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

Editor's Update for Draft 0.6

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IEEE 802.1 Plenary, March 2022

Current Status of D0.6

- Next draft of 802.1Qdd is D0.6
  - Not yet uploaded at the time of this presentation.
  - Expected to be available at around the beginning of April, 2022.
  - Intended for a Task Group ballot.

Changes from D0.5

- Incorporation of results of the comment resolution for D0.5.
- **A completely reworked RAP Propagator in subclause 99.7.**
- **Addition of per-hop Latency computation algorithms for ATS and SP.**
- Several technical corrections and enhancements.
- Annex Z updated to include newly discovered open issues.

Reworked RAP Propagator in 99.7

- In D0.6, subclause 99.7 defined by D0.5 will be replaced by a reworked version presented at the Feb. 21 TSN weekly meeting.
  - See the uploaded presentation and text contribution.

- The reworking of this subclause is intended to improve the clarity and readability of the technical contents specified in D0.5.

- The enhancements in the reworked version include:
  - Reduced nesting levels of subclauses under 99.7.
  - The operation of RAP Propagator specified by a single state machine, along with associated variables and procedures, which handles all relevant events, to avoid concurrency.
  - Variables with various scopes reorganized into (single/multiple-dimension) arrays, making them conveniently referencable in the state machine and procedures.
  - Protocol actions executed by the procedures (wherever possible) described in pseudocode.

Per-hop Latency Computation for ATS and SP

- The determination of per-hop worst-case latency for Streams is an essential step in the process of stream reservation.
  - A RAP Bridge deems a Stream to be “unreservable”, if the worst-case latency through that Bridge computed for that Stream exceeds the “guaranteed” maximum latency (also termed “per-hop latency budget”, a per-RA class per port pair variable configurable by management).

- The algorithm for computing per-hop worst-case latency is specific to the mechanisms (queuing, shaping, gating, etc.) used for stream transmission.

- D0.6 will provide latency computation algorithms for ATS and SP.
  - Integrated into the processing flow and described in terms of procedures in 99.7 RAP Propagator.
  - For ATS: based on the delay analysis described in Annex V of IEEE Std 802.1Qcr-2020.
  - For SP: based on the contribution dd-grigorjew-strict-priority-latency-0320-v02.pdf.
  - Assuming the use of toke-bucket TSpec in both cases.

Thank you