Port Mapping

Alternative solution

Tom Van Caenegem

Port Mapping Alternative
Cross-symmetric muxing w/o port mapping message exchange

Principle: *RTP Rx RTP receive port for unicast RTP session = RTP Rx RTCP transmit port in SSM RTP session*

Same IP address

RTP Rx   NAPT

RS (unicast RTP session)

FT (SSM RTP session)

FT announced P4 as RTCP Receive port

RTCP (RR, NACK, RAMS-R)   (no cookie)

P3   P3^   P4

RTP / RTCP (SR,RAMS-I)*

P4

RS announced P4 as RTP source port in unicast RTP session

P3   P3^

RTCP (RR, RAMS-T)   P2

P3   Px^

RS announced P2 as RTCP Receive. port with P2<> P4

* RTP & RTCP muxed on single port
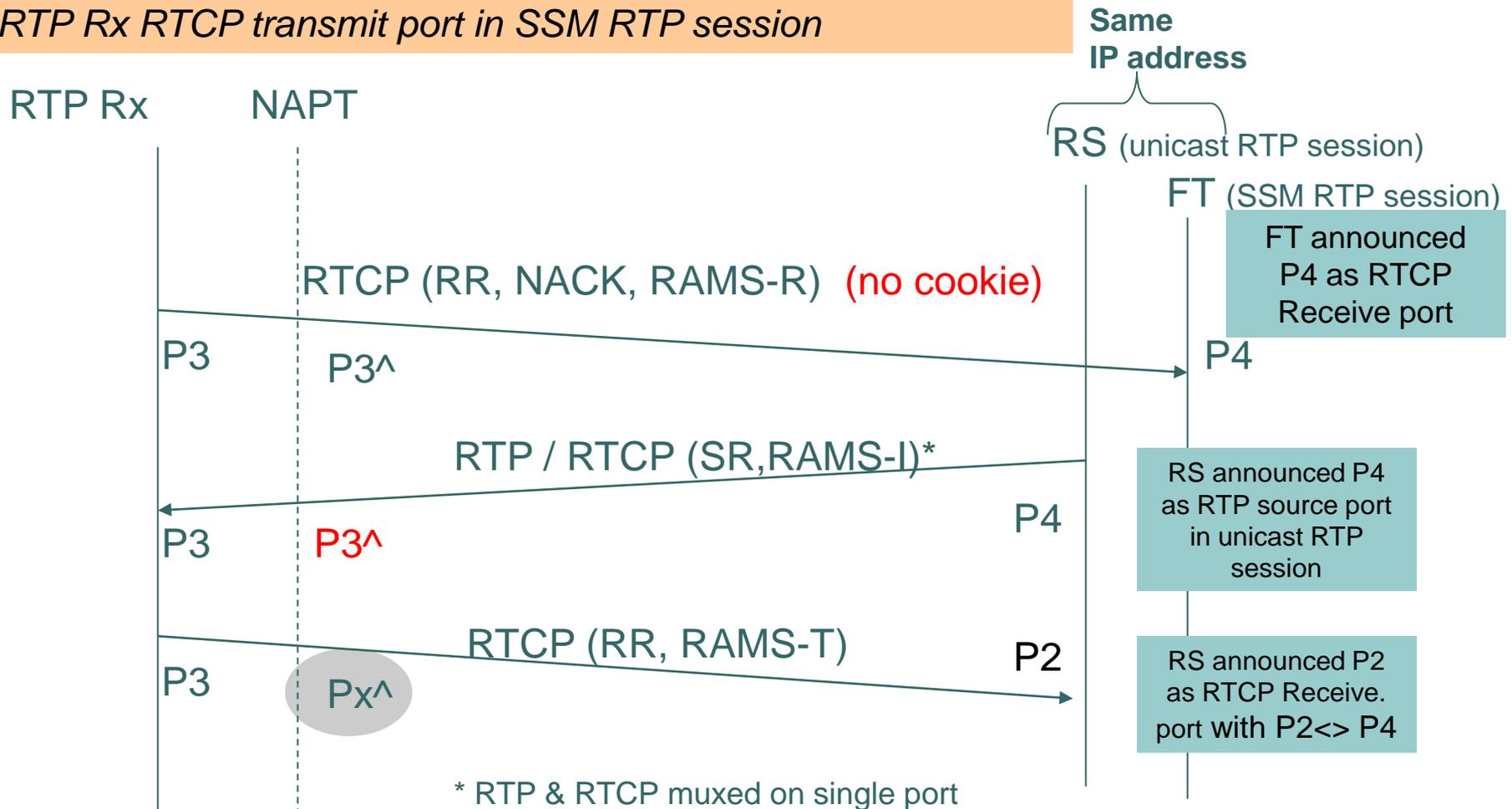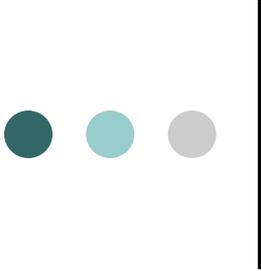
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Cross-symmetric muxing w/o port mapping message exchange

- What it brings:
  - No delay because of port mapping message/cookie exchange
  - Requires no RTP keep alive
    - RTCP FB from RTP Rx primes/refreshes NAPT port state
- Expressed concerns:
  - Is not aligned with (classical) RTP/RTCP architectures
    - Two RTCP components of two different sessions share same transport address, be it in two different directions
  - Solution does not always work <u>when 2 or more RTP receivers behind same NAPT choose the same C-NAME and the same SSRC</u>
    - In this case, the RS/FT cannot associate the RTCP messages transmitted by the RTP receivers in the unicast sessions with the right receiver <u>when NAPT has an "address and port dependent" behaviour</u> (RFC 4787)
- Way forward:
  - Specify solution for use only with appropriate NAT behaviour
  - Specify solution in combination with receiver-generated cookie (where cookie must be truly randomly generated, and exchanged with every client-generated RTCP message)
  - Abandon this solution
  - others?