Processing of Registration and de-registration events in SRP

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End system registration and de-registration

High layer applications

(DE)REGISTRATION_STREAM.request  (DE)REGISTRATION_STREAM.indication

MRP-based SRP

MAD

MAD_Join(Leave).request  MAD_Join(Leave).indication

MRP Participant

MRP messages

RESV messages

LLC

Frame Transmission  Frame Reception
Registration Event

0. On receipt of MAD_Join.indication for a certain port

Implications:
(1) This port hasn’t joined the stream yet;
(2) There is(are) active listener(s) reachable via this port. This port will join the stream.

1. Consistency of Stream Identifier & Talker MAC address (10.3.4.2.a)

YES

Since we consider only one-to-many multicast cases, one Stream Identifier shall have only one associated Talker.

NO

2. Error

3. Has this stream registered? (10.3.4.2.b)

YES

Set the Reservation Message Port Map as “Forwarding” for this port (10.3.4.2.b)

NO

4. Create an entry for this stream in Stream Information Database (10.3.4.2.b)

5. 

This node is the talker;
and Reservation Status == INITIAL (10.3.4.2.c)

YES

6. Talker’s local initialization (10.3.4.2.c)

NO

7. Set the Reservation Status according to the result of local initialization (10.3.4.2.c)

8.
Reservation Event (cont.)

Reservation Status == TIMEOUT or FAILED
(10.3.4.2.d)

Send out a RESV message via this port with TIMEOUT of FAILED status
(10.3.4.2.d)

Exit

Local admission control and resource reservation for the stream on this port
(10.3.4.2.e)

Reservation Status == SUCCEEDED
(10.3.4.2.e)

Set the Stream Data Port Map as "Filtering" for this port
(10.3.4.2.e)

Exit

Resource reservation successful?
(10.3.4.2.e)

Send out a RESV message via this port with SUCCEEDED status
(10.3.4.2.e)

Set the Stream Data Port Map as "Forwarding" for this port
(10.3.4.2.e)

Exit

Reservation on upstream (or local initialization) was timeout or failed. No need to local admission control for this newly joined port. Port map for stream data is by default set to "Filtering"

Reservation Status is "INITIAL". So this is not the talker (otherwise initialization will change the status). MRP will propagate the registration to upstream. No further operation needed for SRP
De-registration event

On receipt of MAD_Leave.indication for a certain port:

- There is no active listener reachable via this port anymore. This port will leave the stream.

1. Corresponding stream exists?
   - YES: Set the Stream Data Port Map as "Filtering" for this port (10.3.4.2.f)
     - No data frame of this stream will be forwarded to this port
   - NO: Release any reserved resource for this stream on this port (10.3.4.2.f)

2. Exit

3. NO: Set the Reservation Message Port Map as "Filtering" for this port (10.3.4.2.g)
   - No Resv message of this stream data will be sent out via this port

4. Any other registered port for this stream? (10.3.4.2.g)
   - NO: Exit
   - YES: Remove this stream’s entry in the Stream Information Database (10.3.4.2.g)