

# Information Elements for Data Link Layer Traffic Measurement (draft-kashima-ipfix-data-link-layer-monitoring-04)

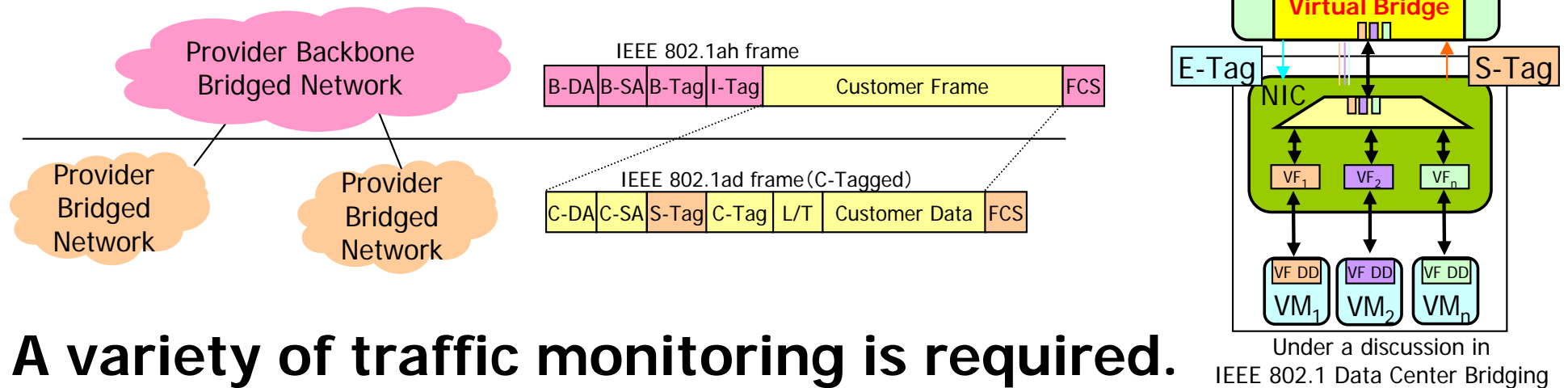
Shingo Kashima, Atsushi Kobayashi

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NTT Information Sharing Platform Laboratories

# Motivation

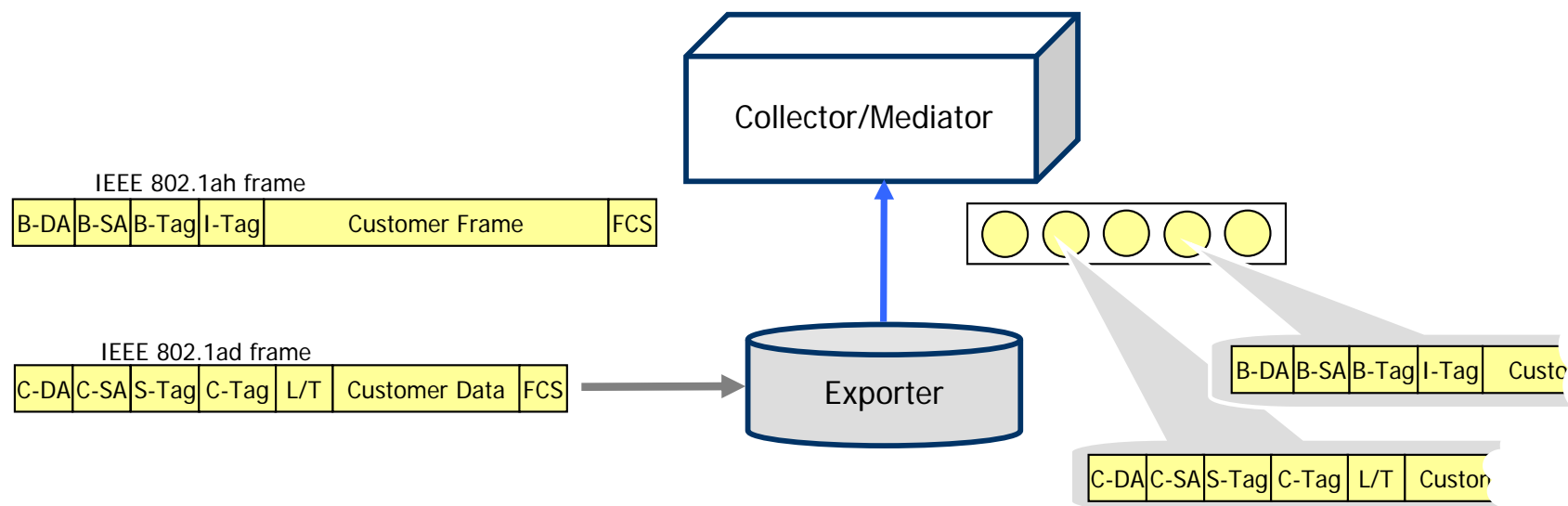
- **A Wide-Area Ethernet and a Data Center Bridging has a lot of Ethernet components.**
  - Many kinds of MAC-Address and VLAN-Tag (VLAN ID and QoS parameter bit), etc.



- **A variety of traffic monitoring is required.**
  - Traffic volume for each VLAN and QoS class (for traffic report to customer)
  - Multicast traffic volume (for capacity planning and loop detection)
- **A flexible traffic measurement is required in Ethernet layer.**

# Proposal

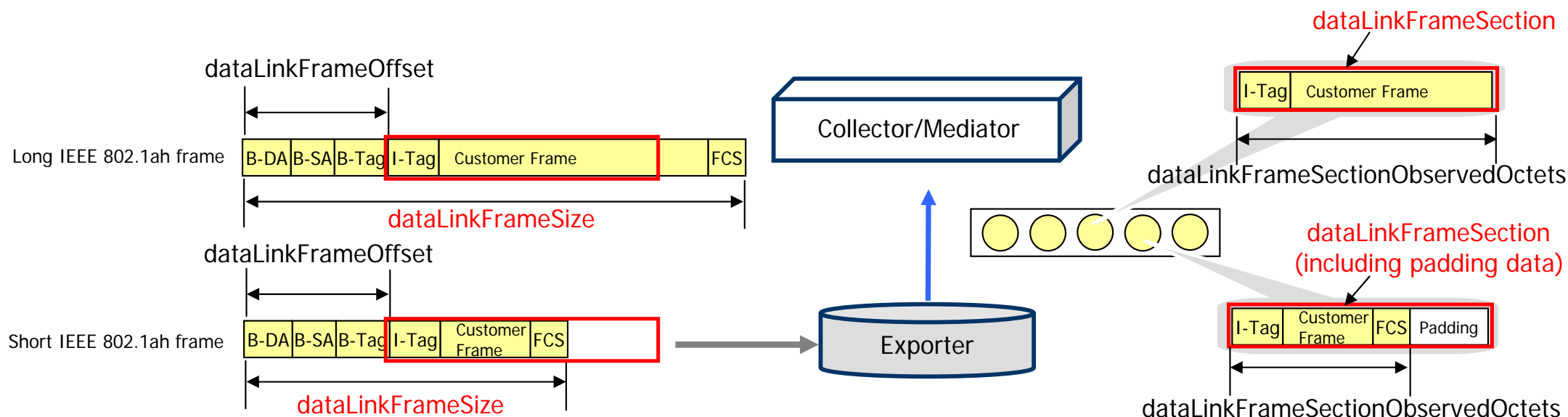
- **A flexible traffic measurement in Ethernet layer.**
  - Just like ip{Header, Payload}PacketSection for IPv4 and IPv6.
  - Just like mpls{LabelStack, Payload}PacketSection for MPLS.



- **Then I proposed adding tree IEs in the past meeting.**
  - dataLinkFrameSize, dataLinkFrameSection, dataLinkFrameType
- **I propose adding two IEs in this meeting.**
  - dataLinkFrameOffset, dataLinkFrameSectionObservedOctets

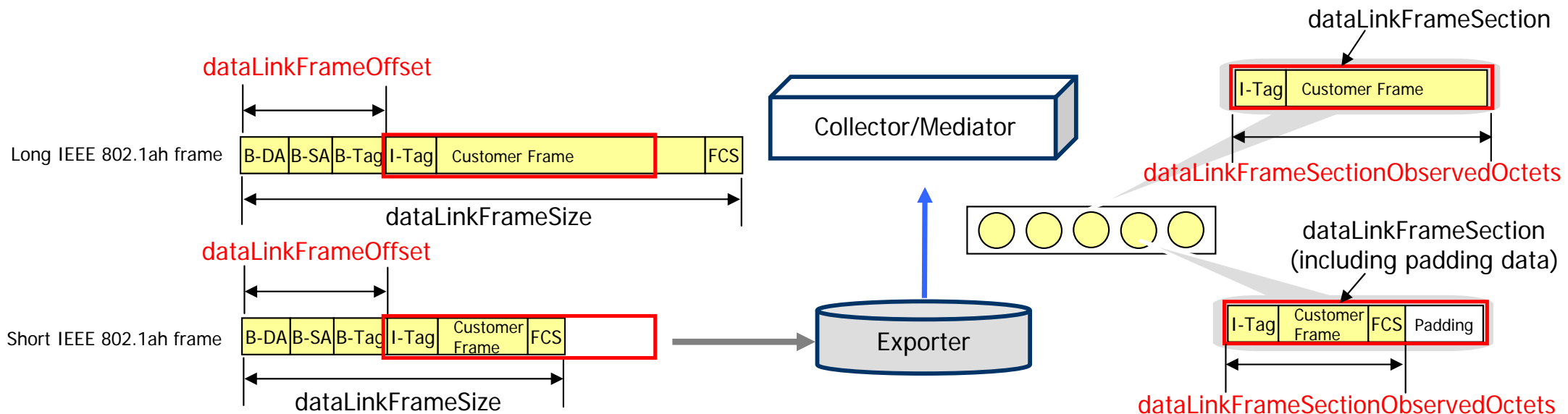
# Information Elements

- **dataLinkFrameSize:**
  - specifies the length of the selected data link frame.
- **dataLinkFrameSection:**
  - carries n octets from the data link frame of a selected frame, starting dataLinkFrameOffset octets into the frame.
- **dataLinkFrameType:**
  - specifies the type of the selected data link frame.



# Information Elements [cont.]

- **dataLinkFrameOffset:** *New*
  - specifies the offset of the observed dataLinkFrameSection within the data link frame.
- **dataLinkFrameSectionObservedOctets:** *New*
  - specifies the observed length of the dataLinkFrameSection when padding is used.
    - Though IPFIX supports variable-length encoding, Exporter can process fixed-length encoding easier than variable-length and a wasting data is little when extracting size is small.



# Discussion 1

- **Where should be the enumeration of dataLinkFrameType value?**
  - In dataLinkFrameType's description
    - Just like flowEndReason and biflowDirection.
    - Very simple at this time but dataLinkFrameType's description is revised when a new frame type is required.
  - In a new registry
    - Just like mplsTopLabelType.
    - Not simple at this time but only enumeration is revised when a new frame type is required.

## 4.3. dataLinkFrameType

### Description:

This Information Element specifies the type of the selected data link frame.

The following data link types are defined here.

- 0x0001 **ETHERNET**

Further values may be assigned by IANA.

The data link layer is defined in [ISO\_IEC.7498-1\_1994].

Abstract Data Type: unsigned16

Data Type Semantics: identifier

ElementId: 347

Status: current

# Discussion 2

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- **Do we need a generic offset ?**
  - No. dataLinkFrameOffset supports only dataLinkFrameSection.
    - We cannot have general versatility.
  - Yes. dataLinkFrameOffset supports all packet section IEs.
    - Then IE name should be changed to "SectionOffset".
    - We need modify the existing IEs' description.
      - ipHeaderPacketSection:
        - carries a series of octets from **the start of** the IP header
      - ipPayloadPacketSection:
        - carries a series of octets from **the start of** the IP payload
      - mplsLabelStackSection:
        - carries **the first** n octets from the MPLS label stack
      - mplsPayloadPacketSection:
        - carries **the first** n octets from the MPLS payload

# Thank You!

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