DetNet

Bounded Latency-02

draft-ietf-detnet-bounded-latency-02

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A reminder - Bounded Latency Draft

- DetNet is about an **upper bound** on end-to-end latency – **not** low average latency.
- Bounded latency leads to the ability to compute exactly how many buffers are required to achieve zero congestion loss.
- **Feedback** that slows down flows to avoid congestion is **not an option** for the application space of interest to DetNet.
- Mathematically sound assurances can be given on latency and congestion loss.

A reminder - Current status

Intended status: Informational

Content:

3. Timing model
    3.1. Flow creation
    3.2. Relay node model
4. Computing End-to-end Delay Bounds
    4.1. Non-queuing delay bound
    4.2. Queuing delay bound
5. Achieving zero congestion loss
6. Queuing techniques

Major changes from v01 to v02

Idea

- Reduce details referring to IEEE 802.1 TSN scheduling, to make the draft more concise and conformant to DetNet WG.

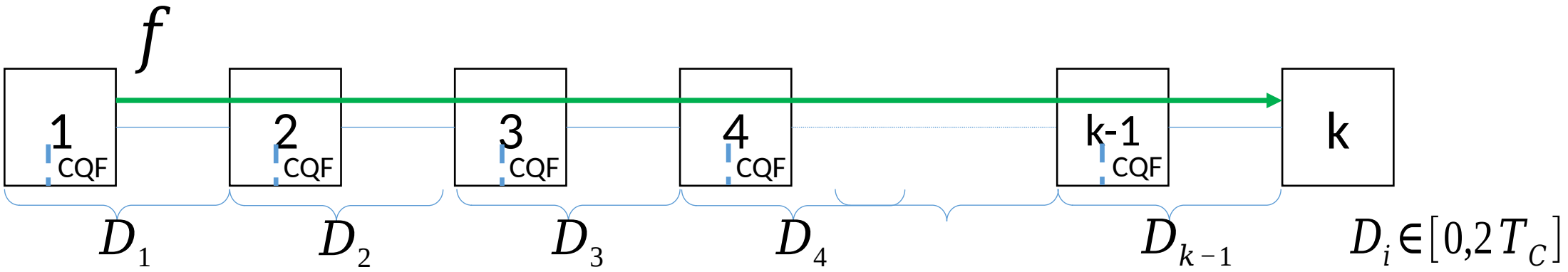
Changes

- Sec. 5: backlog formula is updated and improved.
- Sec. 6.3 (TAS) and Sec. 6.5 (IntServ): simplified and finalized.
- **Major change** in Sec. 6.6 (CQF): the 2-buffer scheme is consolidated and delay bounds are provided.

TAS: Time-aware Shaper
CQF: Cyclic Queuing and Forwarding

2-buffer CQF, delay analysis

- Consider a CQF with cycle time .



- End-to-end delay bounds:

$$D_{e2e}^{max} = kT_c$$

$$D_{e2e}^{min} = (k-2)T_c$$

- End-to-end latency variation:

$$V_{e2e} = 2T_c$$

Final steps…

- Final consistency check with the other WG drafts.
- The content of the draft is finalized:
  - Input from the WG is welcome.
- Ask for WG last call.