property rights to conditional access products and systems are to ensure that this is done on fair, reasonable and non-discriminatory terms. Taking into account technical and commercial factors, holders of rights are not to subject the granting of licences to conditions prohibiting, deterring or discouraging the inclusion in the same product of:

- *a common interface allowing connection with several other access systems, or*
- *means specific to another access system, provided that the licensee complies with the relevant and reasonable conditions ensuring, as far as he is concerned, the security of transactions of conditional access system operators.*

Part II: *Other facilities to which conditions may be applied under Article 5(1)(b)*

(a) Access to application program interfaces (APIs);

(b) Access to electronic programme guides (EPGs).

History

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