Network-based Rapid Acquisition of Multicast RTP Sessions

draft-xia-avt-proxy-rapid-acquisition-00

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Motivation

- Network performs rapid acquisition on behalf of RR without its involvement.
    - It is difficult to update all legacy RRs which are largely deployed to support rapid acquisition.
    - Rapid acquisition introduces extra complexity on RR when RR frequently exchanges required parameters with network.
    - In radio network, rapid acquisition signaling messages will consume radio resources and the RR's power when RR is a mobile terminal.

Overview
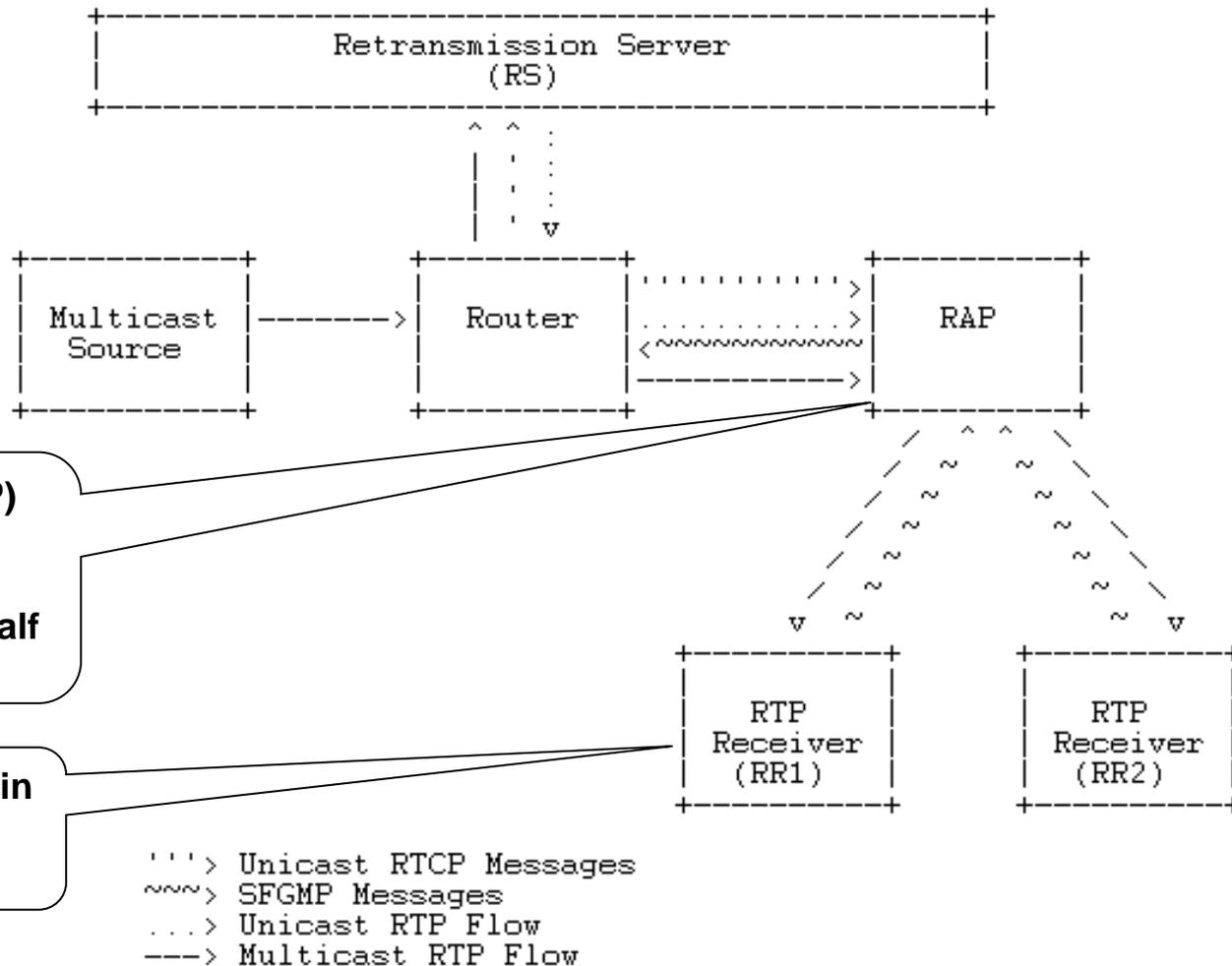
Rapid Acquisition Proxy (RAP) performs rapid acquisition related signaling with a retransmission server on behalf of the RTP receiver

No requirement to participate in any rapid acquisition related signaling

Basic Solution

- This network-based rapid acquisition of multicast RTP session is referred to as Proxy RAMS (PRAMS)

  – Rapid Acquisition Proxy (RAP) supports IGMP/MLD Proxy [RFC4605].

  – Rapid Acquisition Proxy (RAP) performs rapid acquisition related signaling.

  – Rapid Acquisition Proxy (RAP) translates unicast RTP burst into multicast format.

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+----------------+    +----------+    +----------------+    +----------+
| Retransmission |    |          |    |     Rapid      |    |   RTP    |
|     Server     |    |  Router  |    |  Acquisition   |    | Receiver |
|     (RS)       |    |          |    |  Proxy(RAP)    |    |   (RR)   |
+----------------+    +----------+    +----------------+    +----------+
        |                  |                  |                  |
        |             RTP Multicast           |                  |
        ------------------------------------->|----------------->|
        |                  |                  |                  |
        |                  |                  |                  |
        |                  |                  |<~ SFGMP Join ~~  |
        |                  |                  |                  |
        |                  |                  |                  |
        |<''''''''''''''RTCP Proxy RAMS-R ''  |                  |
        |                  |                  |                  |
        |                  |                  |                  |
        |'' (RTCP Proxy RAMS-I)'''''''''''>  |                  |
        |                  |                  |                  |
        |                  |                  |                  |
        |.. Unicast RTP Burst ............>  |                  |
        |                  |                  |                  |
        |                  |          Format Transfer            |
        |                  |                  |                  |
        |                  |                  | Multicast RTP    |
        |                  |                  |     Burst        |
        |                  |                  |----------------->|
        |                  |                  |                  |
        |                  |           SFGMP Proxy               |
        |                  |                  |                  |
        |                  |<~ SFGMP Join ~~  |                  |
        |                  |                  |                  |
        |             RTP Multicast           |                  |
        ------------------------------------->|----------------->|
        |                  |                  |                  |
        |<''''''''''''''''' RTCP RAMS-T ''    |                  |
        |                  |                  |                  |
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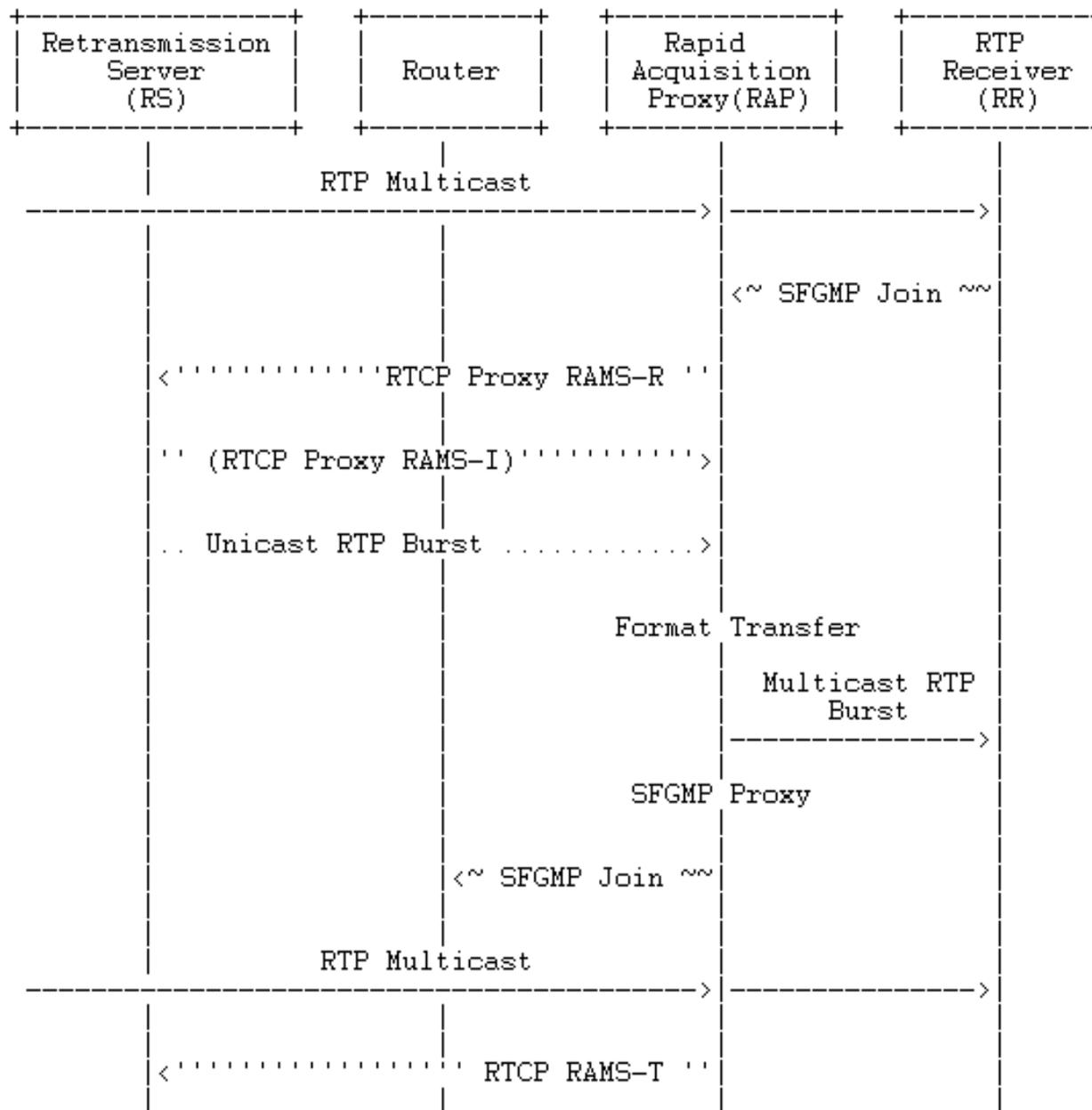
Request

- Request that PRAMS is taken on as a WG item.