

1 *Insert the following clause after clause 10, and appropriately re-number the clauses fol-*  
2 *lowing.*

## 3 4 5 **11. Stream reservation protocol (SRP)**

6  
7 <<Brief introduction of SRP and the organization of this clause.>>

8  
9  
10 This clause describes the Stream Reservation Protocol (SRP). SRP is a signaling protocol to enable the end-  
11 to-end management of resource reservation for QoS guaranteed streams. It facilitates the registration, de-  
12 registration, and retention of resource reservation information in relevant network elements. SRP is an  
13 essential component for automatic configuration in bridged local area network applications that require  
14 latency and bandwidth guarantees.

15 This clause:

- 16 a) Provides an overview of the use of SRP within an AVB network,
- 17 b) Describes the architecture of SRP entity for end stations and bridges,
- 18 c) Provides an overview of protocol operations,
- 19 d) Provides a detailed specification of the protocol, and
- 20 e) Describes the structures of protocol data units exchanged between SRP entities.

### 21 22 **11.1 Use of SRP within an AVB network**

23  
24 <<This sub-clause describes:

- 25 a) The role of SRP in an AVB system.
  - 26 1) SRP is a signaling protocol carrying the requests and results of stream reservations. The
  - 27 admission control algorithm, scheduling algorithm and enforcement of resource reservation is
  - 28 out of the scope of SRP.
- 29 b) The assumptions for the use of SRP.
- 30 c) The interaction of SRP with other protocol entities.
- 31 d) Integration of SRP with high layer applications.

32  
33 We need to answer following questions in this sub-clause:

- 34 a) Point-to-point link assumption
  - 35 1) Will we assume operPointToPointMAC is always TRUE?
  - 36 2) Otherwise, we will need one resource manager for each shared media segment. SRP interact
  - 37 with the segment resource manger for admission control and resource reservation in the
  - 38 corresponding segment. In this case, will the operation of segment resource manger be defined
  - 39 in 802.1Qat or somewhere else?
- 40 b) Assumption on stream types that SRP will take care of.
  - 41 1) Unicast streams.
  - 42 2) Point-to-multipoint stream.
  - 43 3) Multipoint-to-point stream?
  - 44 4) Multipoint-to-multipoint stream?
- 45 c) Stream ID format and its allocation
  - 46 1) Will VLAN ID be a part of a stream ID? There was a proposal that uses Talker MAC addresses
  - 47 plus VLAN IDs as stream IDs.
  - 48 2) Will unicast address be used?

3) Will we assume that talkers and listeners know the stream IDs before the stream reservation starts? Otherwise, will the stream ID allocation protocol be one part of SRP, or be specified somewhere else out of 802.1Qat?

d) Examples on integration with high layer applications (UPnP-AV, RSVP)

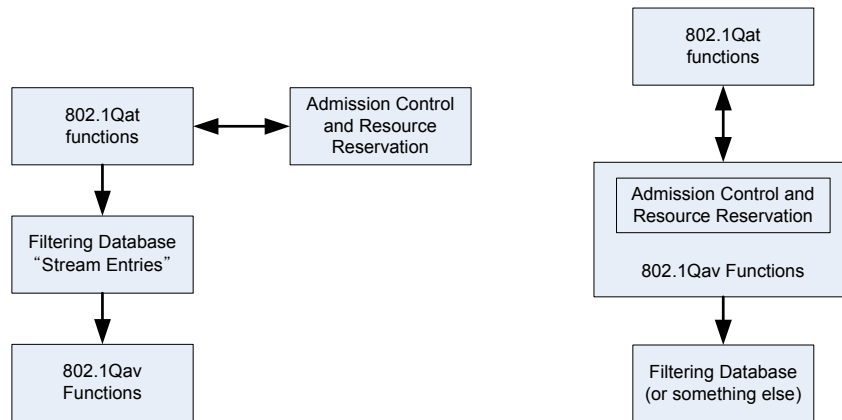
>>

### 11.2 SRP architecture

<<This sub-clause mainly gives details on the interaction between SRP and other protocol entities. It provides:

- a) Primitives between SRP and high layer applications (these primitives are for end stations):
  - 1) Initiate\_Registration.request
  - 2) Terminate\_Registration.request
  - 3) Reservation\_Received/Status.indication
  - 4) Reservation\_Terminated.indication?
  - 5) Registration\_Received/Status.indication
  - 6) Registration\_Terminated.indication?
  - 7) Initiate/Update\_Reservation.request
  - 8) Terminate\_Reservation.request
- b) Primitives between SRP and admission control/resource reservation service provided by 802.1Qav.
  - 1) Initiate/Update\_Admission.request
  - 2) Admission\_Result.indication
  - 3) Terminate\_admission.request
  - 4) Terminate\_admission.indication

Different from previous draft, which specifies “Stream Entries” in FDB and implies the behavior of stream data forwarding, here we assume 802.1Qav will take care of configuring data forwarding behavior after it receives the admission request (by configuring FDB or other methods).



D0.3

New

>>

## 11.3 Protocol operations

<<This sub-clause provides an informal overview of SRP operations. It describes the functions and operations of registration protocol and reservation protocol.

We need to answer following questions in this sub-clause:

- a) Options on retaining or non-retaining of partial reservation.
  - 1) These options distinguish what happens when a reservation request fails. In the retaining option, some links are left dangling with resource allocations, and the listener must clean this up. In the non-retaining option, the intermediate bridges clean this up automatically. Current draft assume the retaining mode will be used, since we can always simply initiate the de-registration starting from the listener rather than initiate it on each intermediate bridge.
- b) Dynamic updating capabilities.
  - 1) Will the talkers dynamic update the resource requirements in the reservation messages they send?
  - 2) If the answer to the above question is yes, what is the expected behavior if an updated request is failed?
- c) Stream management information.
  - 1) There was proposal adding specific layer 2 signaling to provide stream management information. But a more general way to do this is to use MIB rather than define different signaling for different management information.

>>

## 11.4 Protocol specification

### 11.4.1 Registration protocol specification

<<This sub-clause specifies the registration protocol. Two options are on the table now:

- a) Use MMRP as-is for the registration protocol
- b) Use a modified MMRP for the registration protocol. Changes may include:
  - 1) PDU format; Talker MAC address, resource requirement and high layer information might be included in registration PDU.
  - 2) MMRP context; A subset of base spanning tree context will be used to reduce unnecessary declarations and registrations.
  - 3) Action upon registration/de-registration events; FDB will not be updated upon registration/de-registration events. This depends on whether 802.1Qav wants 802.1Qat to do this.

We need to select one out of these two options in this sub-clause.

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### 11.4.2 Reservation protocol specification

<<This sub-clause specifies the reservation protocol. Sub-clause 10.4 of D0.3 goes here. Procedures of sending and receiving reservation signaling will be described here.>>

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## **11.5 Structure and encoding of SRP Protocol Data Units**

### **11.5.1 Registration PDUs**

<<In case that we use MMRP as-is for registration protocol, we will just refer to MMRPDUs in this sub-clause. In case that we use a modified MMRP for registration, registration PDUs will follow the basic structure and encoding of MRP.>>

### **11.5.2 Reservation PDUs**

<<Some issues to be addressed in defining the structure an encoding of reservation PDU:

- a) Structure. TLV or fixed format?
- b) Tspec. Parameters need be fixed before we finish the document.
- c) Optional fields? Hop count, end-to-end delay, per-hop information, etc.

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