RTCP HR – High resolution VoIP Metrics Report Blocks

draft-ietf-avt-rtcphr-02

IETF 70, Vancouver

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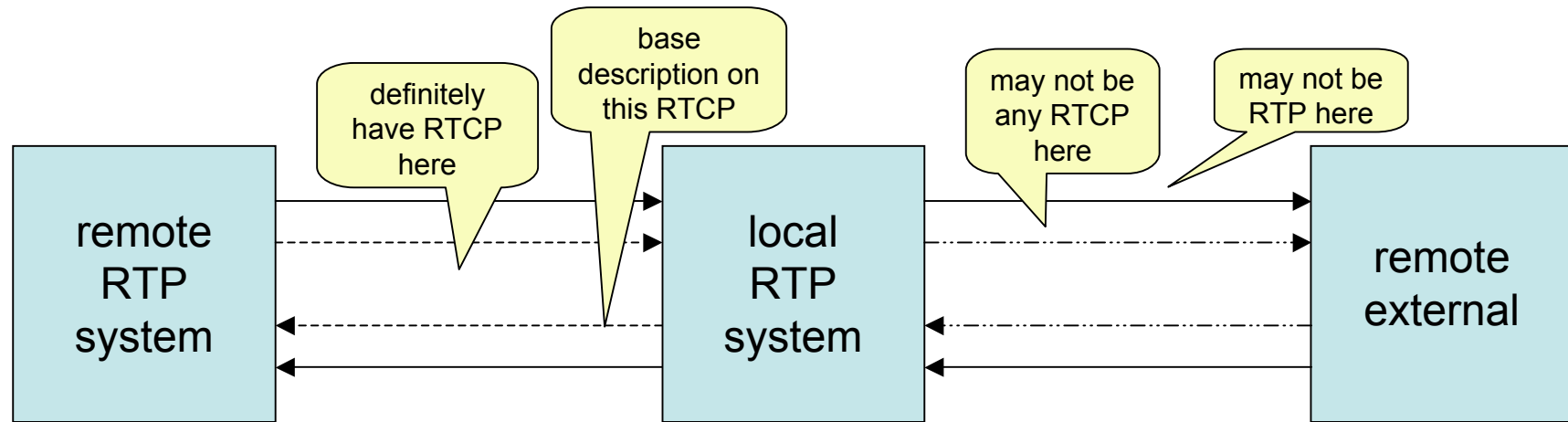- Changes since IETF 69
- Remaining issues
- Last call?

Changes since IETF 69

- Removed informative text on RTCP and translators – draft-hunt-avt-rtcptrans

- Number of report block types reduced from 9 to 3

- Added SDP control based on profiles

Changes (1) – 3 block types, not 9

- Doesn't affect metrics details – metrics options are at sub-block level
- Used to have two dimensions of block type
  - Cumulative/Interval/Alert (retained)
  - Locally Generated/Relayed from Remote IP Endpoint/Relayed from Remote Ext Endpoint
  - No longer have second dimension

Changes (1) – how to report the "external" network

remote RTP system → local RTP system → remote external

- definitely have RTCP here
- base description on this RTCP
- may not be any RTCP here
- may not be RTP here

- Three cases – local system is an end system, a mixer, or a translator
- End systems cannot, and mixers should not, relay external transport metrics
  - So should not relay complete RTCP HR report blocks
  - But may report external application quality (e.g. RTCP HR Call Quality sub-block)
- Translators relay reports, preserving SSRC information about the measuring system and the source of the measured RTP
- Section 5 contains detailed procedure for relaying by RTP systems
  - Translators commonly relay reports
  - End systems or mixers MAY relay reports within a single network cloud

Changes (2) – SDP control by profile

- SDP control was "FFS" in earlier drafts
- Options considered: none (i.e. config only), HR on/off, detailed control, or profiles
- Precedent - RTCP XR (RFC 3611) uses detailed control (block level, & parameters within)
- Detailed control for HR would involve:
  - Block (cumulative/interval/alert)
  - Which metrics (sub-blocks) and parameters within
  - Forwarding behaviours
- This looks too complex so we propose profile-based control in section 7.3 of the draft

Changes (2) – SDP control by profile

- Proposal would require an IANA registry of profiles
  - Example non-trivial profile called prf-trans in section 7.3.3
- Proposed new syntax is a list of xr-prf in the forward direction:

    "a=rtcp-prf:" [xr-prf *(SP xr-prf)] CRLF

- For unicast Offer/Answer, list is in order-of-preference (section 7.4)
- Terminating system picks one and returns it
- Not restricted to controlling RTCP HR
- Pre-defined profiles include "use RFC3550 only", "use your configured default", and "none"

Changes (2) – SDP control by profile

- Translators observe exchange but may not understand the profile agreed by end systems/mixers, or may understand the profile but not implement it fully.
- Current ideas for translators which don't understand/don't implement agreed profile are as follows…
- Translator which doesn't understand the profile should try to become transparent
    - SHOULD forward RFC 3550 RTCP (translated)
    - MAY forward any further RTCP which it understands & can translate
    - MUST NOT generate its own reports
- Translator which understands but doesn't fully implement the profile has a choice:
    - EITHER do its best to participate (translate and forward, and generate its own reports as requested, as far as it is able)
    - OR try to become transparent as above
    - Choice will depend on policy, and the translator's level of capability to participate
- This area needs discussion/agreement with experts in sipping and/or mmusic

Remaining issues

- Consensus on "SDP profile" approach
- Add new section on how to report via draft-ietf-sipping-rtcp-summary-02 ?
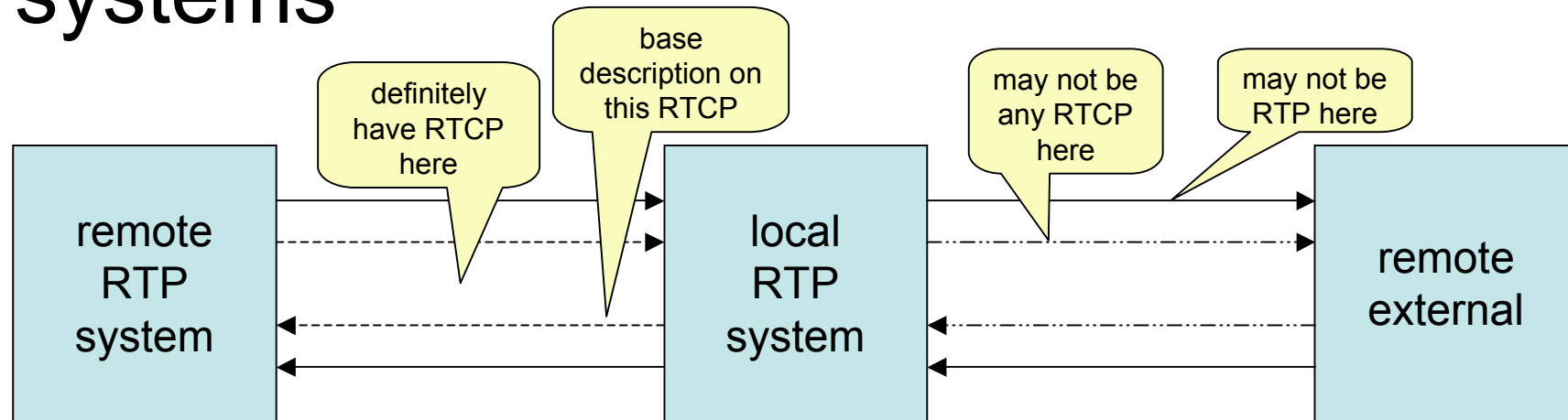- Other things you tell us about !
- Nits

Working group last call

- We believe the current draft -02 has fixable rough edges but no showstoppers
- We think the next draft should be suitable for WGLC
- Your review and comments please, to help complete this work!

- Thank you…

- … any questions?

Backup slides

Changes (1) Reports and external systems

definitely have RTCP here

base description on this RTCP

may not be any RTCP here

may not be RTP here

remote RTP system

local RTP system

remote external

- The following slides address whether we need the dimension of block types
  - Locally Generated
  - Relayed from Remote IP Endpoint
  - Relayed from Remote Ext Endpoint
- Clearly need blocks which are Locally Generated!
- Don't need "Relayed from Remote IP Endpoint" because the local system can just relay the report under the remote RTP system's SSRC/CNAME
- Remaining question is whether we need "Relayed from Remote Ext Endpoint". Three cases:
  - (1) local RTP system is an end system and remote external system is not an RTP system
  - (2) local RTP system is a translator and remote external system is an RTP system
  - (3) local RTP system is a mixer and remote external system is an RTP system
- These three cases analysed below and show we don't need, and shouldn't have, the Locally Generated/Relayed from Remote IP/Relayed from Remote Ext dimension
- Hence only 3 blocks, for Cumulative/Interval/Alert
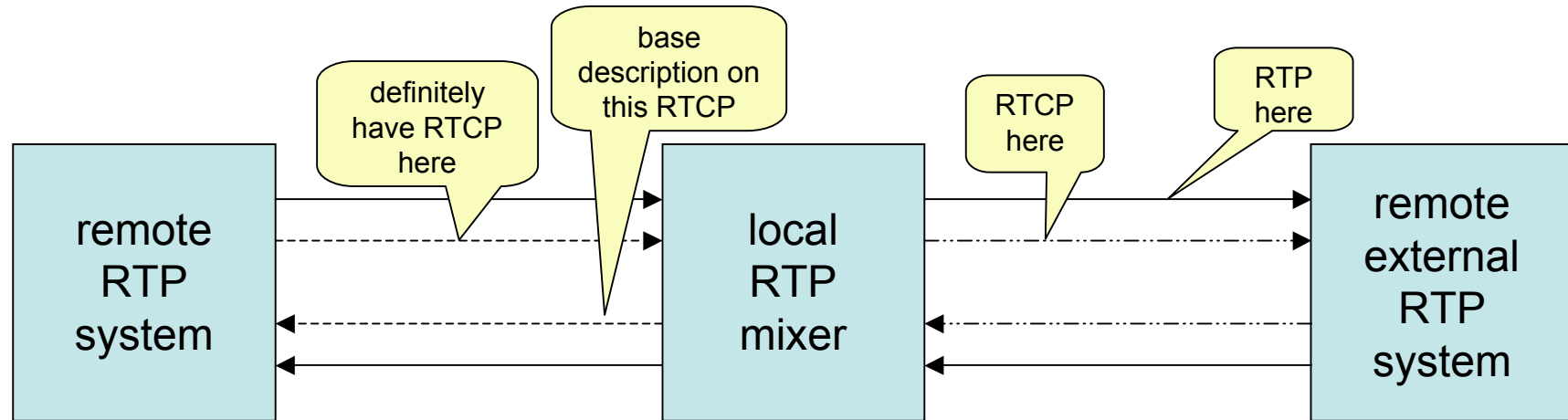
Changes (1) - Case 1: RTP end system
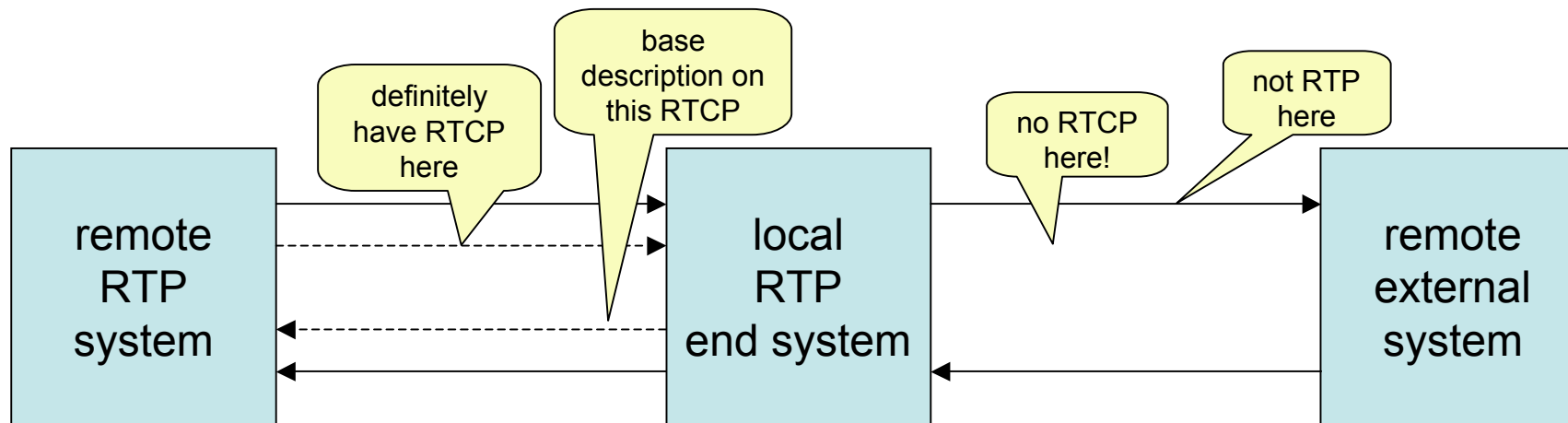
- No RTP/RTCP externally so no transport reports are available from the external cloud

- End system could supply (as RTCP to RTP peer) application-level summary of quality of external network if it has this data. Covered by Remote metrics in the Call Quality sub-block

- It's not possible to find values for the mandatory Loss/Discard and Delay (transport-level) sub-blocks which would be needed to populate a true RTCP HR report which could be "Relayed from remote Ext endpoint"

- Suggests not appropriate to have a mechanism for forwarding full HR reports from external systems

Changes (1) Case 2: RTP translator
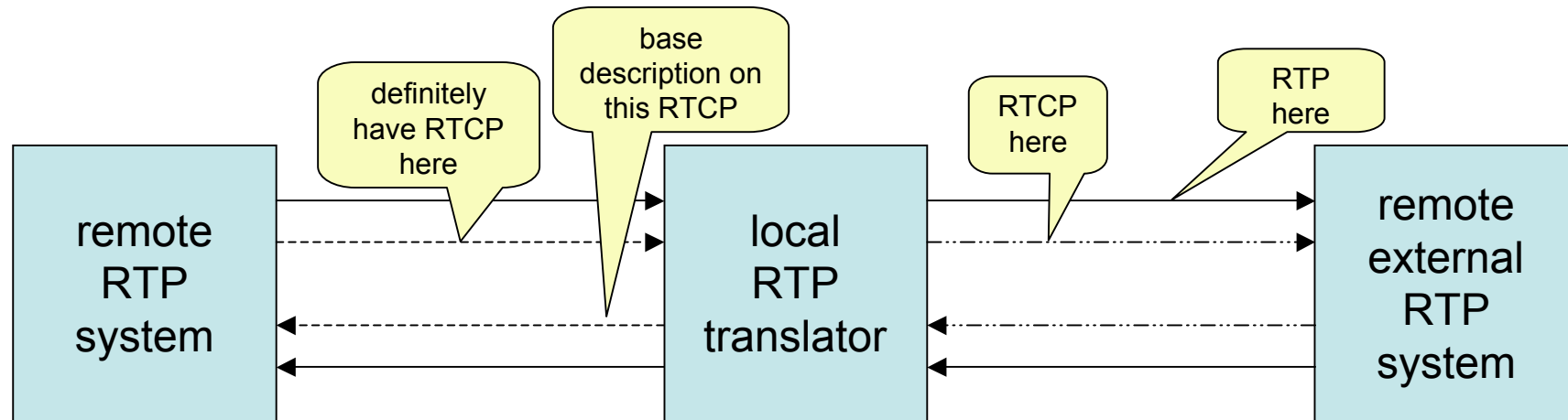
- Translator can make its own measurements and send them out under its own SSRC/CNAME
- Translator can forward reports made by other RTP systems (end systems, mixers, and other translators) under the other system's SSRC/CNAME
- No need for additional block types
- see draft-hunt-avt-rtcptrans-00

Changes (1) Case 3: RTP mixer

remote RTP system ·········· local RTP mixer ·········· remote external RTP system

definitely have RTCP here

base description on this RTCP

RTCP here

RTP here

- Mixer should not forward transport-level reports between clouds, e.g. from external to internal cloud (RFC3550)
- Mixer could supply (as RTCP HR to RTP peer in both directions) application-level summary of quality of network "other side of mixer" if it has this data. Covered by Remote metrics in the Call Quality sub-block.
- Suggests not appropriate to have extra block types for forwarding full HR reports from external systems across mixers