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SIST-TS ETSI/TS 101 909-13-1 V1.1.1:2005

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Digital Broadband Cable Access to the Public Telecommunications Network; IP Multimedia Time Critical Services; Part 13: Trunking Gateway Control Protocol; Sub-part 1: H.248 option

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Technical Specification

Digital Broadband Cable Access to the PublicTelecommunications Network; IP Multimedia Time Critical Services; Part 13: Trunking Gateway Control Protocol; Sub-part 1: H.248 option

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

The present document is part 13, sub-part 1 of a multi-part deliverable. Full details of the entire series can be found in part 1 [12].

Introduction

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The present document defines a solution based on H.248. The solution based on MGCP is defined in TS 101 909-13-2 [13].

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Where alternative solutions for the same interface are being considered, interoperability issues between the various IPCablecom system components need to be addressed. SIST-TS ETSI/TS 101 909-13-1 V1.1.1:2005

1   Scope

The present document specifies a profile of the H.248 protocol [1] for controlling media gateways between cable networks and the PSTN. This profile is known as Trunking Gateway Control Protocol (TGCP) version 1.

2   References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- 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.

- For a non-specific reference, the latest version applies.

[1]   ITU-T Recommendation H.248: "Gateway Control Protocol".

[2]   ETSI TS 101 909-2: "Digital Broadband Cable Access to the Public Telecommunications Network; IP Multimedia Time Critical Services; Part 2: Architectural framework for the delivery of time critical services over cable Television networks using cable modems".

[3]   ETSI TS 101 909-3: "Digital Broadband Cable access to the public telecommunications network; IP Multimedia Time Critical Services; Part 3: Audio Codec Requirements for the Provision of Bi-Directional Audio Service over Cable Television Networks using Cable Modems".

[4]   ETSI TS 101 909-11: "Digital Broadband Cable access to the public telecommunications network; IP Multimedia Time Critical Services; Part 11: Security".

[5]   IETF/RFC 2327 (1988): "SDP: Session Description Protocol".

[6]   IETF/RFC 2401 (1998): "Security Architecture for the Internet Protocol".

[7]   IETF/RFC 2402 (1998): "IP Authentication Header".

[8]   IETF/RFC 1889 (1996): "RTP: A Transport Protocol for Real-Time Applications".

[9]   IETF/RFC 2543: "Session Initiation Protocol".

[10]   IETF/RFC 2234: "Augmented BNF for Syntax Specifications: ABNF".

[11]   IETF/RFC 1890: "RTP Profile for Audio and Video Conferences with Minimal Control".

[12]   ETSI TS 101 909-1: "Digital Broadband Cable Access to the Public Telecommunications Network; IP Multimedia Time Critical Services; Part 1: General".

[13]   ETSI TS 101 909-13-2: "Digital Broadband Cable Access to the Public Telecommunications Network; IP Multimedia Time Critical Services; Part 13: Trunking Gateway Control Protocol; Sub-part 2: MGCP option."

[14]   IETF/RFC 2045: "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies".

3   Abbreviations

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

ASCII	American Standard Code for Information Interchange
AVP	Audio Video Profile
DNS	Domain Name System
IANA	Internet Assigned Number Authority
IP	Internet Protocol
MG	Media Gateway
MGC	Media Gateway Controller
MTA	Message Transfer Agent
PSTN	Public Switched Telephone Network.
RTCP	Real-time Transfer Control Protocol
RTP	Real-time Transfer Protocol
SDP	Session Description Protocol
SPI	Security Parameters Index
TGCP	Trunking Gateway Control Protocol
UDP	User Data Protocol
URI	Universal Ressource Identifier

4   Architectural assumptions

The present document applies to the interface between a Media Gateway Controller and a Media Gateway sitting at the boundary between a packet cable network and the PSTN.

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The overall architecture for interconnecting packet cable networks with the PSTN is described in TS 101 909-2 [2].

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5   Profile definition

This profile shall be entitled "TGCP". The version number shall be 1.0. This name shall be returned by conforming gateways when sending a ServiceChange command as part of the initial registration of the MG.

5.1   Support of packages

5.1.1   Mandatory packages

The following packages shall be supported:

Table 1: Mandatory packages

Package Name	Id	Version	Defined in
Generic	g	1	ITU Recommendation H.248 [1], annex E
Base Root	root	1	ITU Recommendation H.248 [1], annex E
Continuity	ct	1	ITU Recommendation H.248 [1], annex E
Network	nt	1	ITU Recommendation H.248 [1], annex E
TDM Circuit	tdmc	1	ITU Recommendation H.248 [1], annex E
Tone Detect	tonedet	1	ITU Recommendation H.248 [1], annex E
Call Progress Detect	cd	1	ITU Recommendation H.248 [1], annex E
Tone Generator	tonegen	1	ITU Recommendation H.248 [1], annex E
Call Progress Generator	cg	1	ITU Recommendation H.248 [1], annex E

5.1.2   Optional packages

The following packages may be supported:

Table 2: Optinal packages

Package Name	Id	Version	Defined in
Announcement	an	1	ITU Recommendation H.248 [1], annex K
Modem	mdm	1	ITU Recommendation H.248 [1], annex F
FaxModem	ftmd	1	ITU Recommendation H.248 [1], annex F
Fax	Fax	1	ITU Recommendation H.248 [1], annex F
Security	sec	1	TS 101 909-13-1 [12], clause A.1

5.1.3   Conditional packages

The following optional packages shall be supported under the specified conditions:

Table 3: Conditional packages

Package Name	Condition (e.g. trunk type supported)
Modem	Some of the codec supported by the cable networks are not transparent to modem signals.
FaxModem	Some of the codec supported by the cable networks are not transparent to modem signals.
Fax	Some of the codec supported by the cable networks are not transparent to modem signals.
Security	The RTP/RTCP services defined in TS 101 909-11 [4] are supported.
NOTE:	A list of permissible ciphersuites are specified in the IPCablecom Security Specification TS 101 909-11 [4].

5.2   Compatibility rules

This profile is based on ITU-T Recommendation H.248 [1] version 1 (06/00). The compatibility rules for packages, signals, events, properties and statistics and the H.248 protocol are defined in ITU-T Recommendation H.248 [1].

5.3   Naming conventions

5.3.1   MG and MGC names

MG and MGC names shall be in the form of a domain name. An example MGC name is: `mgc1.whatever.net`

Reliability is provided by the following precautions:

- MGs and MGCs are identified by their domain name, not their network addresses. Several addresses can be associated with a domain name. If a command cannot be forwarded to one of the network addresses, implementations shall retry the transmission using another address.

- MGs and MGCs may move to another platform. The association between a logical name (domain name) and the actual platform are kept in the Domain Name Service (DNS). MG and MGC shall keep track of the record's time-to-live read from the DNS. They shall query the DNS to refresh the information if the time-to-live has expired.