

Real-time Transport Protocol (RTP) Recommendations for SIPREC

(draft-eckel-siprec-rtp-rec-03)

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Purpose

- ▶ Provides recommendations and guidelines for RTP and RTCP in the context of SIPREC.

In order to communicate most effectively, the Session Recording Client (SRC) and the Session Recording (SRS) SHOULD utilize the mechanisms provided by RTP in a well defined and predicable manner. It is the goal of this document to make the reader aware of these mechanisms and provide recommendations and guidelines.

- ▶ Exists as a standalone document to facilitate discussion of the recommendations
- ▶ Anticipated that portions of this document will be incorporated into draft-ietf-siprec-protocol

Contents

- ▶ Roles - SRC acting as an RTP Translator/Mixer/Endpoint
- ▶ RTCP - feedback and Identification
- ▶ RTP Profile – AVP/AVFP, SAVP/SAVFP
- ▶ SSRC, CSRC
- ▶ SDES and CNAME
- ▶ Keepalive – for inactive and recvonly/sendonly streams
- ▶ RTCP Feedback Messages – FIR, PLI, TMMBR
- ▶ Symmetric RTP/RTCP

Issue 1: RFC 2119 Language

- ▶ Draft current states:

This document is completely informational. It includes no requirements and no normative language.

- ▶ Within the protocol draft, we state requirements; therefore:

- ▶ Solution:

Updated draft to use RFC 2119 language as deemed appropriate for inclusion within the protocol draft

Issue 2: SRC Positioning

UA <-- CS --> SRC <-- RS --> SRS

Figure 1: UA as SRC

- ▶ Above figure was subject of much confusion (e.g. is this the only model).
- ▶ Solution:

Added the figure below to help clarify:

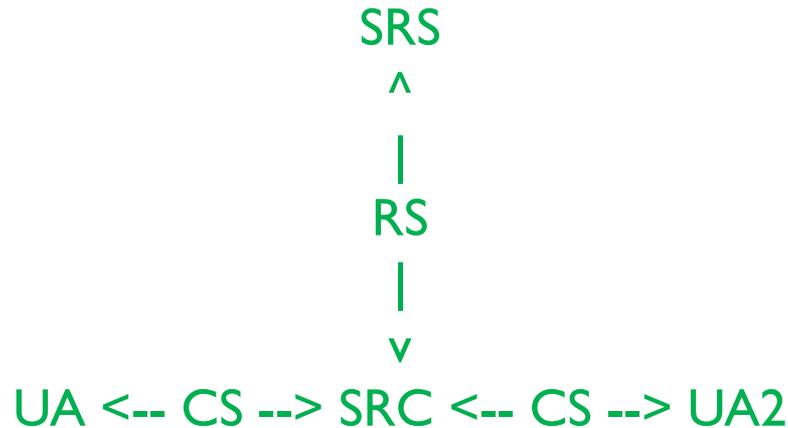


Figure 2: B2BUA as SRC

Issue 3:

Roles – Translator/Mixer/Endpoint

- ▶ Many comments/questions on this section
- ▶ Not just one type of translator
- ▶ Translator/Mixer start to blur
- ▶ Many options for handling of RTCP
- ▶ Solution:
 1. correct typos and cleaned up wording
 2. subdivided translator into two (forwarder and transcoder)
 3. added implications of each model on RTCP handling
 4. added packet loss handling for each model, including implications on SRC, SRS, and UAs

Issue 4: Single vs. Multiple SDES Packets

The Source Description (SDES), as defined in [RFC3550], contains an SSRC/CSRC identifier followed by a list of zero or more items, which carry information about the SSRC/CSRC. End systems send one SDES packet containing their own source identifier (the same as the SSRC in the fixed RTP header). A mixer sends one SDES packet containing a chunk for each contributing source from which it is receiving SDES information, or multiple complete SDES packets.

▶ **Solution:**

Added - ... if there are more than 31 such sources.

Issue 5: CNAME

- ▶ It was recommended to make section on CNAME a subsection of section on SDES as CNAME is an SDES item.
- ▶ Solution:
- ▶ CNAME moved to subsection (9.1) of SDES section (9).

Issue 6: FIR vs. PLI

- ▶ **FIR: Full Intra Request**

- ▶ Requires the media sender sends a Decoder Refresh Point at the earliest opportunity

- ▶ **PLI: Picture Loss Indication**

- ▶ Informs the encoder of the loss of an undefined amount of coded video data belonging to one or more pictures
- ▶ MAY transmit an intra-picture to achieve resynchronization

- ▶ **Currently draft states:**

Using the FIR command to recover from errors is explicitly disallowed, and instead the PLI message defined in AVPF [RFC4585] should be used. The PLI message reports lost pictures and has been included in AVPF for precisely that purpose.

Issue 6: FIR vs. PLI (cont)

RFC 5104 states:

- ▶ FIR SHALL NOT be sent as a reaction to picture losses -- it is RECOMMENDED to use PLI instead.
- ▶ FIR SHOULD be used only in situations where not sending a decoder refresh point would render the video unusable for the users.
- ▶ Example where sending FIR is appropriate:
 - ▶ multipoint conference, a new user joins the session and no regular decoder refresh point interval is established
 - ▶ video switching MCU that changes streams
- ▶ **Solution: Added this clarification to draft**

Issue 7: Symmetric RTP/RTCP

- ▶ Numerous comments and suggestion received on text.
- ▶ Solution: Reworded as follows:

Within an SDP offer/answer exchange, RTP entities choose the RTP and RTCP transport addresses (i.e., IP addresses and port numbers) on which to receive packets. When sending packets, the RTP entities may use the same source port or a different source port as those signaled for receiving packets.

When the transport address used to send and receive RTP is the same, it is termed "symmetric RTP" [RFC4961].

Likewise, when the transport address used to send and receive RTCP is the same, it is termed "symmetric RTCP" [RFC4961].

Issue 7: Symmetric RTP/RTCP (cont)

- ▶ **Solution: (cont)**

When sending RTP, it is REQUIRED to use symmetric RTP.

When sending RTCP, it is REQUIRED to use symmetric RTCP.

Although an SRS will not normally send RTP to an SRC, it will send RTCP as well as receive RTP and RTCP. Likewise, although an SRC will not normally receive RTP from an SRS, it will receive RTCP as well as send RTP and RTCP.

Note: Symmetric RTP and symmetric RTCP are different from RTP/RTCP multiplexing [RFC5761].

Issues not addressed in this draft

- ▶ **Mapping for RTP/RTCP fields to metadata**
 - ▶ This is a work in progress occurring within draft-ietf-siprec-metadata-05
- ▶ ...