

DetNet Configuration YANG Model

draft-ietf-detnet-yang-00

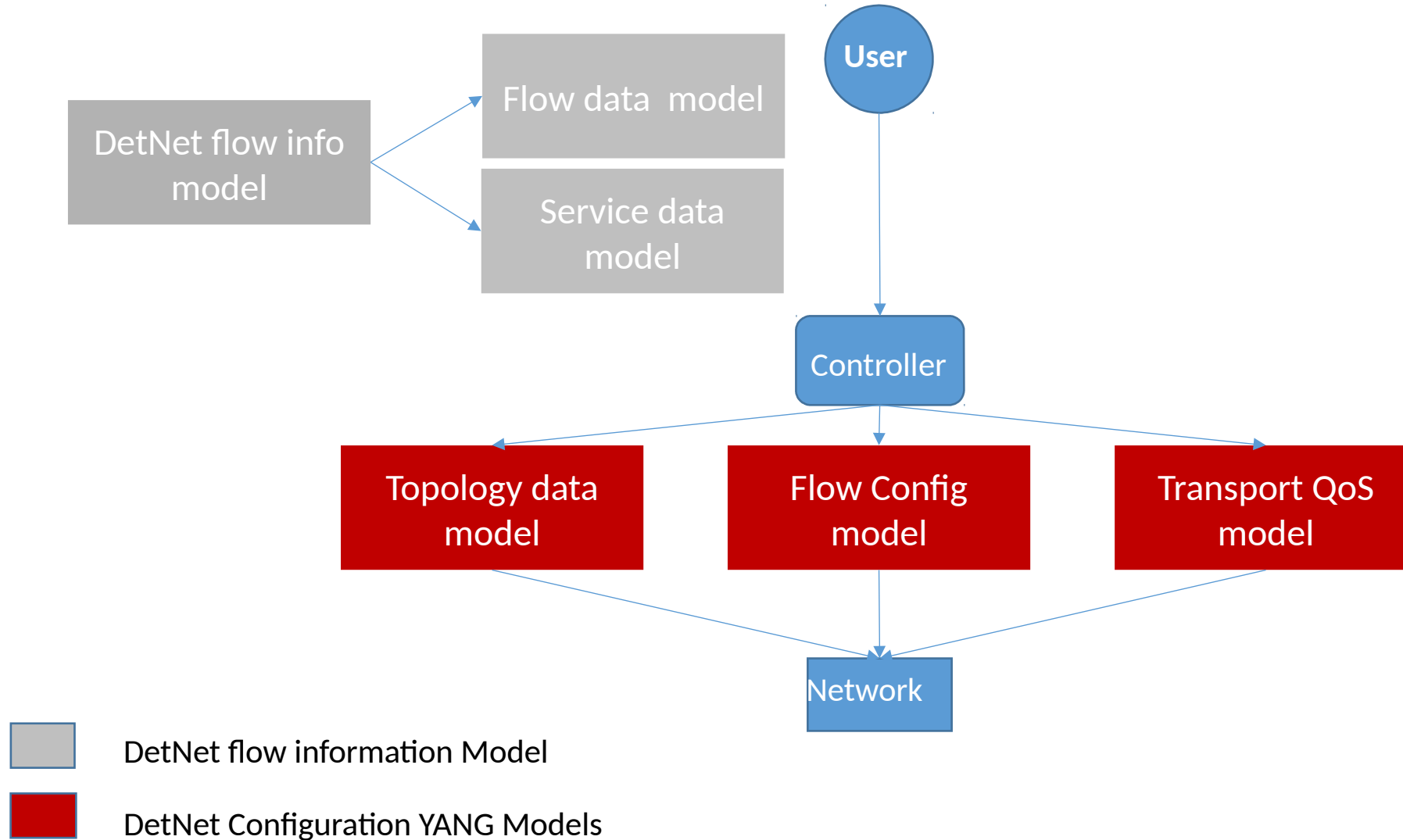
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DetNet Configuration YANG



DetNet Topology YANG Overview of version 0

Controller



Augmentation to ietf-te-topology

Node Attribute

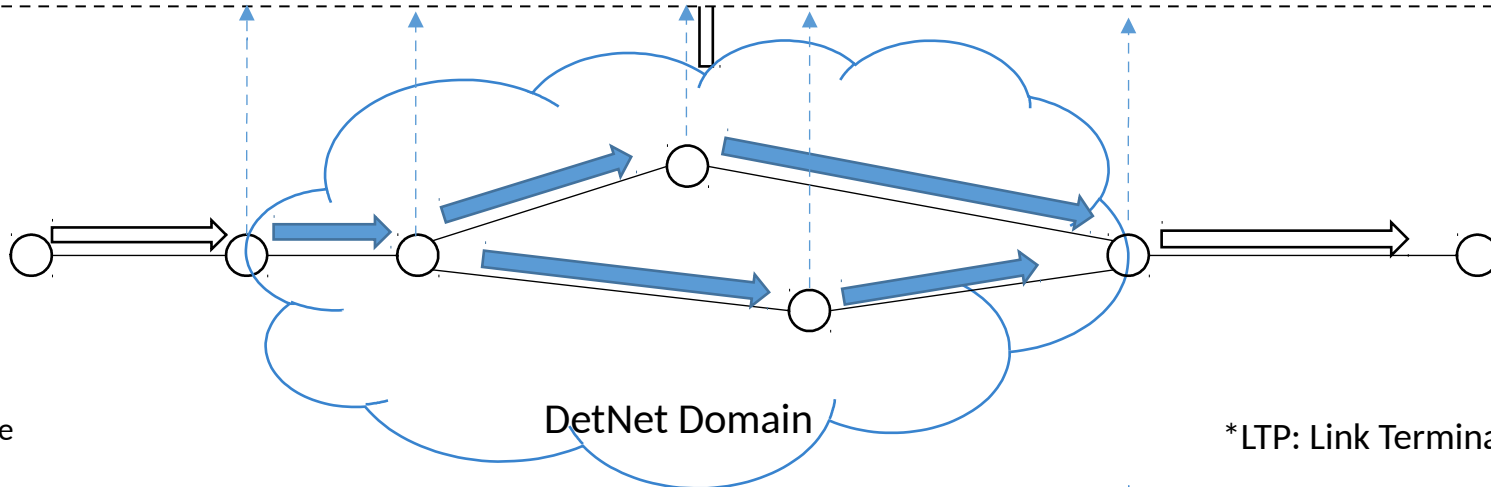
- Packet Processing Delay

LTP* Attribute

- Queuing Attribute (buffer size/delay)
- PREOF Capability

Link Attribute

- Bandwidth for DetNet



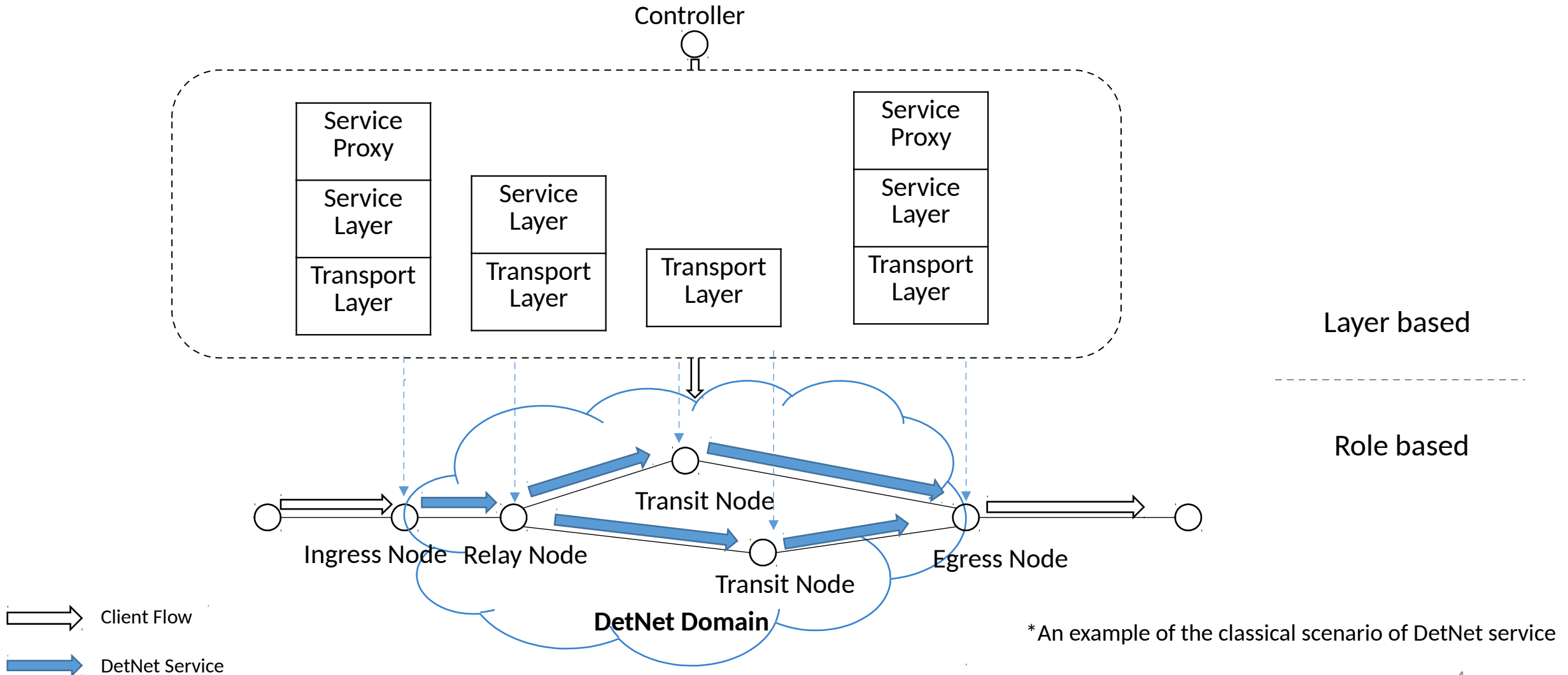
Client Flow

DetNet Service

DetNet Domain

*LTP: Link Termination Point

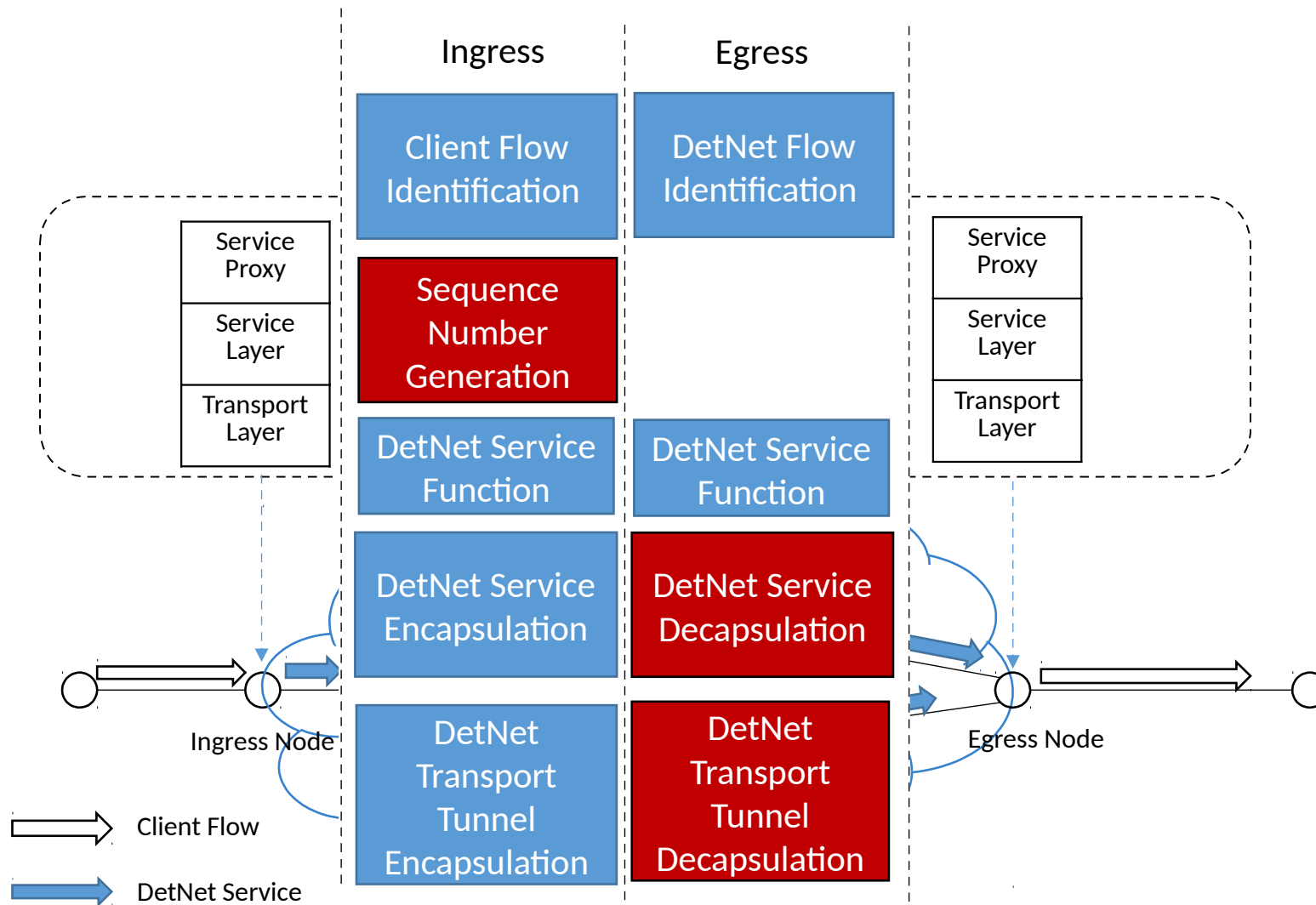
DetNet Flow Configuration YANG Overview of version 00



To Be Updated in version 01

- Split the flow configuration models into:
 - MPLS flow configuration model
 - IP flow configuration model
- Add 'Sequence Number Generation'
 - OAM considerations
 - MPLS flow configuration model only
- Add 'DetNet Service Decapsulation'
 - MPLS flow configuration model only
- Add 'DetNet Transport Tunnel Decapsulation'

MPLS Flow Configuration – Edge Node

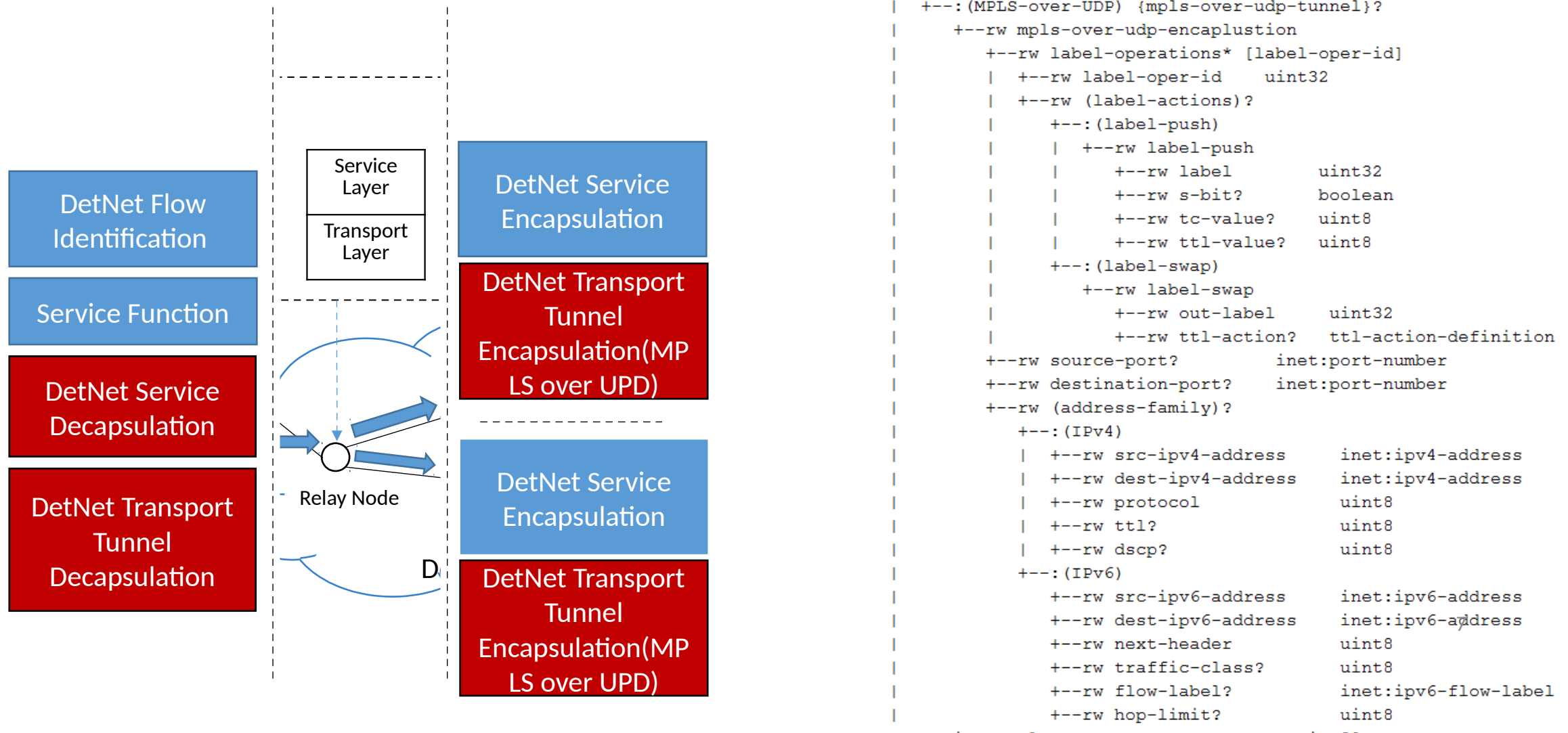


```

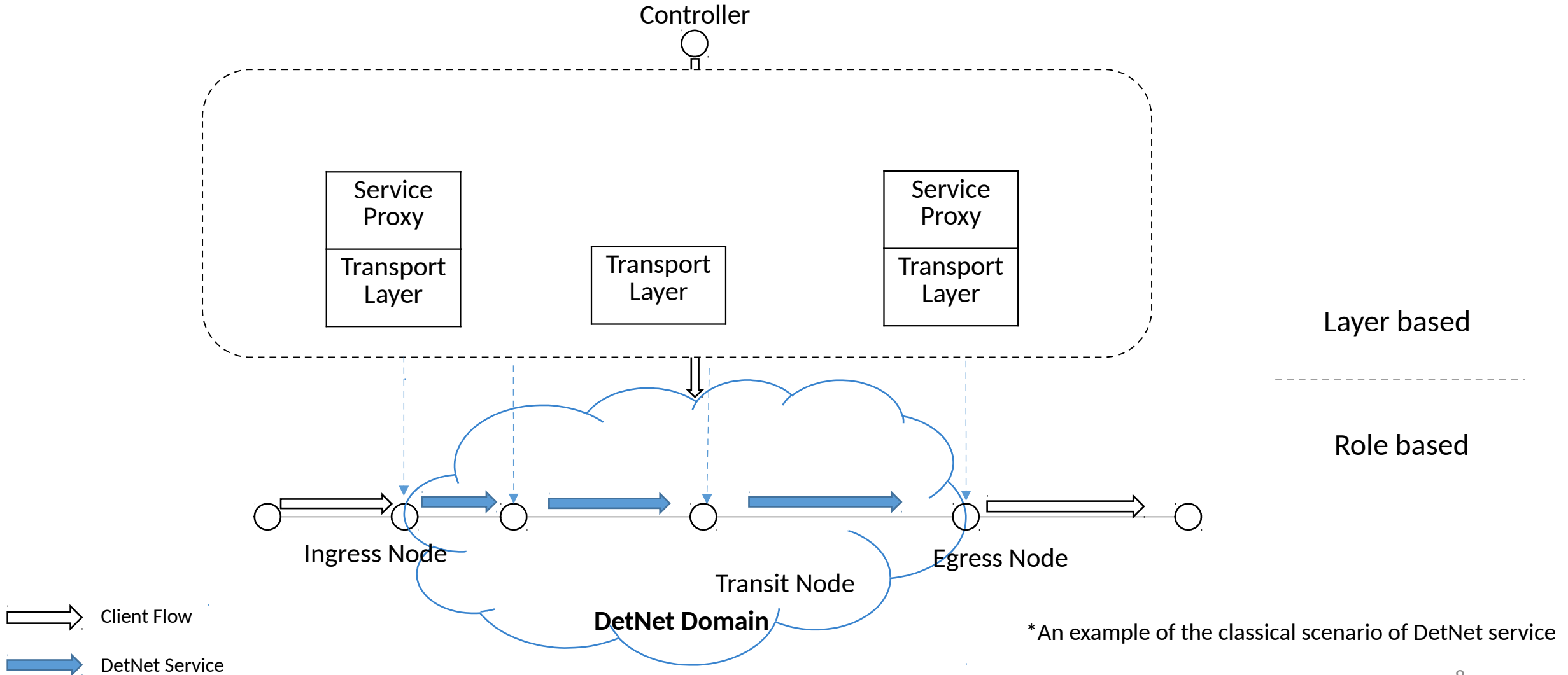
typedef sequence-number-generation {
  type enumeration {
    enum "copy-from-app-flow" {
      description
        "DetNet flow sequence number is copied
        from application flow.";
    }
    enum "generated-by-edge-node" {
      description
        "DetNet flow sequence number is generated
        by DetNet edge node.";
    }
  }
  description
    "DetNet sequence number generation types.";
}

grouping detnet-sequence-number {
  description
    "DetNet sequence number.";
  leaf sequence-number-generation-type {
    type sequence-number-generation;
    description
      "The way on how sequence number is generated.";
  }
  leaf sequence-number-length {
    description
      "DetNet sequence number length.";
    type uint8;
  }
}
  
```

MPLS Flow Configuration – Relay Node



IP Flow Configuration



Issues: Transport QoS Configuration

- TSN Queuing YANGs in IEEE:

- IEEE P802.1 Qci

- Per-Stream Filtering and Policing: <https://github.com/YangModels/yang/blob/master/standard/ieee/802.1/draft/ieee802-dot1q-psfp.yang>

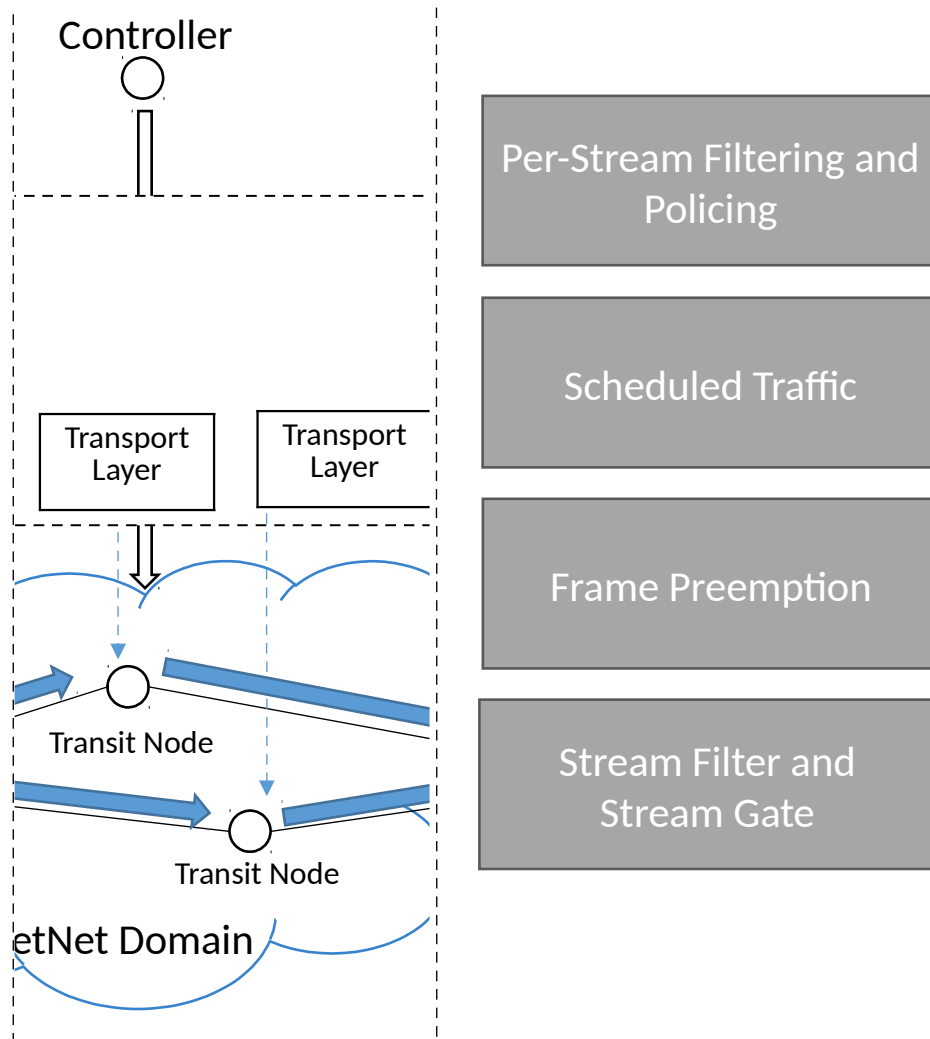
- IEEE P802.1 Qcw:

- Scheduled Traffic: <https://github.com/YangModels/yang/blob/master/standard/ieee/802.1/draft/ieee802-dot1q-psfp.yang>

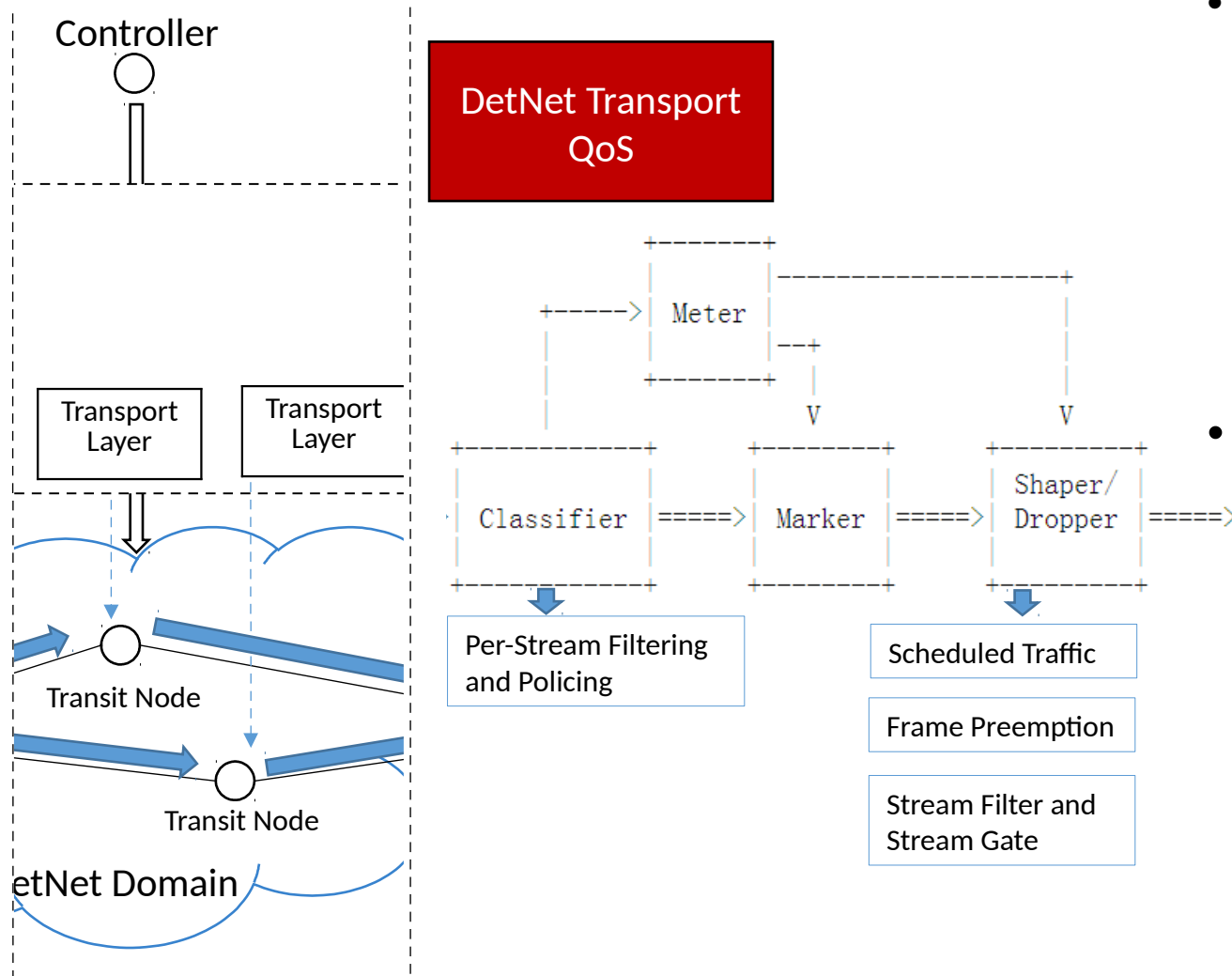
- Frame Preemption: <https://github.com/YangModels/yang/blob/master/standard/ieee/802.1/draft/ieee802-dot1q-preemption.yang>

- IEEE P802.1 Qcr

- Stream Filter and Stream Gate: <https://github.com/YangModels/yang/blob/master/standard/ieee/802.1/draft/ieee802-dot1q-stream-filters-gates.yang>



Issues: Transport QoS Configuration – cont.



- QoS YANG in IETF:
 - RFC 2475
 - Architecture for Differentiated Services
 - draft-asechoud-rtgwg-qos-model
 - YANG Model for QoS
- DetNet Transport QoS YANG in IETF?
 - ✓ Augment to IETF QoS YANG? (there are some preliminary thoughts, but not included in the current draft yet)
 - ✓ Leave it to IEEE? (Existing TSN QoS models are separated in different YANG models, and it is to be figure out how to apply them to DetNet)

Next Step

- Split the draft into two drafts?
 - DetNet Topology YANG in TEAS WG
 - DetNet Flow Configuration YANG in DetNet WG
- DetNet Transport QoS: in or out of the scope of DetNet WG?
 - Define an independent DetNet Qos YANG model?
 - Do augmentation to IEEE YANG models?
- Comments and contributions are always welcome

Thanks