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Technical Specification

Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Rules covering the use of TV URIs for the Identification of Television Channels

Reference

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN).

Introduction

The present document provides rules for the identification ("naming") of television channels using the TV URI identifier. Unambiguous identification is required when different parties (end users, IPTV providers, content providers, etc.) want to refer to the same television channel. The present document provides requirements for such identifications, rules for the identification of television channels and technical options to resolve the channel identification.

1   Scope

The present document provides rules for the identification ("naming") of television channels using the TV URI identifier.

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.

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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.

[1]   ETSI TR 180 000: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); NGN Terminology".

[2]   ETSI TS 184 002: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Identifiers (IDs) for NGN".

[3]   ETSI TS 182 008: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Presence Service; Architecture and functional description (Endorsement of 3GPP TS 23.141 and OMA-AD-Presence_SIMPLE-V1_0)".

[4]   ETSI TS 181 016: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Service Layer Requirements to integrate NGN services and IPTV".

[5]   ETSI TS 182 027: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IPTV Architecture; IPTV functions supported by the IMS subsystem".

[6]   ETSI TS 182 028: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IPTV Architecture; Dedicated subsystem for IPTV functions".

[7]   ETSI TS 183 063: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IMS-based IPTV stage 3 specification".

[8]   IETF RFC 2838: "Uniform Resource Identifiers for Television Broadcasts".

[9]   IETF RFC 3986: "Uniform Resource Identifiers (URI): Generic Syntax".

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.

Not applicable.

3   Definitions, symbols and abbreviations

3.1   Definitions

For the purposes of the present document, the terms and definitions given in TR 180 000 [1], TS 181 016 [4] and the following apply:

tv URI: identification of a broadcast television channel

3.2   Abbreviations

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

BC   Broadcast
DNS   Domain Name System
EPG   Electronic Program Guide
IPTV   Internet Protocol Television
TV   Television
URI   Uniform Resource Identifier
XML   Extensible Markup Language

4   Requirements on the use of the TV URI

This clause sets requirements on the use of the TV URI for the identification of broadcast television channels for applications that require such identification.

4.1   TV URI for IPTV presence

Presence TS 182 008 [3] is the application where one user (the "watcher") can see the status of another user (the "presentity"). In case of IPTV, an item in the presence information may be the television channel currently accessed.

According to TS 181 016 [4]: "It shall be possible to define presence information related to the IPTV experience, e.g. channel currently accessed. The identification of the channel currently accessed shall be machine-readable. Language dependent information may also be made available to watchers."

According to TS 182 027 [5]:"If the IPTV presence attribute "channel currently accessed" is supported, then the machine-readable part of the identification of the channel shall be globally unique. The term globally unique here means that there is no ambiguity in the identification of the channel if presentity and watcher (for terminology, see in TS 182 008 [3]) are with different network operators and/or in different countries."

Document TS 183 063 [7] contains a stage-3 description of the IPTV presence service. The XML schema for presence information includes the "BCServiceID" parameter, which corresponds with the "channel currently accessed" in TS 181 016 [4] and TS 182 027 [5].

Req. 4.1.1: If the "BCServiceID" parameter is used, then it shall be populated with a TV URI.

4.2   TV URI for Electronic Program Guide

Electronic Program Guide (EPG) is "an assistance tool which helps users to locate the content they want and to facilitate the selection of IPTV services for watching, recording, etc." TS 181 016 [4], TS 182 027 [5]. EPGs refer to television channels.

Req. 4.2.1: If the IPTV provider and the provider of the EPG service are different parties, then the EPG shall use the TV URI to identify television channels.

Req. 4.2.2: If the IPTV provider and the provider of the EPG service are the same party, then the EPG may use the TV URI to identify television channels.

4.3   TV URI for NNI for IPTV

NNI for IPTV is the interconnection between an IPTV Provider and another IPTV Provider or a content Provider to exchange content, like broadcast television channels (BC). If the broadcast television channels are exchanged on an on-demand basis then the identification of television channels is needed.

Req. 4.3.1: If different parties exchange broadcast television channels on an on-demand basis, then the TV URI shall be used to identify those television channels.

5   Identification of television channels with TV URI

Identification of a TV channel is an answer to the question "What is the name of this TV channel?". Identification of TV channels is done by human, e.g. the end-user programming his set-top box, or an engineer at the IPTV provider filling in channel lists. Figure 1 illustrates the distinction between identification of television channels (this clause), and their resolution (see clause 6).
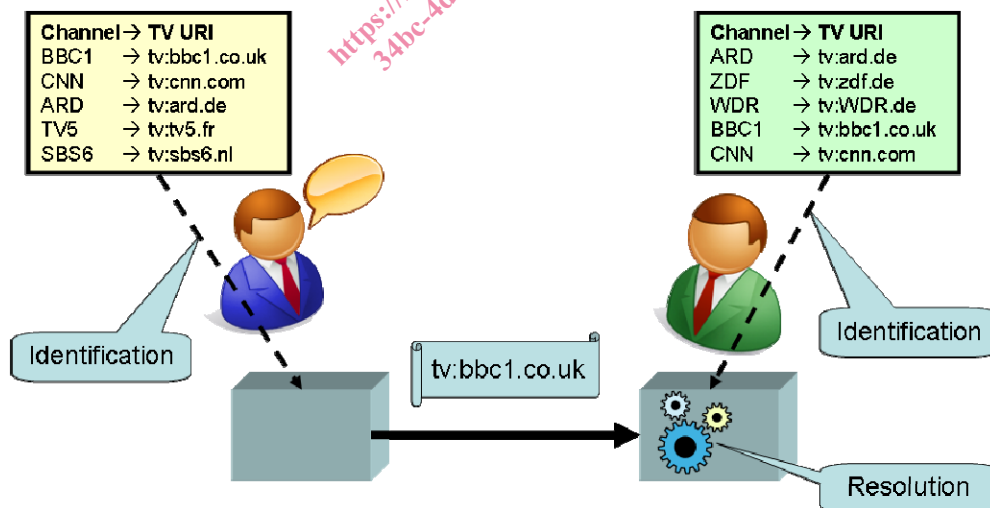

Figure 1: Identification of TV channels is performed by humans

5.1   TV URI syntax and semantics

Television channels are identified by a tv:URI as specified in RFC 2838 [8]. The basic structure of a television URI is:

- tv:<broadcast>

where broadcast is a description of the data source. The description takes the form of a DNS-style identifier for a particular broadcaster or television network.

EXAMPLE:

- tv:wqed.org   the WQED station

- tv:nbc.com   the NBC network

In the simplest form, domain names themselves are used as broadcast identifiers.

EXAMPLE:

- tv:abc.com   the American Broadcast Company

- tv:abc.co.au   the Australian Broadcast Corporation

In some cases, networks have multiple broadcast streams that need to be distinguished. This is also handled in DNS style:

- tv:east.hbo.com   HBO East

- tv:west.hbo.com   HBO West

5.2 Naming a television channel with a TV URI

The present document follows a so-called harmonization approach in the identification of television channels. This clause explains the harmonization approach and provides rules for the harmonization.

5.2.1 Harmonization of TV URIs

The purpose of standardization is to improve interoperability and hence and reduce identification ambiguity. The following approaches can be recognized in reducing the ambiguity in the identification of TV channels.

1) Free-format text field.

2) Harmonization.

3) Registry.

The first approach is the definition of a free-format text field. This would enable the identification. However, it leaves much ambiguity on how this text field should be used.

The second approach is the specification of harmonized syntax and semantics rules. This is essentially what the tv:URI is. The syntax of the tv:URI is defined in RFC 2838 [8]: tv:<broadcast>, with <broadcast> being a DNS-style identifier. Examples of semantics rules are the following.

The third approach is the establishment of a registry for tv:URIs. The registry would enforce rules like the above ones, and establish additional rules when needed. Notice that there will still remain ambiguity, as the registry can and will be incomplete. For example, the Showview channel lists maintained by Gemstar are incomplete, as it only covers TV channels in a limited set of countries and within those countries, various local and regional TV channels are missing in the lists.

Figure 2 illustrates a view on how the different approaches compare to each other in reducing the ambiguity in the identification of TV channel.
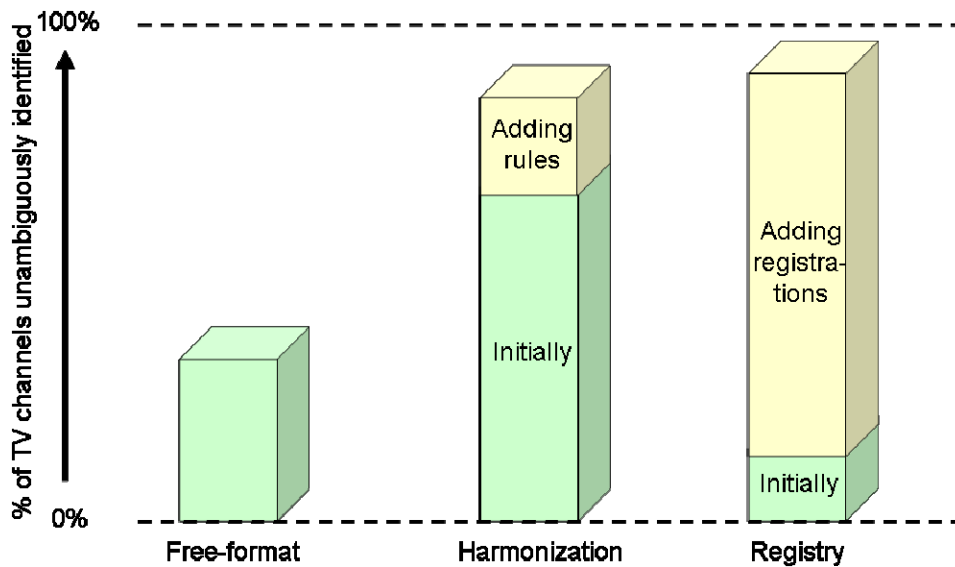
Figure 2: Effectively of a harmonization approach to identify television channels with the TV URI

So, the harmonization approach will quickly cover the majority of the TV channels. By adding harmonization rules when needed, the percentage of TV channels unambiguously identified can quickly become very high.

In contrast, a registry approach will take much time, effort and cost. The registry has to be established, including funding, governance and policies. The registry will have to comply with various national and international regulations. Rules and procedures have to be made on which entities can populate the registry and how the creation, reading, updating and deletion of records is managed.

So, the harmonized approach is most effective on the short term. Also, this approach does not preclude the evolution to a registry approach on the long term.

5.2.2   Rules for the harmonization of TV URIs

This clause provides rules for the harmonization to identify television channels with the TV URI.

It is important to note that these DNS-style identifiers need not match real hostnames; they should not be resolved to IP addresses using DNS. Thus, using the terms as defined in RFC 3986 [10], the "tv:" scheme is a Uniform Resource Identifier and not a Uniform Resource Locator.

Req 5.2.2.1: Domain names must be used as broadcast identifiers, with the applicable country top-level domain.

EXAMPLE:

-    tv:abc.com   the American Broadcast Company

-    tv:abc.co.au   the Australian Broadcast Corporation

Req 5.2.2.2: The tv:URI shall match with the registered domain name of the broadcaster or television network.

EXAMPLE:

-    tv:cnn.com is the TV channel which has the website http://cnn.com

Req 5.2.2.3: Networks may have multiple broadcast streams that need to be distinguished. This is also handled in DNS style.

EXAMPLE:

-    tv:east.hbo.com HBO East

-    tv:west.hbo.com HBO West