# IEEE P802.1Qdd **R**esource **A**llocation **P**rotocol (**RAP**)

## Introduction to Draft 0.0

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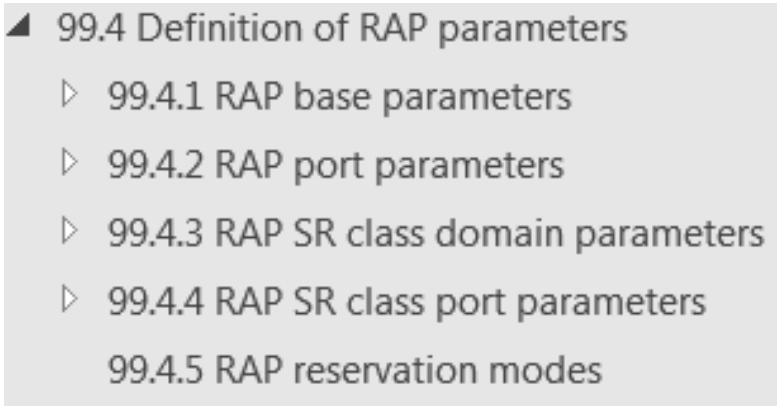
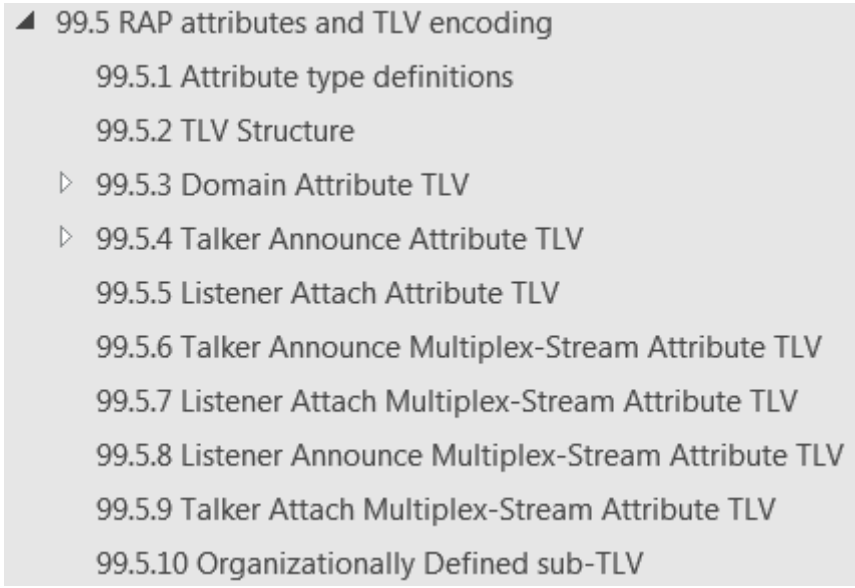
# Overview of D0.0

- 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



# 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

# Two TSpec Types

- ***TSpec Type 1 sub-TLV*** (99.5.4.8) – Class Measurement Interval based
  - Same as the one used by AVB in MSRPv0
  - For use with CBS, CQF, etc

| | Octet | Length |
|---|---|---|
| Maximum SDU Size (99.5.4.8a) | 1 | 2 |
| Maximum Interval Frames (99.5.4.8b) | 3 | 2 |

- ***TSpec Type 2 sub-TLV*** (99.5.4.9) – Token Bucket based
  - See contribution dd-chen-RAP-ATS-0619-v02
  - For use with ATS, etc

| | Octet | Length |
|---|---|---|
| Maximum SDU Size (99.5.4.8a) | 1 | 2 |
| Minimum SDU Size (99.5.4.8b) | 3 | 2 |
| Committed Information Rate (99.5.4.8b) | 5 | 8 |
| Committed Burst Size (99.5.4.8b) | 9 | 2 |

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)**