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SERIES J: CABLE NETWORKS AND TRANSMISSION OF TELEVISION, SOUND PROGRAMME AND OTHER MULTIMEDIA SIGNALS

Switched digital video over cable networks

Requirements for the advanced IP-based digital video convergence service

Recommendation ITU-T J.1111

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Summary

As digital broadcasting services have been rapidly deployed, many service operators are considering more effective transmission means for these services. Recently, digital broadcasting services have changed in order to use resources more efficiently and to accommodate the varying needs and environments of subscribers. Therefore, it is necessary to redefine the advanced IP-based digital video convergence service with the objective of maintaining quality of service (QoS) and using transmission bandwidth effectively in the broadband network environment.

The switched digital video (SDV) service is a service mechanism for distributing digital video over radio frequency (RF)-based broadband networks, and the IP-based SDV service is a service mechanism for distributing digital video over IP-based broadband networks. The advanced IP-based digital video convergence service is the service mechanism for providing interfaces and functionalities to enable the service operators to offer quality of service (QoS)-guaranteed broadcasting to subscribers via IP-based converged broadband networks.

Recommendation ITU-T J.1111 aims to define the service requirements of the IP-based digital video convergence service including IP-based SDV technologies and considering the convergence environment.

Recommendation ITU-T J.1111 references normatively Recommendation ITU-T J.1101, which describes the functional requirements for the IP-based switched digital video service.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T J.1111	2022-01-13	9	11.1002/1000/14840

Keywords

Digital broadcasting, digital video convergence service, IP, J.AIP-DVCS.

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Table of Contents

Recommendation ITU-T J.1111

Requirements for the advanced IP-based digital video convergence service

1 Scope

This Recommendation defines the requirements of the IP-based digital video service considering the converged broadband environment. The functionalities described in this Recommendation are defined according to the requirements of service operators. The IP-based digital video service considering a converged environment is the service mechanism for providing interfaces and functionalities to enable service operators to offer quality of service (QoS)-guaranteed broadcasting. SDV is a service mechanism for distributing digital video over RF-based broadband networks; an IP-based SDV is a support SDV function that works via IP-based broadband networks. The advanced IP-based SDV is a service mechanism for distributing digital video via IP-based broadband networks considering a convergence service.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T J.1101] Recommendation ITU-T J.1101 (2012), *Functional requirements for IP-based switched digital video using data over cable service interface specifications*.

3 Definitions

3.1 Terms defined elsewhere

None.

3.2 Terms defined in this Recommendation

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

AIP-DVCS Advanced IP-based Digital Video Convergence Service

DVCS Digital Video Convergence Service

MAC Media Access Control

SDV Switched Digital Video

STB Set-Top Box

5 Conventions

In this Recommendation:

The keywords "**is required to**" indicate a requirement which must be strictly followed and from which no deviation is permitted if conformance to this Recommendation is to be claimed.

The keywords "**is recommended**" indicate a requirement which is recommended but which is not absolutely required. Thus, this requirement need not be present to claim conformance.

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The keywords "**can optionally**" indicate an optional requirement which is permissible, without implying any sense of being recommended. This term is not intended to imply that the vendor's implementation must provide the option and the feature can be optionally enabled by the network operator/service provider. Rather, it means the vendor may optionally provide the feature and still claim conformance with the specification.

In this Recommendation, the words shall, shall not, should and may sometimes appear, in which case they are to be interpreted, respectively, as is required to, is prohibited from, is recommended, and can optionally. The appearance of such phrases or keywords in an appendix or in material explicitly marked as informative are to be interpreted as having no normative intent.

6 Requirements

The following are the requirements for the advanced IP-based digital video convergence service:

6.1 It is required that the AIP-DVCS system be able to classify the service flow using the destination IP group address.

6.2 It is required that the AIP-DVCS system be able to schedule the service flow.

6.3 It is required that the AIP-DVCS system be able to process the packet according to service flow information.

6.4 It is recommended that the AIP-DVCS system be able to process MPEG-2 TS convergence service.

6.5 It is recommended that the AIP-DVCS system be able to transmit downstream PHY.

6.6 It is recommended that the AIP-DVCS system be able to control the session management function.

6.7 It is recommended that the AIP-DVCS system be able to control the resource management function.

6.8 It is recommended that the AIP-DVCS system be able to control the service flow.

6.9 It is recommended that the AIP-DVCS system be able to control the subscriber management function.

6.10 It is recommended that the AIP-DVCS system be able to process advanced DVCS including scalable video transmission service.

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