IEEE P802.1Qdd Resource Allocation Protocol (RAP)

Introduction to Draft 0.0

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Overview of **D0.0**

- Prepared based on the text contribution in [dd-chen-draft-text-contribution-0319-v01](#)
- But not yet formatted using the 802.1Q FM template
  - The editor will use the FM template from the next draft version
- Two new subclauses in Clause 99 filled with content

### Clause 99

- 99.4 Definition of RAP parameters
  - 99.4.1 RAP base parameters
  - 99.4.2 RAP port parameters
  - 99.4.3 RAP SR class domain parameters
  - 99.4.4 RAP SR class port parameters
  - 99.4.5 RAP reservation modes

- 99.5 RAP attributes and TLV encoding
  - 99.5.1 Attribute type definitions
  - 99.5.2 TLV Structure
  - 99.5.3 Domain Attribute TLV
  - 99.5.4 Talker Announce Attribute TLV
  - 99.5.5 Listener Attach Attribute TLV
  - 99.5.6 Talker Announce Multiplex-Stream Attribute TLV
  - 99.5.7 Listener Attach Multiplex-Stream Attribute TLV
  - 99.5.8 Listener Announce Multiplex-Stream Attribute TLV
  - 99.5.9 Talker Attach Multiplex-Stream Attribute TLV
  - 99.5.10 Organizationally Defined sub-TLV
Fully configurable SR Class

The set of **RAP SR class domain parameters** defined in 99.4.3

- On a per-SR class per-device basis
- Describing the characteristics of an SR class supported on that device
- Carried by **Domain Attribute** for exchanges between neighbors and subject to consistency checks for detection of domain boundaries
- Fully configurable via the managed objects (to be in clause 12)
- No default values for a default SR class defined by Qdd
  - But can be specified by other standards, e.g. a profile
Introduction of RESERVATION-MODE

RESERVATION-MODE specified in 99.4.5

- The values for srClassReservationMode (99.4.3.2), one of the RAP SR class domain parameters used to characterize a given SR class

- Identifying the reservation method and algorithm used by RAP to reserve streams that use certain QoS functions and specifying the following
  - transmission selection algorithm (SP, CBS, ATS)
  - whether using scheduled traffic, e.g. CQF, (not defined as a transmission selection algorithm by 802.1Q)
  - which attributes and sub-TLVs
  - which TSpec format
  - latency and resource calculation algorithm (as informative?)

- A unique identifier formed using OUI or CID + Index (like ECT-ALGORITHMs in 802.1Q)
  - The values specified in this standard use OUI=00-80-C2
Support for Redundancy

- **streamVlanIdList** (99.4.1.3) allows use of multiple VIDs by a compound stream
  - One per Bridge, containing a list of VIDs allocated to different VLANs or a given VLAN configured on that Bridge
  - Carried in Domain Attribute and passed to Talker end stations
  - Choice of VID(s) for use by a Talker made by its higher layer entities

- **Reservation ID** (99.5.4.1) identifies a reservation made for each member stream
  - A 2-tuple carried by each reservation attribute and consisting of a **StreamID** that identifies a compound stream and a **VID** that identifies a path.

- **TalkerPartialFailed** (99.5.4.3 c) a third Talker Declaration Type used only for redundancy
  - Can be declared when multiple Talker attributes with the same StreamID but a different VID are merged by a CB bridge located at the stream merging point
  - Indicating that at least one path ok and one or more other paths failed
The choice of which is made on a per SR Class basis and determined by **RESERVATION-MODE** assigned to that SR Class.
Support for Stream Multiplexing (Aggregation)

- The support for Stream Multiplexing (aggregation based on use of CQF) as described in dd-chen-flow-aggregation-0119-v03 requires use of special reservation attributes and a distinct reservation flow.

- 4 (optional) attribute types are specified in D0.0, but not yet with content.
  - 2 for Talker-Multiplexing Stream (scheduling distributed by a single Talker)
    - Talker Announce Multiplex-Stream attribute (99.5.6)
    - Listener Attach Multiplex-Stream attribute (99.5.7)
  - 2 for Listener-Multiplexing Stream (scheduling distributed by a single Listener)
    - Listener Announce Multiplex-Stream attribute (99.5.8)
    - Talker Attach Multiplex-Stream attribute (99.5.9)