P802.1Qcz Status

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Agenda

• P802.1Qcz background and references
• Draft standard status and strategies
• Next steps
Short Summary

• Change summary since May meeting
  – Impact of Qcr restructuring – based on Qcr/D1.1
  – Reference diagram update
  – Forwarding process clause restructuring

• Editor’s draft d0.2 posted to Qcz page
  – https://1.ieee802.org/tns/802-1qcz/
One Slide Congestion Isolation Refresh

Today – Without Congestion Isolation

Congestion Isolation

Congested Flow

Victim Flow

Congested Queue

Normal Queue

Isolate

Isolate

CIM

PFC

HOLB
Proposed changes aligned with Qcr

• Based on Mick Seaman proposal for Qcr 8.6.5 restructuring
• Use of per-stream filtering and metering elements:
  – 8.6.5 Flow classification and metering
    • Minor updates to figure 8-13 and text to include CI
    • 8.6.5.1 General flow classification
    • 8.6.5.2 Per-stream classification and metering
      – 8.6.5.2.2 PSFP support
      – 8.6.5.2.2 ATS support
      – 8.6.5.2.3 CI support - (new clause)
    • 8.6.5.3 Stream identification
    • 8.6.5.4 Maximum SDU Size Filters
    • 8.6.5.5 Stream gating
    • 8.6.5.6 Flow Meters
    • 8.6.5.7 ATS Schedulers
  – 8.6.6 Queuing frames
  – 8.6.10 Stream gate control state machines
    • NOTE: May need some text in here indicating that stream gates are always open for CI
  – 8.6.12 Congestion Isolation state machines – (possible new clause)
    • NOTE: Need to decide if such machines are needed for maintaining order between queues
    • Prefer to put this in clause 98 for CI specifically.
Qcr Diagram Relevance

Figure 8-13—Flow classification and metering

- Egress filtering (8.6.4)
- Flow classification and metering (8.6.5)
  - General flow classification and metering (8.6.5.1)
  - Per-stream classification and metering (8.6.5.2)
    - Per-Stream Filtering and Policing, PSFP
    - ATS Filtering and Eligibility Time Assignment
      - Stream identification (8.6.5.3)
        (PSFP, ATS)
      - Maximum SDU size filtering (8.6.5.4)
        (PSFP, ATS)
      - Stream gating (8.6.5.5)
        (PSFP, ATS)
      - Flow metering (8.6.5.6)
        (PSFP)
      - ATS eligibility time assignment (8.6.5.7)
        (ATS)
- Queuing frames (8.6.6)

Not used by CI

Used by CI

Always Open for CI, but remaps IPV

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*Identifies the stream and the processing (PSFP, ATS, both, or neither) applied to each frame.

*Can determine internal frame processing priority, and can (separately) enforce permitted arrival times for scheduled streams. Both optional for any given stream, but can provide coexistence with strict time scheduled traffic.

*Required PSFP functionality, supports MEF 10.3 flow metering. Can use and modify discard eligible frame marking, for both PSFP and ATS.
CI Specific Forwarding Figure

Figure 8-16—Congestion Isolation filtering and assignment functions
Next Steps

• Refactor clause 8 for Qcr changes
• Document variables and functions
• State Machines or pseudo-code as needed.
• Task Group Ballot