

Media Content Distribution (MCD); MCD framework; Part 1: Overview of interest areas



Reference

DTR/MCD-00001

Keywords

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Contents

Intellectual Property Rights	5
Foreword.....	5
Introduction	6
Background	6
Risks and opportunities	7
The way ahead.....	7
1 Scope	9
2 References	10
2.1 Normative references	10
2.2 Informative references.....	10
3 Abbreviations	11
4 Basic concepts and areas used for the framing structure.....	11
4.1 Media content distribution (MCD) chain	12
4.2 Communications infrastructures and services and Information Society Services	12
4.3 Examples of simplified overviews of the main areas related to MCD	13
4.3.1 ITU-T, IPTV concepts	13
4.3.2 JTC Broadcast, DVB	14
4.3.3 TISPAN	16
4.3.4 Open IPTV forum	16
4.3.5 ATIS	16
4.4 Existing main distribution platforms	17
4.5 Examples of overall, general matters to identify	17
4.5.1 Views and needs of Content Providers	17
4.5.2 Regulatory issues, social needs and policy matters	17
4.5.3 Classes of service, QoS/ QoE	18
4.5.4 Security and contents owner rights	18
4.5.4 Audience measuring	18
4.5.5 Security, billing and user data protection rights.....	18
4.5.6 Location services and the need to geographical limitation	19
4.5.7 MCD, delivery surveillance and control	19
4.5.8 Other aspects covering several areas of MCD	19
5 The set of deliverables in TR 102 688 series	19
5.1 TR 102 688-1, Overview interest areas	20
5.2 TR 102 688-2, Views and needs of Content Providers.....	20
5.3 TR 102 688-3, Regulatory issues, social needs and policy matters	20
5.4 TR 102 688-4, Use cases and needs	20
5.5 TR 102 688-5, Standardization work	20
5.6 TR 102 688-6, Mapping of implementations and "best practice" for service interoperability	21
5.7 TR 102 688-7, Framework and roadmap proposal for service interoperability.....	21
5.8 TR 102 688-8, Audience measurement	21
5.9 TR 102 688-9, Content Distribution Infrastructure (CDI).....	21
5.10 TR 102 688-10, Content generation and acquisition, Content Providers	21
5.11 TR 102 688-11, Content Aggregators	21
5.12 TR 102 688-12, Communication Platforms	22
5.13 TR 102 688-13, Service aggregators	22
5.14 TR 102 688-14, Regional content aggregators.....	22
5.15 TR 102 688-15, Access Networks.....	22
5.16 TR 102 688-16, Users' terminals and networks.....	22
5.17 TR 102 688-17, Infrastructures, equipment.....	23
5.18 TR 102 688-18, Communication Services	23
5.19 TR 102 688-19, Information Society Services (ISS).....	23
5.20 TR 102 688-20, Location services and the need of geographical limitation	23
5.21 TR 102 688-21, Security and content owner rights.....	23

5.22	TR 102 688-22, Security, billing and user data protection rights.....	23
5.23	TR 102 688-23, Content surveillance and control (parental or other).....	24
5.24	TR 102 688-24, Classes of service, QoS/ QoE.....	24
6	Working method.....	24
6.1	Actions to achieve goals.....	24
6.2	External relations.....	25
6.3	Reference time plan.....	25
History	26

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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 is part 1 of a multi-part deliverable covering the Media Content Distribution framework, as identified below:

- Part 1: "Overview of interest areas";**
- Part 2: "Views and needs of content providers";
- Part 3: "Regulatory issues, social needs and policy matters";
- Part 4: "Use cases and needs";
- Part 5: "Standardization work";
- Part 8: "Audience measurement";
- Part 9: "Content Distribution Infrastructure (CDI)".

This list refers to the parts published or close to publication. The successive editions of the present document will update the list. Clause 5 refers to all the possible parts of the set of documents building the TR 102 688 [i.1] series as it is conceived by the date of publication of the present document (part 1 of the series); all the parts referred to in clause 5 and not cited in this foreword may be cancelled or have the title or the scope changed according the evolution of the standardization work.

For a rational maintenance and easy usage of the complete set of the documents, only the present document, i.e. 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 the part 1. The present document works therefore as the central point of the series.

Introduction

ETSI Board#69 minutes [i.8] register the following text:

6.6 Creation of a TC MCD (Media Content Distribution)

Margot Dor (ETSI Secretariat - Director Strategic Projects) presented documents:

[ETSI/B69(08)58] - Creation of TC Media Content Distribution.

[ETSI/B69(08)42 rev.2] - Proposal for the creation of TC (MCD) Media Content Distribution.

After some comments and overnight drafting group resulted in *[ETSI/B69(08)42 rev.3]* which was approved.

D-B69/11	<i>The Board approved the creation of a new Technical Committee for Media Content Distribution (MCD) and appointed Mr. Truls Langeeggen (Telenor ASA) as convenor for the first meeting [ETSI/B69(08)42 rev.3].</i>
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Further to the discussion above, the Secretariat was requested to provide a more detailed background information package.

A-B69/3	<i>ETSI Director-General (MDS)</i>	<i>to provide a more detailed background information package on the issue related to Media Content Distribution [ETSI/B69(08)42 rev.3].</i>
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Background

Today multimedia content is delivered via broadcast networks, the Internet, IPTV, and mobile. Delivery methods include broadcast, unicast (e.g. 3G streaming services), multicast and peer-to-peer, but the experience is seldom homogeneous and seamless for the customers. Content delivery by its very nature also includes a number of restrictions and rules regarding rights.

The worlds of broadcast and telecom traditionally have had their own standards track, based on different commercial requirements. Convergence between both worlds for content delivery results in a proliferation of technical options and specifications, which result in a "standards maze" and a lack of clear business models supported by an accepted technology. This does not serve business and customers' interests, as broadcasters, telecom operators and internet players are offering what could be seen as similar services from a consumer perspective.

In addition commercial solutions developed by different market players do not interoperate across platforms. The crux of the matter is that at one end, content providers face the challenge to provide different content formats to the various distribution pipes, which in turn generates unbearable costs, whilst at the other end, customers' buy-in remains well below expectations.

In general, there are a number of already deployed technologies addressing each of these different services in different markets and addressing various combinations. Arguably the most significant issue is that typically once a market has selected a technology, it most likely sticks to that choice. Although replacing one technology with another is possible in theory, in practice the barriers, often related to economical reasons, are substantial. Even where new functional requirements arise, existing solutions can in most cases be extended to address them. This will normally be easier than replacing the technology with a newer one. This underlines the need to promote correct interoperation of equivalent services based on different technologies.

Many in the industry point to the fact that without interoperability and cross-platform solutions for media distribution that really meet content providers and end users' needs, market figures for digital media distribution may stay what they are today and investments may well exceed profits by far.

In the early 2008 ETSI Secretariat initiated consultations with industry to assess potential interest and support for an initiative aiming at addressing some of these technical barriers. Following a number of preliminary meetings with a large representation from the industry, particularly including content providers and broadcast related representatives, the Board approved the creation of a TC-MCD (Media Content Distribution) in the decision B69/11 and assigned the action B69/3 as stated above.

The present evolution of the communications market strongly influenced by convergence effects requires an extremely wide analysis to understand the specific needs in the communications sector.

The growth of transmission rates supported by new technologies and offered by network operators determined convergence phenomena between the broadcasting and the telecommunications businesses. The increasing capabilities of new developed codexes, the digital transmission technologies together with fibre infrastructures and new radiotransmission technologies are facilitating convergence between mobile and fixed services. The popularity of internet, the penetration of PC and mobile phones and other smart terminals and systems accelerates the process of evolution determining an overall convergence in the ICT sector (telecom-broadcast-informatics, radio-fixed lines).

This evolution forces infrastructures initially not intended for some services to be used to support them. What initially can be considered a problem appeared to be an additional stimulus on the market to overcome the identified difficulties and the result is that e.g. VoIP initial tentatives quickly took a relevant place on the market and the recent evolution on IPTV and other IP based transmission systems are offering better performances and more functionalities at a surprising evolution rate.

To support this evolution and enhance the industry performance in this context the standardization has a central role and studies like the present one can bring together market players around the best solutions in order to deliver products and services to consumers with shortest possible delays and highest performance at reasonable prices.

Risks and opportunities

Although classical Broadcast, IPTV, WebTV and MobileTV systems are operated independently from each other, many digital TV components are shared, e.g. Content Providers infrastructure, some parts of public Networks, e.g. Internet, CDIs (independent or operator), advertising insertion devices (SCTE), home devices and gateways (UPnP/DLNA), terminals and probably many others. Excessive fragmentation and non-interoperability of solutions for content distribution across platforms may:

- Generate prohibitive development costs for many market players (content provision and/or content distribution).
- Impair the virtuous circle usage \leftrightarrow service \leftrightarrow content \leftrightarrow usage.
- Engender misgivings at both end of the line, i.e. for content providers (e.g. too many interfaces of different types) and for end users (e.g. too many, too expensive devices and adaptors often with limited choice).

There are already activities relating to media distribution taking place in and outside ETSI. Particular care should be taken not to duplicate work or overlap the scope of existing standards making bodies and organizations. In this context the set of documents will be essentially informative and will reach the detail necessary to achieve the purposes of TC MCD building strong cooperation relationships with the most relevant standards making bodies in the area.

The work TC-MCD is undertaking should be based on a 'neutral, objective, independent approach' in order to ensure technology neutral consideration to facilitate for markets to make their own choices.

The way ahead

The objectives of this Technical Body are therefore:

- Understand current and future requirements and technical solutions of content delivery to improve interoperability.
- Consider Broadcast, Hybrid, Broadband/Mobile and other MCD offers based on both managed & unmanaged networks.
- Consider content distribution from content providers to end consumers.
- Improve coordination of standards efforts in content delivery in order to facilitate cooperation and information flow between standards development organizations.
- Propose architectures, authoring formats, content trans-coding, protocol and metadata translations.
- Build on existing core specifications, where appropriate.

In line with the above, TC MCD adopted the decision to produce the present document in order to create a structure of technical reports covering the whole scope of the technical body where the main contents is the result of the study identified in the Terms of Reference of TC MCD.

At present, in this initial phase, the following specific deliverables of the structure to be created have been identified:

- Collection and prioritization of use cases.
- Views and needs from Content Providers.
- Regulatory issues.
- Standardization work within and outside ETSI.
- Mapping of implementations and "best practice" for service interoperability.
- Framework and roadmap proposal for service interoperability.

The activities covered by the present set of documents in later stages will include all areas identified in the scope.

The goal of this study is therefore to establish the correct framework to initiate the development of and ensure the adequate standardization work to cover all areas. This should lead to a more favourable environment and beneficiate as many devices and systems as possible.

1 Scope

The present document belongs to a set of deliverables proceeding to the widest possible coordinated study on the media content distribution (MCD) matters with the primarily goal of identifying standardization and future work needed. This set of documents will cover at least the following activities:

- Identify MCD overall requirements and provide a representation (e.g. functional diagram, or more) based on a thorough analysis of different use cases and business models; collection and prioritization of use cases; description of value chain and actors.
- Map current standards with the representation and describe the relationships among standards:
 - consideration of work by other SDOs and external bodies;
 - mapping of existing and evolving MCD implementations and "best practices" for service interoperability and components that can further converge.
- Perform a detailed gap analysis highlighting the challenges in the end to end delivery of content including analysis of current and future business dynamics:
 - identification of issues and gaps within existing activities and implementations.
- Provide implementations guidelines (combinations of standards) aimed at enabling a viable scenario and fulfil the basic requirements of a MCD framework.
- Provide the basis for Inter standard profiling to realize this MCD framework vision.
- Provide overall guidelines to ETSI Technical Bodies to foster a co-ordinated development of standards for digital media distribution across unicast, multicast and broadcast networks:
 - propose work areas and activities within TC MCD and other groups of experts for distribution and delivery of content and interactive media over heterogeneous network topologies and implementations.
- Support the liaison with other relevant standard bodies or organizations, reuse their solutions in the general framework and facilitate the adoption of a consistent set of worldwide solutions.
- Facilitate discussions with relevant bodies on regulatory issues and content providers to help in the introduction of new business models, taking into account existing and evolving business relationships:
 - facilitate the liaison and collaboration with the European Union, Member states and International Authorities on regulation, including EC Directives and other aspects, on issues in the MCD area;
 - facilitate the collaboration and co-ordination positions with other SDOs and industry fora, in particular with those that look for a global approach to interoperable solution.
- Contribute to limit overlap of standards covering the same markets and geographical areas by providing matching information for the most relevant market players.

The present document is part 1 of the set of documents, proceeds to a MCD base structuring analysis and establishes an initial roadmap for the studies covering the wide scope of this set of documents. It should be used as a central liaison element among the different deliverables in the series.

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] ETSI TR 102 688 (all parts): "Media Content Distribution (MCD); MCD framework".
- [i.2] ETSI TS 102 034 (V1.1.1): "Digital Video Broadcasting (DVB); Transport of MPEG-2 Based DVB Services over IP Based Networks".
- [i.3] ITU-T Recommendation Y.1901: "Requirements for the support of IPTV services".
- [i.4] ITU-T Recommendation Y.1910: "IPTV functional architecture".
- [i.5] Open IPTV Forum - Functional Architecture - V 1.2 [Approved Dec 12, 2008].
- [i.6] ETSI TR 102 469 (V1.1.1): "Digital Video Broadcasting (DVB); IP Datacast over DVB-H: Architecture".
- [i.7] Ultimate Guide to IPTV, a 360-degree view of the IPTV Ecosystem, a special Supplement to Americas Telecommunications in partnership with ATIS.
- [i.8] ETSI/B69(08)62 Rev.2: " Minutes, decisions and actions".
- [i.9] ETSI/B69(08)58: "Creation of TC Media Content Distribution".
- [i.10] ETSI/B69(08)42: "Proposal for the creation of TC (MCD) Media Content Distribution".

3 Abbreviations

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

3G	third Generation
CDI	Content Distribution Infrastructure
CP	Content Provider
DLNA	Digital Living Network Alliance
DNG	Delivery Network Gateway

NOTE: ATIS IPTV Overview abbreviations [i.7].

FTTH	Fiber To The Home
ICT	Information and Communications Technology
IP	Internet Protocol
IPR	Intellectual Property Rights
IPTV	Internet Protocol TeleVision (based on ITU definition and TISPAN work)
MCD	Media Content Distribution
PC	Personal Computer
SCTE	Society of Cable-Telecommunications Engineers
SDO	Standards Development Organization
SHE	Super Head End

NOTE: ATIS IPTV Overview abbreviations [i.7].

TC	Technical Committee
UPnP	Universal Plug and Play
VHO	Video Hub Office

NOTE: ATIS IPTV Overview abbreviations [i.7].

VSO	Video Serving Office
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NOTE: ATIS IPTV Overview abbreviations [i.7].

WebTV	TeleVision distribution based on the Internet
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4 Basic concepts and areas used for the framing structure

This clause discusses some basic concepts and raises major issues around MCD in order to achieve a framing structure for the set of deliverables to be produced.

Preference was given for a large number of documents where each document handles a more limited scope. This is expected to offer more freedom for each document to achieve an appropriate level of details in the analysis and facilitates the enhancement and maintenance in general of the different aspects to be handled.

The core criteria of the structure should be stable but a flexible handling of the set of deliverables, e.g. the creation of new subparts or additional parts when necessary, should be encouraged.

The graphic representations offered in this clause 4 and subclauses do not necessarily reflect the need to separate the different areas in a specific business model or in a particular technical implementation. All this areas need to be covered in the present series of documents. Figures 1 and 2 aim only to facilitate a systematic treatment of the different factors effecting MCD and should not be considered a new architecture to deal with.

4.1 Media content distribution (MCD) chain

The graphic representation for the MCD showed in figure 1 covers primarily the concepts used in the traditional broadcast business area, the content generation and provision, the global content aggregation, the transmission and communication platforms, the regional and local aggregation the access platforms and the user devices. It also considers the more recent convergent approaches where content distribution related service is just another service to be aggregated in association with communication platforms.

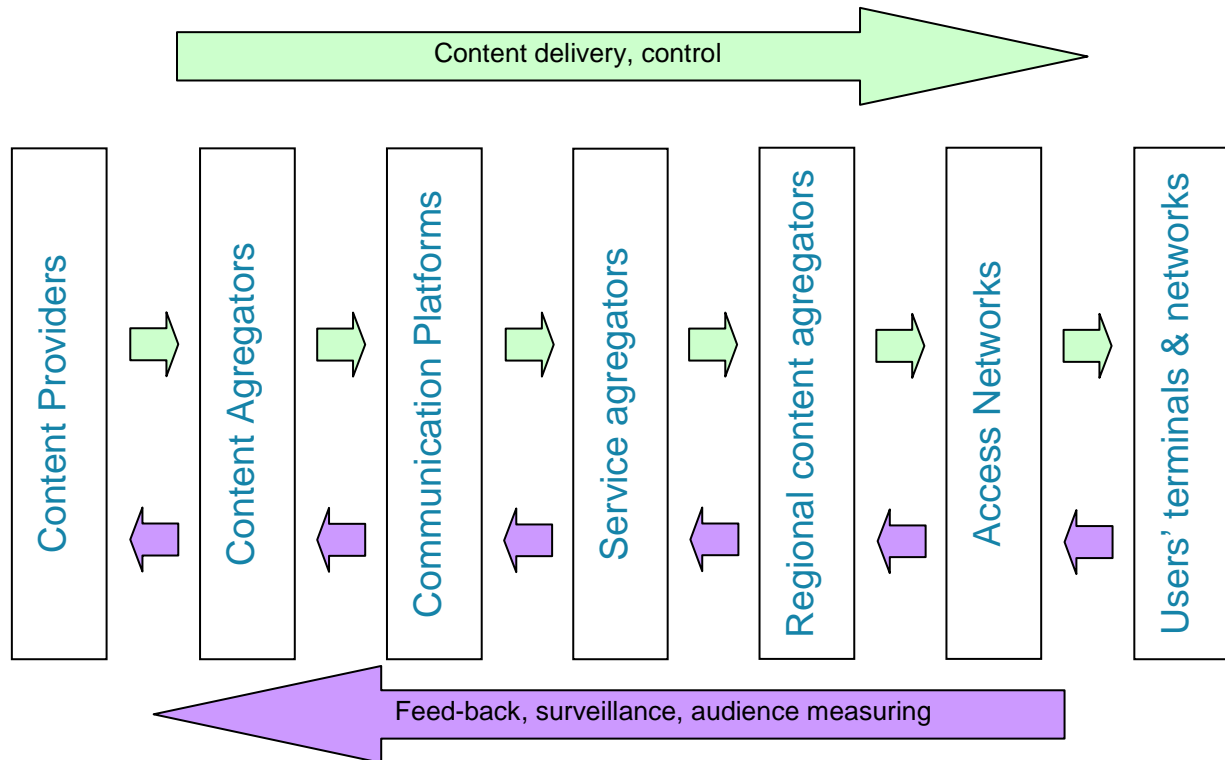


Figure 1: Reference graphic representation of MCD chain

The modules represented in the figure 1 will be treated by the deliverables described in the clauses 5.10 to 5.16, which are foreseen to be developed in a later phase.

4.2 Communications infrastructures and services and Information Society Services

A simplified view of the overall communications areas can be represented as follows.

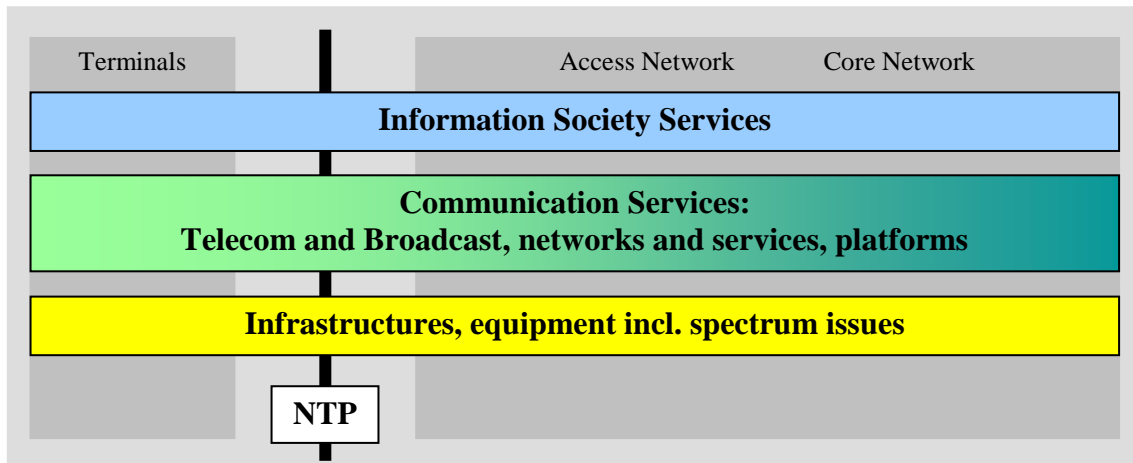


Figure 2: Reference graphic representation of communications systems areas

All the relevant aspects of these areas related with MCD will be covered in the present set of documents by the deliverables described in the clauses 5.17 to 5.19, which are foreseen to be developed in a later phase.

4.3 Examples of simplified overviews of the main areas related to MCD

This clause identifies some schematic representations of existing systems supporting some forms of MCD. There is in the present document no intension of classifying these systems and associated initiatives. The intention is just to identify some of them with the proposal of covering all the relevant aspects related to MCD by establishing appropriate liaison with the corresponding organizations.

In clause 5.5, the most relevant standards and standardization organizations are cited and their activity related to MCD discussed.

4.3.1 ITU-T, IPTV concepts

In the recent standardization work ITU-T represented in figure 1-1 of the ITU-T Recommendation Y.1901 [i.3] and in figure 6-1 of the ITU-T Recommendation Y.1910 [i.4] the IPTV domains as they are represented in the figure 3.

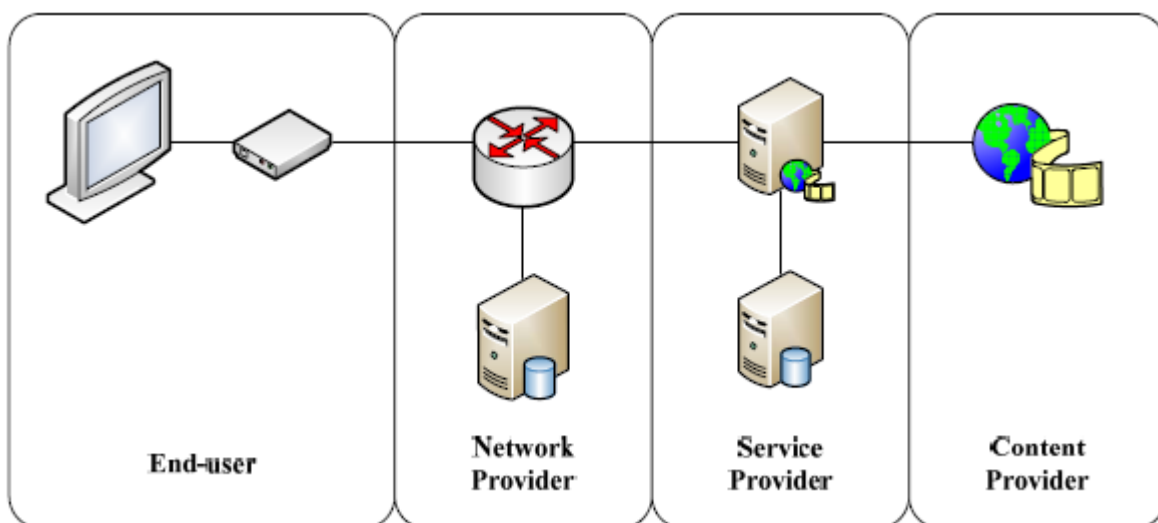


Figure 3: IPTV Domains according to ITU-T Recommendations Y.1901 [i.3] and Y.1910 [i.4]

ITU-T also represented in figure 8-1 of the ITU-T recommendation Y.1910 [i.4] the IPTV functional architecture framework as shown in the figure 4.

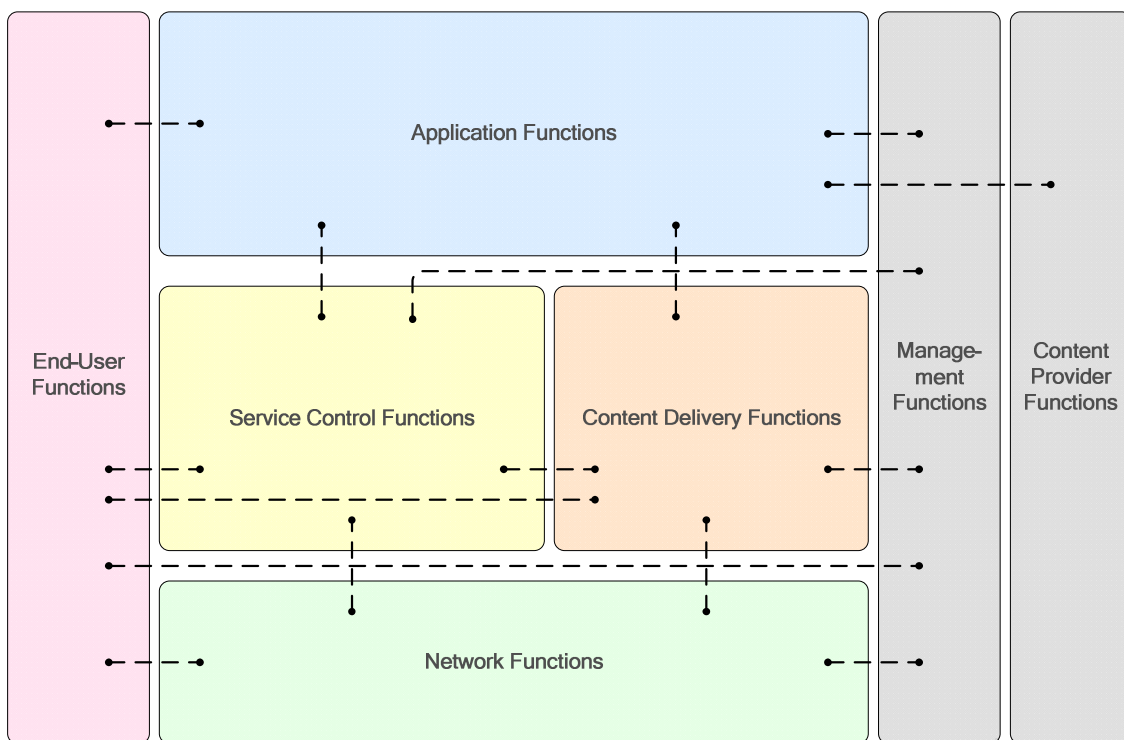


Figure 4: IPTV functional architecture framework according to ITU-T Recommendation Y.1910 [i.4]

Even if there is no one to one relationship, the main units identified by ITU-T seem to be well covered by the areas identified in the clauses 4.1 and 4.2.

4.3.2 JTC Broadcast, DVB

The Joint EBU/CENELEC/ETSI Technical Committee Broadcast is the formal way for the DVB project to publish their standards and specifications after the development phase. DVB project is the main contributor to the JTC Broadcast.

The DVB project aims to provide standards and specifications for digital television by means of Broadcast, Broadband and Mobile. At the beginning of 2009, DVB has released more than 100 specifications and there are more than 220 million DVB receivers around the world. The following diagram illustrates the principal areas of standardisation in DVB:

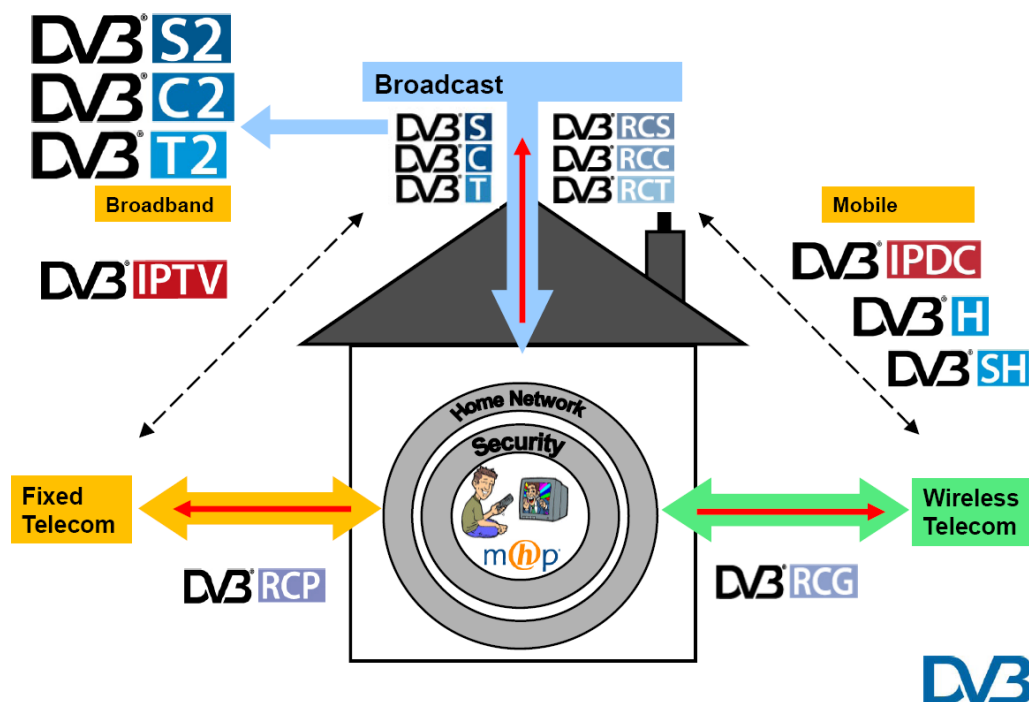


Figure 5: overview of DVB main systems

Figure 5 shows that DVB covers important parts of the audiovisual Media Content Delivery chain. DVB is principally focussed around mass market interfaces for audiovisual devices and establishes liaisons with other Standards Development Organisations for building the wider picture.

DVB-H is one of the multiple standards produced by DVB project as referred above. It is an interesting example since it combines a one-way broadcasting network with an interactive Network.

The architectural model proposed in the figure 1 of TR 102 469 [i.6] for the IP Datacast over DVB-H is represented in figure 6 and it is interesting for the fact that it represents a combination of the traditional telecom and broadcast networks.

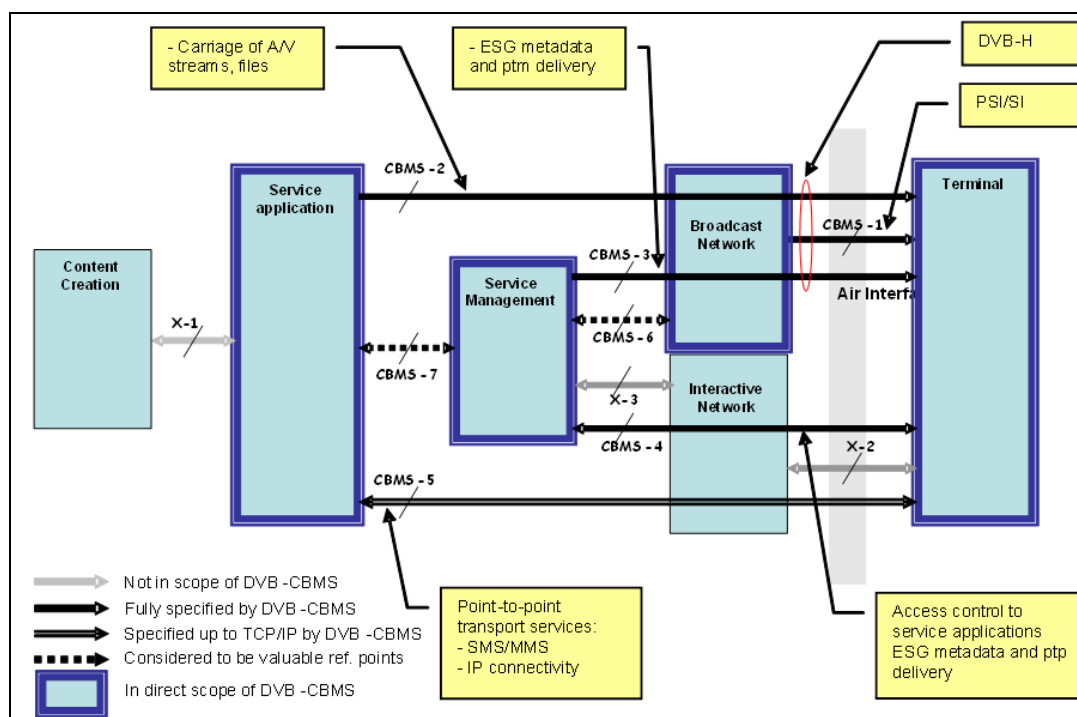


Figure 6: Proposed DVB-H Architecture Diagram

It is believed that a study structured as suggested in the clauses 4.1 and 4.2 can cover DVB standards.

4.3.3 TISPAN

TISPAN overview of architectural concepts for NGN and IPTV are comparable to ITU-T and therefore should be well covered by the areas identified in the clauses 4.1 and 4.2.

4.3.4 Open IPTV forum

The Open IPTV Forum scope graphic representation as shown in figure 1-1 of the Functional Architecture [i.5] reflects the main areas of activity. They demonstrate the concern to develop solutions for MCD to be supported both by managed and non-managed networks.

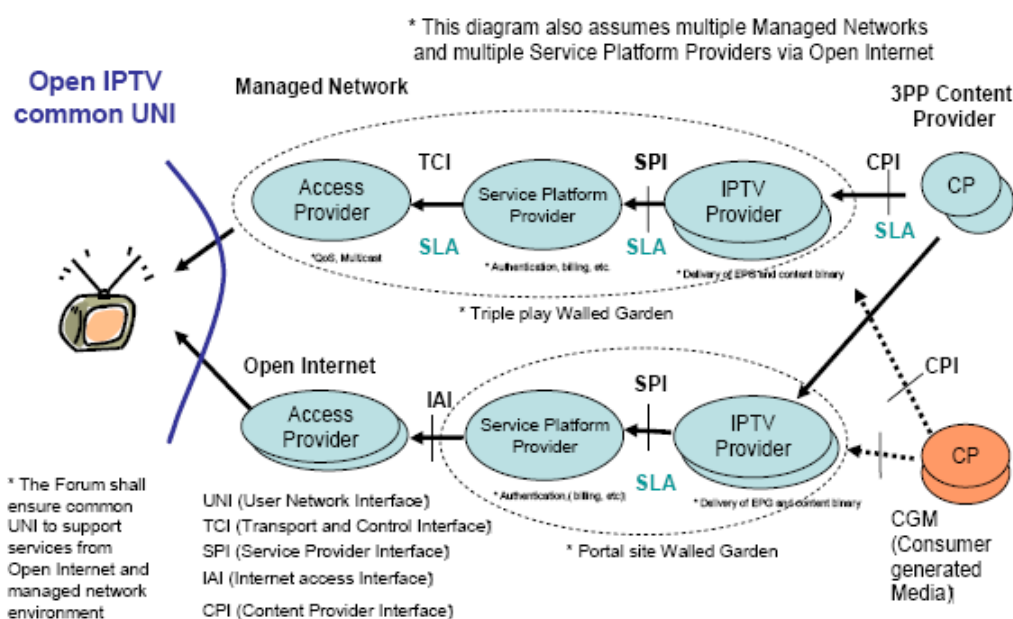


Figure 7: Open IPTV Forum scope graphic representation

However having a different graphic representation, it is believed that a study centered in the areas identified in the clauses 4.1 and 4.2 can cover well the visions and solutions proposed by the Open IPTV Forum scope.

4.3.5 ATIS

ATIS overview of the IPTV architecture [i.7] takes particular care of the different levels of aggregation.

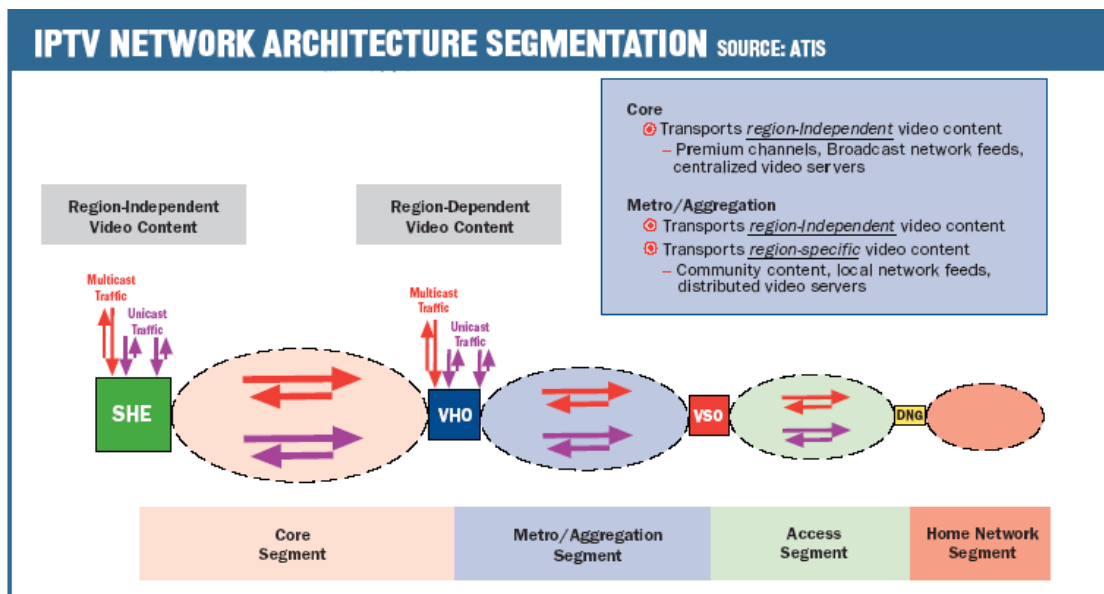


Figure 8: IPTV network architecture segmentation according to ATIS [i.7]

ATIS overview can be considered covered by the areas identified in the clauses 4.1.

4.4 Existing main distribution platforms

It is important to cover the existing main distribution platforms and face the characteristics each one of them offer for the purpose of MCD. In addition, the interaction among them is an important issue since media content flowing from one platform to another may face significant problems. These issues need to be identified, further studied and possibly sent for information to the related standardization bodies.

This subject will be covered by the deliverable described in clause 5.12, which is foreseen to be developed in a later phase. TR 102 688-9 [i.1] will in an earlier phase cover this subject.

4.5 Examples of overall, general matters to identify

4.5.1 Views and needs of Content Providers

The study needs to collect views and needs of Content Providers. This will be central information to the development of the proposed analysis.

This subject will be covered by the deliverable described in clause 5.2, which are foreseen to be developed in a later phase.

4.5.2 Regulatory issues, social needs and policy matters

Regulatory issues, social needs and policy matters need to be covered in order to alert standards making bodies for particular difficulties if the development does not pay due attention to them. For regulatory authorities such a study is also of relevance to prevent unclear ruling or legal conditions impairing appropriate innovation and society development.

EU frame conditions and major documents (directives and other decisions) need to be in the focus of the regulatory part of this set of documents.

National requirements and particular implementations of EU regulation may be cited if they represent relevant input to the good understanding of the issues associated to this area. Other legal constraints with relevant impact for this study should also be identified.

Social needs and policy matters related to MCD should also be discussed in the document to provide a better understanding of the present and possible future legal frame conditions.

This subject will be covered by the deliverable described in clause 5.3, which is foreseen to be developed in a later phase.

4.5.3 Classes of service, QoS/ QoE

The increase of MCD offers and the media and communications markets fragmentation lead to an increased number of interfaces and platforms (often using different technologies) to be crossed by the media between content provider and final user. Every system and interface is a potential source of impairments. Some guidance collected from standards and experts in this area on how provide the user with the appropriate QoS will be helpful in the context of the definition of interoperation criteria.

This subject will be covered by the deliverable described in clause 5.24, which is foreseen to be developed in a later phase.

4.5.4 Security and contents owner rights

Content owners put a particular emphasis on enforcing the digital copy protection when carrying contents. These copy protections can soon become an obstacle to cross-platform interoperability, due to the incompatibility of most content protection systems.

The broadcast world typically uses DVB Simulcast when a service requires a cross-bouquet or cross-distribution network capability. But in the broadband world such a standard is yet to emerge; many vendors support incompatible DRM systems.

This study should take into account marketing prerequisites, such as geolocalization of content distribution, or windows of availability.

This subject will be covered by the deliverable described in clause 5.21, which is foreseen to be developed in a later phase.

No overlap should exist between the handling of security aspects referred in this clause and covering CP legitimate concerns with those related to clause 4.5.5 and covering user's data protection issues.

4.5.4 Audience measuring

The traditional audience measuring processes have been designed for plain broadcast services. Some IPTV operators have also set up mechanisms measuring in real-time the number of boxes tuned to a channel; however this does not directly cover the traditional processes because those mechanisms have no information on the number of viewers, and their sociological characteristics.

The figures used in the advertising industry are to become obsolete with the soar of IPTV and mobile uses. Interactive services attached to a channel may also be taken into account. This study should define ways to consolidate audience data coming from diverse distribution networks, with different measurement capabilities.

This subject will be covered by the deliverable described in clause 5.8 which is foreseen to be developed in a later phase.

4.5.5 Security, billing and user data protection rights

There is a need of covering the issues related to the collection of user profiles and the commercial use of these profiles for selective advertising. Other aspects that might be identified during the work which are related to security protecting users rights may be included in the present document.

Problems may (or not) rise from the usage of MCD facilities associated in a multifunctional terminal to other type of service. The progress of the overall set of discussions may facilitate the identification of particular issues in this area.

This subject will be covered by the deliverable described in clause 5.22, which is foreseen to be developed in a later phase.

No overlap should exist between the handling of security aspects related to clause 4.5.3 and covering CP legitimate concerns with those referred in this clause and covering user's data protection issues.

4.5.6 Location services and the need to geographical limitation

In earlier broadcast times the area covered by a transmitting station used for broadcasting was the base to determine the area and the clients covered by the service. This 'foot print' principle is used by media experts to evaluate the market sector they intend to assess.

This 'foot print' principle has then been used for the agreements between content providers and network operators/ service providers to ensure the property rights of the contents are respected and the contents are distributed in the areas agreed. It is also largely used for licensing purposes, when national authorities assign a frequency range in a region for the broadcasting service. Emergency systems include some times the broadcast of specific information (audio or video) in particular areas, which can be seen also associated to the 'foot print' principle.

With the satellite and terrestrial digital systems, and later with the launch of Pay TV offers, the areas and clients covered by a certain program were much wider than the ones intended for a specific region or country. To allow the discrimination of the clients capable of receiving the broadcasted contents, scrambling, encryption and Conditional Access techniques are used.

The Internet nomadism brought an additional difficulty in this context when video and TV programs started to be distributed using Internet. Also initial versions of IPTV standards (e.g. TS 102 034 [i.2]) did not include the concepts like regional cell.

Some discussion and guidance on localization methods suitable for MCD will be helpful to complete the studies in this set of documents.

This subject will be covered by the deliverable described in clause 5.20, which is foreseen to be developed in a later phase.

4.5.7 MCD, delivery surveillance and control

MCD may also be associated to some specific rules of access like parental control for children or other rules associated to specific user rights or conditioning.

These aspects will be covered by the deliverable described in clause 5.23, which is foreseen to be developed in a later phase.

4.5.8 Other aspects covering several areas of MCD

The development of the overall MCD study will identify subjects and issues related to no particular area identified previously in the present document.

The structure proposed for the set of the documents needs to allow an easy production and maintenance of the published parts but should also facilitate the creation of new parts to cover new subjects.

5 The set of deliverables in TR 102 688 series

The present clause refers to all the parts of the set of documents building the TR 102 688 [i.1] series as it is conceived by the date of publication of the present document (part 1 of the series). In the foreword only the parts published or close to publication are referred to.

It is possible that, in the successive versions of the present document (part 1 of the series), this clause 5 is adapted to the evolving experience of the work. This may result in the definition of new parts, the deletion of some other planned parts or the reformulation of some others.

Each reference to a part of the series cited in this clause 5 is associated to a short description of the specific scope of that part. The evolution of the work may determine some adaptations to the scope by the time each item will be produced or revised. This evolution will also be registered in the successive editions of the present document.

5.1 TR 102 688-1, Overview interest areas

TR 102 688-1 is the present document. it:

- Initiates a generic overview of Media Content Distribution issues, citing main types of media, of contents, of distribution systems, associated requirements and equipment available on the market.
- Tries to define an overall global concept to build the basis of the structure for the set of deliverables it belongs to with the goal of studying the MCD matters and identifying the present standardization associated needs.
- Defines a structure for the multipart document offering a summary of the scope of each one of the single deliverables in this context.

The present document needs to be often updated to maintain an updated overview of the whole set of parts.

5.2 TR 102 688-2, Views and needs of Content Providers

TR 102 688-2 [i.1] collects and discusses the different views and needs of Content Providers; this is a central information source for the development of the overall study. It:

- Refers to DVB knowledge for the broadcast-centric sections, and other standards from the broadband world.
- Emphasizes the need for cross-platform compatibility of interactive services and standardization of middleware programming interfaces, defines a structure for conveying different levels of information via broadcast and broadband channels and combining them in the same user experience.
- Covers and embraces the current country-specific initiatives for interactive services, in particular the French (based on H4TV) and German (based on CE-HTML) projects which are due to converge under the JTC Broadcast HBBTV specification.

5.3 TR 102 688-3, Regulatory issues, social needs and policy matters

TR 102 688-3 [i.1] covers:

- EU frame conditions and major documents (directives and other decisions).
- National requirements and particular implementations of EU regulation if they represent relevant input to the good understanding of the issues associated to this area. Other legal constraints with relevant impact for this study should also be identified.
- Social needs and policy matters related to MCD are discussed for the document to provide a better understanding of the present and possible future legal frame conditions.

5.4 TR 102 688-4, Use cases and needs

TR 102 688-4 [i.1] collects use cases identified during the initial discussions. The study of such use cases will help to clarify the relative importance they have and to better define the standardization work needed in the context of MCD.

5.5 TR 102 688-5, Standardization work

The production of TR 102 688-5 [i.1] is postponed to the next phase.

TR 102 688-5 [i.1] lists the existing standardization work in and outside ETSI, published or in development phase, and proceeds to a structured analysis in order to facilitate the overall study where the identification of gaps, overlaps, compatibility and interoperability of the different solutions proposed to the market are major goals.

5.6 TR 102 688-6, Mapping of implementations and "best practice" for service interoperability

The production of TR 102 688-6 [i.1] is delayed.

It will be produced in a later phase, particularly after the collection and analysis of TR 102 688-4 [i.1] (use cases) and TR 102 688-5 [i.1] (existing and ongoing standardization work).

5.7 TR 102 688-7, Framework and roadmap proposal for service interoperability

The production of TR 102 688-7 [i.1] is delayed.

It will be produced in a later phase, particularly after the initiation or even publication of TR 102 688-6 [i.1] (Mapping of implementations and "best practice").

5.8 TR 102 688-8, Audience measurement

The production of TR 102 688-8 [i.1] is postponed to the next phase.

TR 102 688-8 [i.1] assesses activities and business plans with relevance to Audience Measurement. It briefly also provides a synopsis of information related to Audience Measurement of television viewership and radio listenership that receive programs or information by means of broadcast to fixed and mobile locations, broadband networks, or on-line Internet.

Audience measurement is a market research tool used to assess the return on advertising investment and to maximize the value provided users. Such measurements are made to provide information to tailor messages or content to better suit the preferences of a target audience and which promotes advertisers and content providers objectives.

5.9 TR 102 688-9, Content Distribution Infrastructure (CDI)

Communication platforms are used in the context of MCD as Content Distribution Infrastructures.

TR 102 688-9 [i.1] will assess activities and business plans underway with relevance to Content Distribution Infrastructures in order to identify standardization work available and gaps on that work and, where necessary, to specify needs. The scope should cover Internet Content Distribution as well as operator content distribution and remain architecture-neutral to best serve the largest possible set of target architectures.

The goal of this document is not to provide a specification, but it can precise what constraints will be relevant for the specifications. The report should pay attention to the work already started in this domain outside MCD and indicate their suitability to the specified objectives.

5.10 TR 102 688-10, Content generation and acquisition, Content Providers

The production of TR 102 688-10 [i.1] is delayed.

If necessary, it will be produced in a later phase, particularly after the initiation or even publication of TR 102 688-2 [i.1] (Views and needs of Content Providers), which is believed to be the 'kick-off' action for the ETSI experts to discuss the areas of standardization related to content generation and acquisition.

5.11 TR 102 688-11, Content Aggregators

The production of TR 102 688-11 [i.1] is delayed.

If necessary, it will be produced in a later phase, particularly after the initiation or even publication of TR 102 688-10 [i.1] (Content generation and acquisition), which is believed to be the important for the ETSI experts to discuss the areas of standardization related to content aggregation.

5.12 TR 102 688-12, Communication Platforms

TR 102 688-12 [i.1] may need to be created later as a complement of the study initiated in TR 102 688-9 [i.1] (CDI). In case of interest it may even be sub-divided in several sub-parts, e.g.:

- Sub-part 1: "General and common aspects".
- Sub-part 2: "Broadcasting networks".
- Sub-part 3: "Managed communications networks".
- Sub-part 4: "Internet and non-managed networks".
- Sub-part 5: Interaction among different type of distribution networks".
- Sub-part 6: "Convergence trends".

5.13 TR 102 688-13, Service aggregators

The production of TR 102 688-13 [i.1] is delayed.

If necessary, it will be produced in a later phase, particularly after the initiation or even publication of TR 102 688-11 [i.1] (content aggregation) and TR 102 688-12 [i.1] (communications platform), which are believed to be important for the ETSI experts to discuss the areas of standardization related to service aggregation in MCD environment.

5.14 TR 102 688-14, Regional content aggregators

Regional content aggregation may be one area for further examination allowing regional actors to use global contents associated to local generated information. This is not a first priority for the present study but it may become important when most relevant bases of the study will be published.

The production of TR 102 688-14 [i.1] is therefore foreseen for a later phase.

5.15 TR 102 688-15, Access Networks

Access Networks influence central aspects of MCD. They are nevertheless standardized by other bodies and it seems appropriate to analyse requirements and consequences for access networks determined by MCD.

The production of TR 102 688-15 [i.1] is therefore foreseen for a later phase.

5.16 TR 102 688-16, Users' terminals and networks

User's terminals and networks influence central aspects of MCD. Convergence effects, the technological evolution and the success of mobile terminals are changing the traditional concept of the terminal and home environment and often confusing the understanding of well established principles, e.g. network terminals owned by network operators or service providers and system specific terminals. Not only these examples but the overall picture of MCD related user equipment may need to be reassessed once the initial studies are completed.

The production of TR 102 688-16 [i.1] is therefore foreseen for a later phase.

5.17 TR 102 688-17, Infrastructures, equipment

Infrastructures and associated technologies are decreasing with recent success of FTTH. E.g. the traditional difference between CATV and DSL industry may be reduced or even disappear with the massive usage of MCD and other usages of communications networks. A room for the analysis of infrastructures evolutions, including mobile systems, e.g. femtocells, and the relationship with MCD seems to be an important item in the present set of documents. This cannot be achieved before the initial phases of the global study have a higher level of maturity.

The production of TR 102 688-17 [i.1] is therefore foreseen for a later phase.

5.18 TR 102 688-18, Communication Services

MCD may be in relation with many other communications services. It is for the moment not possible to deeper analyse these aspects but reserving a place for such a study seems at the present stage to be important.

The production of TR 102 688-18 [i.1] is therefore foreseen for a later phase.

5.19 TR 102 688-19, Information Society Services (ISS)

The massive usage of communications networks in support of ISS promoted by policy makers is expected to have major impact in communications services and platforms. Many of these services are related to MCD. This interrelation may need some analysis; it is therefore foreseen to reserve a part of the present set of documents for such a purpose.

The production of TR 102 688-19 [i.1] is foreseen for a later phase.

5.20 TR 102 688-20, Location services and the need of geographical limitation

Commercial distribution of contents is often related to geographical conditions. Also for population alarming systems in case of emergency situations, geographical information is of central importance. The performance of location services made substantial progress, related to the technological evolution and the deployment of new systems. These are only 2 examples of the relationship of these two areas (MCD and location services). This interrelation may need some analysis; it is therefore foreseen to reserve a part of the present set of documents for such a purpose.

The production of TR 102 688-20 [i.1] is foreseen for a later phase.

5.21 TR 102 688-21, Security and content owner rights

Security is often seen by CP as a way to protect their rights on the ownership of the contents. The MCD wide range of applications may have other views and a collection of such situations is important to enhance the identification and formulation of requirements for systems supporting MCD.

The production of TR 102 688-21 [i.1] is foreseen for a later phase.

5.22 TR 102 688-22, Security, billing and user data protection rights

On the user side is normally understood as a means to protect their anonymity and is related to personal data protection. The MCD wide range of applications, service and network usage may have other views and a collection of such situations is important to enhance the identification and formulation of requirements for systems supporting MCD.

The production of TR 102 688-22 [i.1] is foreseen for a later phase.

5.23 TR 102 688-23, Content surveillance and control (parental or other)

Content surveillance is in the context of the present expansion of content consumption becoming a difficult action to execute. A study on this subject within the context of MCD seems to be helpful.

The production of TR 102 688-23 [i.1] is foreseen for a later phase.

5.24 TR 102 688-24, Classes of service, QoS/ QoE

The importance of the choice of the appropriate class of service, particularly when connecting different networks, and the QoS and QoE parameters influencing MCD are items to be studied in order to understand the ways to achieve the successful MCD offers. This study is foreseen to be the base for TR 102 688-24 [i.1] of the present set of documents.

The production of TR 102 688-24 [i.1] is foreseen for a later phase.

6 Working method

This clause neither covers areas specified in ETSI Directives (see note 1) or Handbook (see note 2) nor establishes administrative procedures in line and as complement to them. It rather introduces a general discussion on how to get information and develop appropriate collaboration with other groups of experts leading in relevant areas the standardization work related to MCD.

NOTE 1: Available on <http://portal.etsi.org/Directives/home.asp>.

NOTE 2: Available on <http://portal.etsi.org/Handbook/home.asp>.

6.1 Actions to achieve goals

To achieve its goals, the group will, in MCD and related areas:

- Collect use cases or list and refer to other studies made for this purpose.
- Prioritize and structure the identified use cases.
- Study and try to understand the current and future technology roadmap as seen by stakeholders.
- Collect and identify:
 - views and needs of Content Providers;
 - regulatory issues and policy main lines;
 - relevant standardization work within and outside ETSI.
- Derive requirements from the above steps.
- Map implementations and "best practice" for service interoperability.
- Identify gaps and perform gap analysis.
- Propose framework and roadmap for service interoperability.
- Recommend how best to achieve service interoperability, particularly:
 - choosing existing standard (propose amendments if necessary);
 - delegating new work items to other existing bodies;
 - starting new work item internally.

6.2 External relations

In order to successfully conclude the above mentioned list of actions, particular care should be assigned to:

- Delegate representatives to external bodies for them to defend and work out cooperative approach with other groups of experts, e.g. ETSI TISPAN, DVB, ITU-T IPTV GSI, ATIS IIF, OIPF, OMA.
- Participate with the help of representatives in conferences and tradeshowes so as to make ETSI TC MCD known and communicate successively on results and deliverables.

It is important to regularly deliver output to other organizations in order to:

- Communicate clearly the rationale and objectives of ETSI TC MCD.
- Work on a cooperation basis.
- Start with a limited number of organizations covering different areas of MCD.
- Build a well functioning and transparent relationship.
- Establish win-win relationship.

It is also important to regularly analyse the input from other organizations to better identify and specify:

- The domain Analysis.
- Use cases.
- Requirements.
- Functional models and Architectures.
- Specifications.

6.3 Reference time plan

By the end of 2009 and beginning of 2010 a first set of parts is being published or in final approval phase. A yearly review of the present document is recommended in order to adapt the progress of the overall study to the needs of the industry and take in consideration the availability of the experts active in MCD.

History

Document history		
V1.1.1	March 2010	Publication