

Closed Loop CM w/ Probing

QECM-(S)P

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QECM-(S)P at a Glance

What is QECM-(S)P ?

- A hybrid between QCN and ECM with probing.

What is mandatory / optional?

- M: Closed loop for increase and decrease controllers.
- O1: Probing → [Robustness]
- O2: Open loop rate increase → [cope w/ failures, ECN loss]

Distinctive feature(s)?

- Closed loop: improves overall operation
- Self-tuning [w/ probing]: issue left open

Complexity / performance ratio?

- Algorithmical: simpler, yet faster, recovery
- Implementation: comparable.

Mandatory and Optional Behavioral Spec

CP

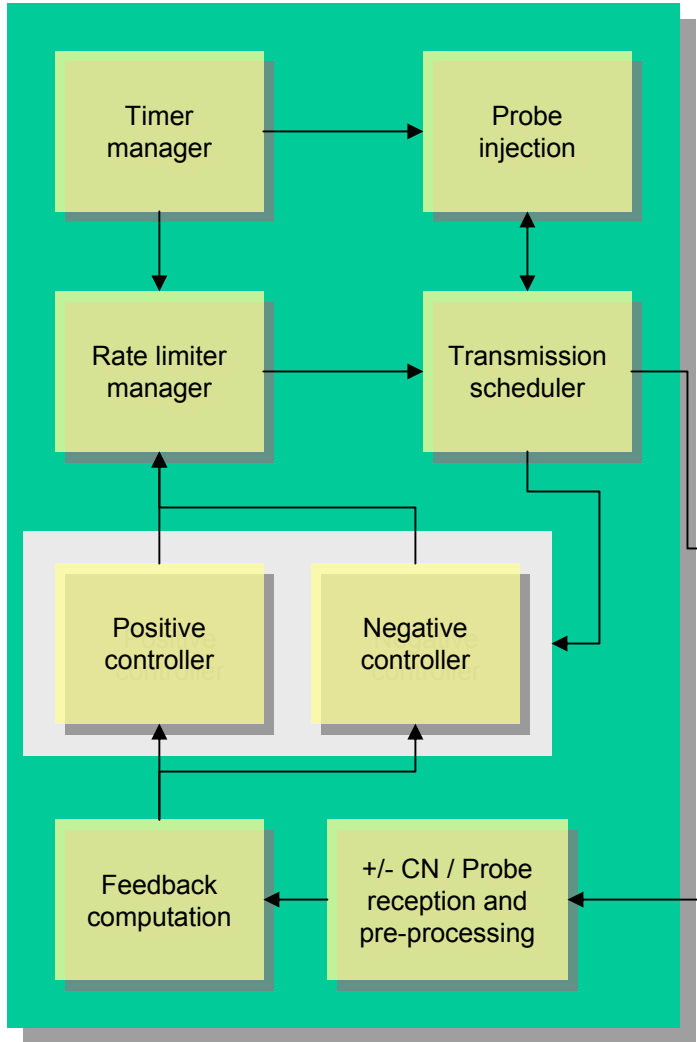
- MUST provide at least q and q' as distinct load sensor vars
- MUST implement at least fixed sampling freq.
- MUST inject + and – ECN based on marking conditions
- MUST respond to directed probes [when received]
- MAY (SHOULD) react to fly-by probes

RP

1. MUST react to –ECN by reducing rate [possibly directly to 0]
2. MUST react to +ECN by increasing rate
 1. Upon a safety timer TO, RP MUST be able to obviously increase rate in Open Loop (without positive feedback)
3. MAY (SHOULD) send directed or path probes to adapt its +/- loops to current workload, topology and traffic demands

Basic CM Modules

Reaction Point (RP)



Congestion Point (CP)

