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Technical Specification

## Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IMS-based IPTV stage 3 specification

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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).

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# 1 Scope

The present document describes the Procedures on the Functional Entities and Call Flows for the protocols and their possible enhancements to support IPTV services based on the architecture and stage 2 information flows described in TS 182 027 [2].

The possible enhancements of protocols will define the scope of new or enhanced protocol specifications.

Besides, the interaction with other Simulation Service will be considered.

NOTE: The present document relies on the architectural framework defined in TS 182 027 [2] for IMS-based IPTV Stage 2 and may need to be updated once the open issues identified in the present document are resolved.

The present document is applicable to:

- the interface between the User Equipment (UE) and the Call Session Control Function (CSCF);
- the interface between the S-CSCF and IPTV Service Control Functions (SCF);
- the interface between the S-CSCF and IPTV Service Discovery Functions (SDF);
- the interface between the S-CSCF and the Media Control Functions (MCF);
- the interface between the User Equipment (UE) and IPTV Service Selection Functions(SSF);
- the interface between the User Equipment (UE) and Elementary Control Functions (ECF)/Elementary Forwarding Functions (EFF);
- the interface between the User Equipment (UE) and IPTV Service Control Functions (SCF).

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# 2 References

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## 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 ES 282 007: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IP Multimedia Subsystem (IMS); Functional architecture".

- [2] ETSI TS 182 027: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IPTV Architecture; IPTV functions supported by the IMS subsystem".
- [3] ETSI TS 102 034 (V1.3.1): "Digital Video Broadcasting (DVB); Transport of MPEG-2 TS Based DVB Services over IP Based Networks".
- [4] ETSI TS 102 471: "Digital Video Broadcasting (DVB); IP Datacast over DVB-H: Electronic Service Guide (ESG)".
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- [9] IETF RFC 4825: "The Extensible Markup Language (XML) Configuration Access Protocol (XCAP)".
- [10] ETSI TS 187 003: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); NGN Security; Security Architecture".
- [11] ETSI TS 124 109: "Universal Mobile Telecommunications System (UMTS); Bootstrapping interface (Ub) and network application function interface (Ua); Protocol details (3GPP TS 24.109 Release 7)".
- [12] ETSI TS 183 023: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services; Extensible Markup Language (XML) Configuration Access Protocol (XCAP) over the Ut interface for Manipulating NGN PSTN/ISDN Simulation Services".
- [13] ETSI TS 102 539: "Digital Video Broadcasting (DVB); Carriage of Broadband Content Guide (BCG) information over Internet Protocol (IP)".
- [14] ETSI TS 133 222: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Generic Authentication Architecture (GAA); Access to network application functions using Hypertext Transfer Protocol over Transport Layer Security (HTTPS) (3GPP TS 33.222 Release 7)".
- [15] IETF draft-ietf-simple-xcap-diff-09: "An Extensible Markup Language (XML) Document Format for Indicating A Change in XML Configuration Access Protocol (XCAP) Resources".
- [16] ETSI TS 184 009: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN) Rules covering the use of TV URIs for the Identification of Television Channels".
- [17] IETF RFC 3925: "Vendor-Identifying Vendor Options for Dynamic Host Configuration Protocol version 4 (DHCPv4)".
- [18] IETF RFC 1035: "Domain names - implementation and specification".
- [19] IETF RFC 1034: "Domain names - concepts and facilities".
- [20] ETSI ES 283 003: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IP Multimedia Call Control Protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP) Stage 3 [3GPP TS 24.229 modified]".
- [21] ETSI ES 283 030: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Presence Service Capability; Protocol Specification [3GPP TS 24.141 V7.0.0, modified and OMA-TS-Presence-SIMPLE-V1-0, modified]".

- [22] IETF draft-channabasappa-sipping-app-profile-type-02: "Extension to the ua-profile Event Package to Support the Application Profile Type".
- [23] OMA-TS-Presence-SIMPLE-V1-0-20060725-A: "Open Mobile Alliance: Presence SIMPLE Specification".
- [24] ETSI TS 124 229: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3 (3GPP TS 24.229 Release 8)".
- [25] IETF RFC 4756: "Forward Error Correction Grouping Semantics in Session Description Protocol".
- [26] IETF draft-ietf-sip-xcapevent-03: "An Extensible Markup Language (XML) Configuration Access Protocol (XCAP) Diff Event Package".
- [27] IETF draft-stiemerling-rtsp-announce-01: "RTSP 2.0 Asynchronous Notification".
- [28] IETF RFC 3376: "Internet Group Management Protocol, Version 3".
- [29] IETF RFC 3810: "Multicast Listener Discovery Version 2 (MLDv2) for IPv6".
- [30] IETF RFC 2616: "Hypertext Transfer Protocol -- HTTP/1.1".
- [31] IETF RFC 2782: "A DNS RR for specifying the location of services (DNS SRV)".
- [32] IETF RFC 2246: "The TLS Protocol Version 1.0".
- [33] ETSI TS 102 822-3-1: "Broadcast and On-line Services: Search, select, and rightful use of content on personal storage systems ("TV-Anytime"); Part 3: Metadata; Sub-part 1: Phase 1 - Metadata schemas".
- [34] ETSI TS 101 154: "Digital Video Broadcasting (DVB); Specification for the use of Video and Audio Coding in Broadcasting Applications based on the MPEG-2 Transport Stream".
- [35] ETSI TS 102 822-4: "Broadcast and On-line Services: Search, select, and rightful use of content on personal storage systems ("TV-Anytime"); Part 4: Phase 1 - Content referencing".
- [36] ETSI ES 283 035: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Network Attachment Sub-System (NASS); e2 interface based on the DIAMETER protocol".
- [37] DSL Forum TR-069 Amendment 2: "CPE WAN Management Protocol v1.1".
- [38] ETSI TS 183 060: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Resource and Admission Control Subsystem (RACS); Re interface based on the DIAMETER protocol".

## 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] Void.
- [i.2] ETSI TS 183 017: "Telecommunications and Internet Converged Services and Protocols for Advanced Networking (TISPAN); Resource and Admission Control: DIAMETER protocol for session based policy set-up information exchange between the Application Function (AF) and the Service Policy Decision Function (SPDF); Protocol specification".

- [i.3] ETSI TS 183 033: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IP Multimedia; Diameter based protocol for the interfaces between the Call Session Control Function and the User Profile Server Function/Subscription Locator Function; Signalling flows and protocol details [3GPP TS 29.228 and 3GPP TS 29.229, modified]".
- [i.4] ETSI TS 129 329: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Sh interface based on the Diameter protocol; Protocol details (3GPP TS 29.329 Release 7)".
- [i.5] IEEE 1003.1-2004: "Standard for information technology - portable operating system interface (POSIX). Shell and utilities".

### 3 Abbreviations

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

ACK	ACKnowledge character
AP	Authentication Proxy
AS	Application Server
AUID	Application Unique ID
B2BUA	Back To Back UA
BC	BroadCast
BCG	Broadband Content Guide
CNGCF	Customer Network Gateway Configuration Function
CoD	Content on Demand
CSCF	Call Session Control Function
DHCP	dynamic Host Configuration Protocol
DNS	Domain Name System
DVB	Digital Video Broadcasting
DVBSTP	DVB SD&S Transport Protocol
ECF/EFF	Elementary Control Function/Elementary Forwarding Function
EPG	Electronic Program Guide
ERE	Extended Regular Expressions
ESG	Electronic Service Guide
FEC	Forward Error Correction
I-CSCF	Interrogation - Call Session Control Function
ICSI	IMS Communication Service Identities
IFC	Initial Filter Criteria
IGMP	Internet Group Management Protocol
IMS	IP Multimedia Subsystem
IP	Internet Protocol
IPTV	Internet Protocol TeleVision
MCF	Media Control Function
MDF	Media Delivery Function
MF	Media Function
MLD	Multicast Listener Discovery
NGN	Next Generation Network
NPT	Network Time Protocol
NPT	Normal Play Time
nPVR	network-side Personal Video Recorder
OMA	Open Mobile Alliance
P-CSCF	Proxy - Call Session Control Function
PSI	Public Service Identity
RACS	Resource and Admission Control Subsystem
RTCP	Real Time Control Protocol
RTP	Real Time Protocol
RTSP	Real Time Streaming Protocol
SAD	Service Action Data
SCF	Service Control Function