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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Gateway control protocol: Common ITU-T H.248 terminology – Release 2

ITU-T H-series Recommendations – Supplement 13

International Telecommunication Union

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Supplement 13 to ITU-T H-series Recommendations

Gateway control protocol:
Common ITU-T H.248 terminology – Release 2

Summary

Supplement 13 to the ITU-T H-series Recommendations provides a repository for ITU-T H.248 related terms that concern multiple ITU-T H.248.x Recommendations, Supplements, or the entire ITU-T H.248.x-series. This Supplement is a living document.

Release 2 adds further terms related to ITU-T X.200 | ISO/IEC 7498-1, as well as general naming conventions and protocol layer notations.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
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Keywords

Gateway control protocol, ITU-T H.248.

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* To access the Recommendation, type the URL http://handle.itu.int/ in the address field of your web browser, followed by the Recommendation's unique ID. For example, http://handle.itu.int/11.1002/1000/11830-en.

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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Introduction

All ITU-T Recommendations relating to the ITU-T defined gateway control protocol (GCP) are published within the ITU-T H.248.x-series of Recommendations. The core protocol itself is defined by [ITU-T H.248.1]. Protocol extensions (in the form of so-called ITU-T H.248 packages) and other material (such as profile guidelines) are the subject of self-contained Recommendations within the ITU-T H.248.x-series, see [ITU-T H.248.x].

Basically, all of these GCP-related Recommendations (plus some Supplements) share the same terminology. The set of GCP terms were historically divided in two classes: general GCP terms and package-specific GCP terms. The general terms with global GCP scope are the subject of the core protocol specification, see [ITU-T H.248.1], whereas package specific terms are typically located in the related ITU-T H.248.x-series Recommendations, see Figure 1.

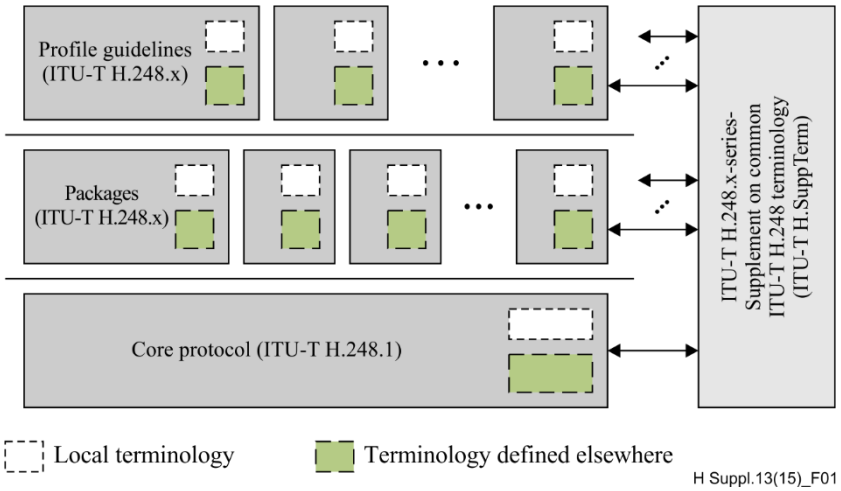

Figure 1 – Positioning of ITU-T H.Sup.13 versus the ITU-T H.248.x-series of Recommendations

When defining terms there are two basic issues:

1) the terms may affect multiple ITU-T H.248 documents, but not the entire series, leading to the question of the appropriate place for such terminology; and

2) the addition of new, global ITU-T H.248 terms would imply a revision of [ITU-T H.248.1], which may not be desirable for a single term.

This Supplement acts as a repository for such GCP-related terminology to alleviate the above issues.

Supplement 13 to ITU-T H-series Recommendations

Gateway control protocol: Common ITU-T H.248 terminology – Release 2

1 Scope

Within the scope of this Supplement are GCP-related terms that relate to multiple ITU-T H.248 documents.

Outside the scope of this Supplement are:

– terms not related to ITU-T H.248 technology;

– terms which affect a single ITU-T H.248.x Recommendation.

Release 2 adds:

– terms related to [ITU-T X.200];

– naming conventions and protocol layer notations.

2 References

[ITU-T H.248.x] ITU-T H.248.x-series of Recommendations, *Gateway Control Protocol.*

[ITU-T H.248.1] Recommendation ITU-T H.248.1 (2013), *Gateway control protocol: Version 3.*

[ITU-T X.200] Recommendation ITU-T X.200 (1994) | ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The basic model.*

[IETF RFC 1136] IETF RFC 1136 (1989), *Administrative Domains and Routing Domains. A Model for Routing in the Internet*.

3 Definitions

3.1 Terms defined elsewhere

In addition to the basic GCP terms defined by clause 3.2 of [ITU-T H.248.1], this Supplement uses the following terms defined elsewhere.

3.1.1 ISO end system [IETF RFC 1136]: End System (ES): An OSI system on which applications run. An end system has full seven-layer OSI functionality. Basically equivalent to an Internet host.

3.1.2 (N)-association [ITU-T X.200], clause 5.3.1.1: A cooperative relationship among (N)-entity-invocations.

NOTE – The (DTLS)-association [b-ITU-T H.248.93] and the (SCTP)-association [b-ITU-T H.248.97] relates to the concept of a (N)-connection, but not an (N)-association.

3.1.3 (N)-connection [ITU-T X.200], clause 5.3.1.2: An association requested by an (N+1)-entity for the transfer of data between two or more (N+1)-entities. The association is established by the (N)-layer and provides explicit identification of a set of (N)-data-transmissions and agreement concerning the (N)-data-transmission services to be provided for the set.

3.1.4 (N)-connection-endpoint [ITU-T X.200], clause 5.3.1.3: A terminator at one end of an (N)-connection within an (N)-service-access-point.

3.1.5 (N)-connection-endpoint-identifier [ITU-T X.200], clause 5.4.1.5: An identifier of an (N)-connection-endpoint which can be used to identify the corresponding (N)-connection at an (N)-service-access-point.

3.1.6 multiplexing [ITU-T X.200], clause 5.8.1.4: A function performed by an (N)-entity in which one (N–1)-connection is used to support more than one (N)-connection.

NOTE – The term multiplexing is also used in a more restricted sense to refer to the function performed by the sending (N)-entity while the term demultiplexing is used to refer to the function performed by the receiving (N)-entity.

3.2 Terms defined in this Supplement

This Supplement defines the following terms:

3.2.1 endpoint: For the purpose of the ITU-T H.248 series of Recommendations, an endpoint is an entity that generates and/or terminates information streams.

The term endpoint may be further qualified by prefixes or suffixes to provide more detail on the type of endpoint.

NOTE – An endpoint is equivalent to an open systems interconnection (OSI) end system.

3.2.2 media gateway: The two coupled functional entities of an ITU-T H.248 media gateway (MG) entity (see clause 3.2.3 of [ITU-T H.248.1]) and its associated ITU-T H.248 media gateway controller (MGC) entity (see clause 3.2.4 of [ITU-T H.248.1]).

NOTE – The ITU-T H.248 gateway represents a specific decomposition model in splitting an original monolithic user/control plane related network element into two, plane specific network elements (MG and MGC), interconnected by the ITU-T H.248 protocol.

3.2.3 master-slave control relationship: The ITU-T H.248 decomposed gateway follows a hierarchical control model in the network control plane (primarily related to call service control and media/bearer control functions). The control hierarchy constitutes a master-slave relationship, with the MGC as master and the MG as the slave entity.

NOTE – Annexes C.2 or C.3 of [b-ITU-T Q.Sup31] and [b-ITU-T Q.Sup32] provide examples of functional-to-physical mapping models according to the ITU-T H.248 master-slave control relationship.

3.2.4 media gateway (MG) autonomous mode: For a particular function, the MGC delegates some (but not all) service specific control decisions down to the MG level. The MG provides a local decision function. The MG autonomous control is limited to decisions with MG available information only.

3.2.5 media gateway controller (MGC) strictly controlled mode: For a particular function, the control decisions are exclusively under MGC responsibility, the MG degenerates to a pure execution unit.

3.2.6 stream endpoint tuple (SEPT): The generalization of a stream endpoint pair (SEPP) towards multiple associated stream endpoints (SEPs) within the same context. All SEPs share the same StreamID value. The stream topology is given by the topology descriptor settings.

4 Abbreviations and acronyms

This Supplement uses the following abbreviations and acronyms:

DTLS Datagram Transport Layer Security

ES End System

GCP Gateway Control Protocol

MG Media Gateway

MGC	Media Gateway Controller
OSI	Open Systems Interconnection
SEP	Stream Endpoint
SEPP	Stream Endpoint Pair
SEPT	Stream Endpoint Tuple
TLS	Transport Layer Security

5 Conventions in ITU-T H.248.x-Recommendations

5.1 Protocol layer notation

The (N)-, (N+1)- and (N–1)-notation and naming scheme for individual layers and sublayers is used in ITU-T H.248.x Recommendations for naming according to clause 3 of [ITU-T X.200].

5.2 Naming conventions for "connection" objects

The ITU-T X.200 (N)-connection entity relates basically to the concept of an ITU-T H.248 bearer or bearer connection. ITU-T H.248.x-Recommendations may use the (N)-connection naming scheme in order to qualify the type of connection.

5.3 Naming conventions for "endpoint" objects

The use of the term "endpoint" in ITU-T H.248.x-Recommendations may be further qualified by using the ITU-T X.200 notation of (N)-endpoints. This is used to provide more detail on the type of endpoint.

Examples:

– abstract ITU-T H.248 bearer endpoint: (N)-connection-endpoint, (N)-relay-endpoint;

– transport layer security (TLS): (TLS)-session-endpoint, (TLS)-connection-endpoint.

5.4 Protocol stack notation

When representing the layers of a protocol stack, ITU-T H.248 series Recommendations in general follow the convention that a protocol layer is represented to the left of its lower protocol layer separated by a '/' character (i.e., notation such as (N+1)/(N)/(N-1)). However some ITU-T H.248 series Recommendations do follow the IETF RFC convention where a protocol layer is represented to the right of its lower protocol layer (i.e., notation such as (N-1)/(N)/(N+1)).

6 Handling of new terms

A new ITU-T H.248.x-Recommendation under development identifies new terminology. Such terms are normally the subject of ITU-T H.248.x clause 3.2 definitions according to the Recommendation template. When defining new terms, it has to be decided whether a new term is only limited to the Recommendation itself, or whether multiple Recommendations could benefit from the new term. Where the term may benefit multiple Recommendations the term should be added to this Supplement. The new ITU-T H.248.x-Recommendation may then refer to these terms within clause 3.1 – "Terms defined elsewhere".

Bibliography

[b-ITU-T H.248.93] Recommendation ITU-T H.248.93 (2014), *Gateway control protocol: ITU-T H.248 support for control of transport security using the datagram transport layer security (DTLS) protocol*.

[b-ITU-T H.248.97] Recommendation ITU-T H.248.97 (2015), *Gateway control protocol: ITU-T H.248 support for control of SCTP bearer connections.*

[b-ITU-T Q.Sup31] Supplement 31 to the ITU-T Q-series of Recommendations (2000), *Technical Report TRQ.2141.0: Signalling requirements for the support of narrow-band services over broadband transport technologies – Capability set 2 (CS-2).*

[b-ITU-T Q.Sup32] Supplement 32 to the ITU-T Q-series of Recommendations (2002), *Technical Report TRQ.2141.1: Signalling requirements for the support of narrowband services via broadband transport technologies – CS-2 signalling flows.*

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