Use MMRP as-is in SRP

Felix Feng
SAIT / SAMSUNG Electronics
feng.fei@samsung.com

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Two phases
- Listeners register their presence.
- Talker initiate the admission control operations.

Documented as a new application of MRP (like MMRP and MVRP)
- Could also be considered as a combination of:
  - a registration protocol as a new application of MRP
    - dealing with registration and de-registration events (clause 10.3.4)
  - a reservation protocol
    - dealing with reservation messages and reservation timers (clause 10.4)
Different from MMRP in:

- **Attribute**
  - MMRP defines two types of attributes:
    - *Group membership information*. This indicates the presence of MMRP participants that are members of a particular Group (or Groups), and carries the group MAC Address(es) associated with the Group(s).
    - *Group service requirement information*. This indicates that one or more MMRP participants require Forward All Groups or Forward Unregistered Groups to be the default Group filtering behavior.
  - Current SRP draft defines only one type of attribute.
    - *Stream membership information*. Stream ID, Talker MAC address and Higher Level Tag are included.

- **Context**
  - MMRP uses the set of VLAN Contexts that correspond to the VLANs that are supported by the VLAN Bridged Local Area Network.
  - Current SRP draft uses a subset of the basic context, taking into consideration the Talker MAC Address, to optimize the propagation of MAD_Join.request and MAD_Leave.request.

- **Response to registration/de-registration events**
  - In MMRP, the registration/de-registration events result in the creation or updating of Group Registration Entries in the Filtering Database.
  - In current SRP draft, the registration/de-registration events only result in the creation or updating of entries (especially the Reservation Message Port Map part) in the Stream Reservation Database, but not in the Filtering Database.
    - The rationale here is that the stream entries in Filtering Database shall indicate the result of admission control; 802.1Qav will simply use the Filtering Database for its forwarding operation decision.
Current SRP draft (D0.3)

- Registration Protocol (New MRP application)
  - Join/Leave/LeaveAll messages
    - Attribute: Stream ID, Talker MAC, HigherLevelTag

- Registration/De-registration Events

- Reservation Protocol
  - Resv. Msg. Port Map
  - Stream Data Port Map
  - Stream Reservation Database
  - Context
  - Filtering Database
  - 802.1Qav Functions
Use MMRP as-is in SRP

- Use MMRP complete unchanged as registration protocol
  - In SRP document, only reservation protocol will be specified.
    - MMRP provide registration/de-registration events to the reservation protocol.

- Changes to current SRP draft
  - Attribute
    - Only Stream ID can be included in Group membership information Attribute.
      - Talker MAC address and Higher Level Tag will not be included.
        - No optimization on propagation of MAD_Join.request and MAD_Leave.request.
        - Will not be able to register a higher layer stream ID rather other a MAC address.
  - Context
    - Base VLAN Contexts will be used.
      - No optimization on propagation of MAD_Join.request and MAD_Leave.request.
        - Every bridge will have to keep an active MMRP state machine for every registering stream in the network, even this stream does not traverse this bridge.
  - 802.1Qav interaction
    - Stream entries in Filtering Database indicate only the registration of a downstream listener
      - Bridge shall not forward AVB stream data frames based on the Filtering Database stream entries only.
      - 802.1Qav will need another separate database which indicates the result of admission control. This database will be updated by the reservation protocol.
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Registration Protocol
(New MRP application)

Join/Leave/LeaveAll messages

Filtering Database
(Resv. Msg. Port Map)

Attribute: Stream ID

Reservation Protocol

Reservation/De-registration Events

Reservation Messages context

Admission control results
(Stream Data Port Map)

802.1Qav Functions

Reservation messages
Comparison and Summary

Current draft proposal

Pros

- Optimization of registration event propagation
  - Less signaling transmission overhead to the network
  - Less signaling processing overhead to the bridges
- Interaction mechanism between 802.1Qav forwarding engine and FDB is the same as current implementations
- Extensions to the registration PDUs enable more flexibility
  - For example, initiating the registration with a higher layer application ID rather than L2 stream ID

Cons

- Need to define both the registration protocol and reservation protocol

New proposal

Pros

- Only need to define the reservation protocol
  - Simplify the documentation work

Cons

- Registration events are flooded
  - More signaling transmission overhead to the network
  - More signaling processing overhead to the bridges
- Implementation of 802.1Qav forwarding engine will be more complicated