

# **Annex to IEEE P802.1Qdv, Enhancements to Cyclic Queuing and Forwarding (ECQF)**

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dv-finn-ECQF-annex-1122-v01

# Sources for this suggested outline

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1. **[mCQF]** [new-finn-multiple-CQF-0921-v02](#), Norman Finn
2. **[PQ]** [new-finn-pulsed-queuing-amendment-0122-v02](#), Norman Finn.
3. **[Agg1]** [dv-finn-CQF-stream-aggregation-v01](#), Norman Finn
4. **[Agg2]** [dv-SChen-StreamAggregationEnhencedCQF-0916-v01](#), Chen Shuang and Wang Tongtong.
5. **[Syn]** [new-finn-CQF-sync-method-1121-v1](#), Norman Finn

# Purpose of this contribution

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This author suggested five main parts for the structure of P802.1Qdv in [new-finn-pulsed-queuing-amendment-0122-v02](#):

1. Conformance sections in Clause 5 [PQ].
2. Sections in Clause 8 to augment Asynchronous Traffic Shaping (ATS) to support count-based and time-based output bin assignment [PQ].
3. A protocol for adjusting receiver bin timing boundaries [Syn].
4. Managed objects to control ECQF [PQ].
5. An informative annex describing the application of ECQF to solve typical usage scenarios.

**The present contribution offers an outline for the informative annex.**

# Annex AZ (Informative) Enhanced Cyclic Queuing and Forwarding (ECQF)

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## AZ.1 Introduction

Very brief introduction to ECQF, and a section-by-section description of the remainder of the annex, in the typical 802.1Q style.

## AZ.2 ECQF timing model

A description of the timing model, which is essential for understanding latency and buffer requirement calculations. Taken from [mCQF] section 2.

## AZ.2 ECQF multiple classes of service

A description of the requirements for operating more than one ECQF queue on the same port. Taken from [mCQF] section 3.

# Annex AZ (Informative) Enhanced Cyclic Queuing and Forwarding (ECQF)

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## AZ.4 Count-based bin assignment

Operation of count-based bin assignment, its interaction with time-base bin assignment, and its uses for ingress conditioning and cycle time changes.

Taken from [mCQF] section 7.

# AZ.5 Stream aggregation using ECQF

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## AZ.5.1 Introduction

A brief description of stream aggregation, including a brief description of the differences between explicit and implicit aggregation, and the relationship between QoS aggregation and forwarding decisions. Also, a list of subsections in AZ.5. From [Agg1] and [Agg2].

## AZ.5.2 Aggregation

Using time-based and count-based bin assignment to combine a number of Streams into an aggregate Stream (for QoS purposes). From [Agg2].

## AZ.5.3 Dis-aggregation

Using time-based and count-based bin assignment to separate an aggregate Stream into individual Streams. From [Agg2].

# AZ.5 Stream aggregation using ECQF

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## AZ.5.4 Combined aggregation and dis-aggregation

Applying both aggregation and dis-aggregation to the same Streams in a single bridge. From [Agg2].

# Annex AZ (Informative) Enhanced Cyclic Queuing and Forwarding (ECQF)

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## AZ.6 Buffer requirements

Buffer size computation, including ingress conditioning, intentional additional delay, and stream aggregation. From [mCQF], [Agg1] and [Agg2].

## AZ.7 End-to-end latency

Latency computation. From [mCQF].

## AZ.8 Additional considerations

This section discusses a number of miscellaneous issues brought up in [mCQF] including interaction with frame preemption, very long links, balancing latency and bandwidth utilization, and other.



Thank you