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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Infrastructure of audiovisual services – Communication
procedures

Gateway control protocol: RTP control protocol package

Recommendation ITU-T H.248.57

ITU-T

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Recommendation ITU-T H.248.57

Gateway control protocol: RTP control protocol package

Summary

Recommendation ITU-T H.248.57 defines an ITU-T H.248 package for ephemeral terminations with real-time transport protocol-based streams and allows the media gateway controller to control the *handling* of real-time transport protocol control protocol (RTCP) traffic within the ITU-T H.248 stream. RTCP handling comprises functions such as the indication of whether an RTCP flow is used, resource management functions for specific RTCP resources and the allocation scheme of transport port values.

This revision supports additional RTCP port allocation rules in the context of real-time transport protocol (RTP) transport multiplexing.

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History

Edition	Recommendation	Approval	Study Group	Unique ID*
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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.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

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Recommendation ITU-T H.248.57

Gateway control protocol: RTP control protocol package

1 Scope

This Recommendation contains functionality to describe the use of the real-time transport protocol control protocol (RTCP) in ITU-T H.248-controlled media gateways. RTCP is used, for example, to monitor the quality of service and to convey information about the participants in an on-going real-time transport protocol (RTP) session.

[ITU-T H.248.1] assumes that when an RTP stream is specified in a local or remote descriptor, that an RTCP flow may be established according to the rules defined in section 11 of [IETF RFC 3550]. Additional ITU-T H.248/RTCP behaviour is defined in clause E.12.5 of [ITU-T H.248.1]. However, some media gateways may not instantiate an RTCP flow. For interoperability and for some applications such as firewall and network address translation (NAT), it is important for the media gateway controller (MGC) to be certain of the media gateway (MG) behaviour with respect to port allocation for RTCP. The "RTCP Handling Package" defined in this Recommendation provides a property to control this RTCP flow allocation.

This revision supports additional RTCP port allocation rules in context of RTP transport multiplexing.

1.1 Overview

RTCP *handling* may comprise the following seven functions:

- 1) Indication of the *existence* of an RTCP flow of an RTP session (RTP with or without RTCP).
- 2) Indication of *endpoint identifiers* on *RTP level* that are relevant for both RTP and RTCP (e.g., synchronization source (SSRC)).

In addition, if an RTCP flow exists:

- 3) Resource management of *endpoint identifiers* on *layer 4* (UDP *ports*; i.e., reservation, allocation and indication of a specific allocation rule) for RTCP flows.
- 4) Resource management of *endpoint identifiers* on *RTP level* (e.g., CNAME) for RTCP flows.
- 5) Resource management of *other resources* required for RTCP flows (e.g., reservation and allocation of transport capacity).
- 6) Indication of *specific modes of operation* for RTCP (e.g., layer 4 multiplexing of RTP and RTCP flows, or multiplexing mode of RTCP reports in a single RTCP packet).

Orthogonal to the above functions:

- 7) Mapping *scheme* of RTP and RTCP flows on ITU-T H.248 streams.

This Recommendation deals with functions one and three only. Other functions are out of the scope of this Recommendation.

In addition, this Recommendation assumes that regarding function seven, RTP and RTCP flows are always mapped into a single ITU-T H.248 stream. Other mapping schemes are out of the scope of this Recommendation and may make this Recommendation's procedures irrelevant.

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 H.248.1] Recommendation ITU-T H.248.1 (2013), *Gateway control protocol: Version 3*.
<<http://www.itu.int/rec/T-REC-H.248.1>>
- [IETF RFC 3550] IETF RFC 3550 (2003), *RTP: A Transport Protocol for Real-Time Applications*.
<<http://www.ietf.org/rfc/rfc3550.txt>>
- [IETF RFC 3605] IETF RFC 3605 (2003), *Real Time Control Protocol (RTCP) attribute in Session Description Protocol (SDP)*.
<<http://www.ietf.org/rfc/rfc3605.txt>>
- [IETF RFC 4566] IETF RFC 4566 (2006), *SDP: Session Description Protocol*.
<<http://www.ietf.org/rfc/rfc4566.txt>>
- [IETF RFC 5761] IETF RFC 5761 (04/2010), *Multiplexing RTP Data and Control Packets on a Single Port*.
<<http://www.ietf.org/rfc/rfc5761.txt>>

3 Definitions

3.1 Terms defined elsewhere

None.

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

3.2.1 RTCP flow: The sending and reception of RTCP packets as described by section 6 of [IETF RFC 3550]. The RTCP flow relates to an "(ITU-T H.248) *control flow*" (see clause 3.2.9 of [ITU-T H.248.1]).

NOTE – An RTCP flow comprises all RTCP traffic on an RTP session. An RTCP flow may be further separated into RTCP sub-flows due to different RTCP report types. An RTCP sub-flow is identified by a specific RTCP packet type codepoint.

3.2.2 RTP flow: The sending and reception of RTP packets of an *RTP session*. The RTP flow relates to an "ITU-T H.248 *media flow*" (see [ITU-T H.248.1]).

3.2.3 RTP/RTCP transport multiplexing: A single IP transport (L4) port for RTP and RTCP packets.

NOTE – This term may be also referred to as "RTP transport multiplexing".

3.2.4 RTP session: An RTP session comprises a single RTP flow and an optional RTCP flow.