

# Data Link Layer Monitoring with IPFIX/PSAMP

(draft-kashima-ipfix-data-link-layer-monitoring-01.txt)

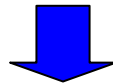
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# Motivation

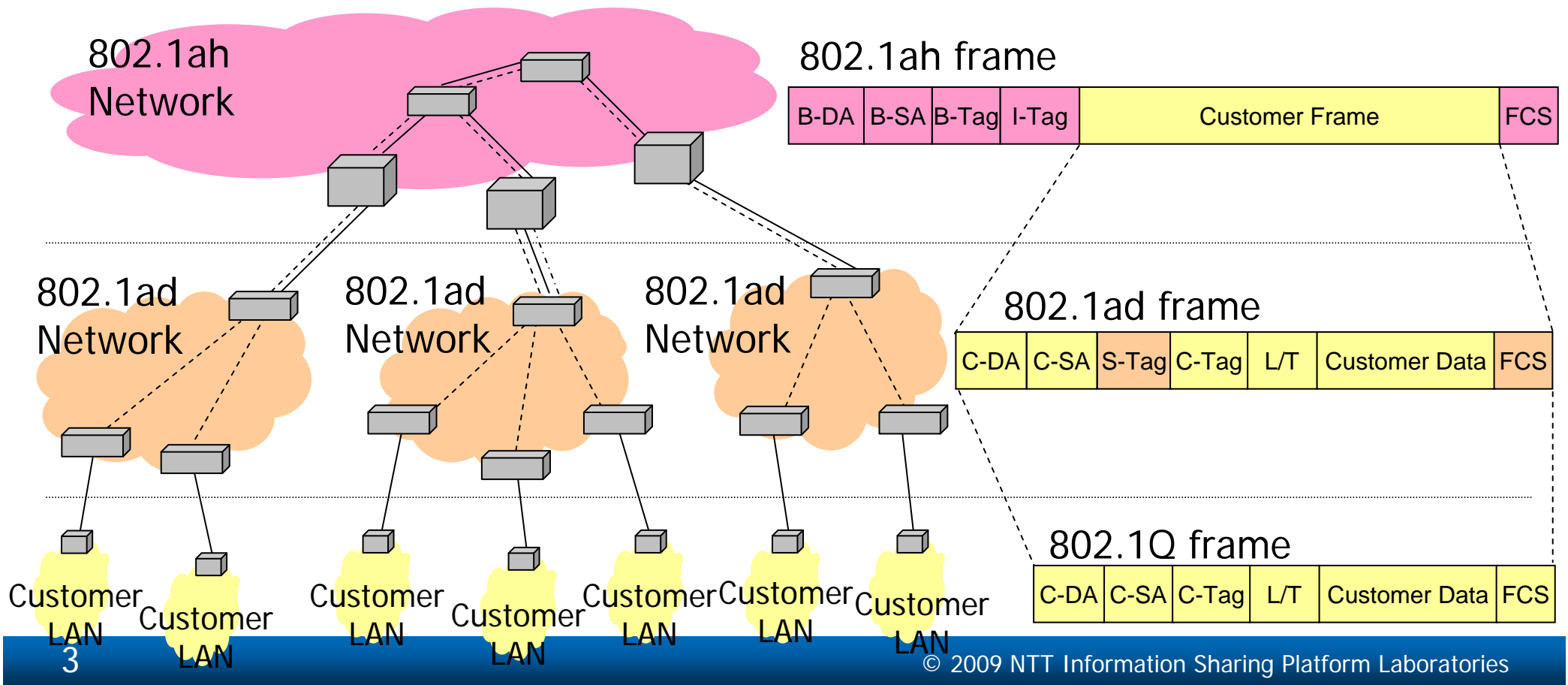
- In a Wide-Area Ethernet network, a variety of traffic monitoring is required.
  - Traffic volume for each VLAN and QoS class (for traffic report to customer)
  - Multicast traffic volume for each VLAN (for capacity planning)
- IPFIX/PSAMP needs to meet this requirement. But IEs related to Ethernet header is not enough.
  - RFC5102: Only three IEs.
    - destinationMacAddress, sourceMacAddress, vlanId
    - No support for any extended VLAN.
  - RFC5477: No IE.
    - PSAMP-WG decided to remove related IEs in detailed checking, because there was no requirement at that time.



We require the relevant IEs for IPFIX/PSAMP to meet this requirement.

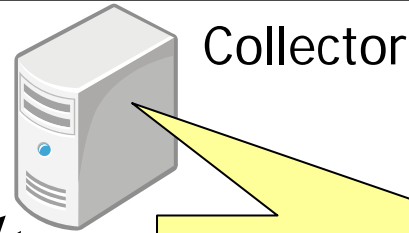
# Wide-Area Ethernet

- Planning a network renovation from flat to hierarchical structure.
  - Co-existing 802.1ad (Q-in-Q) and 802.1ah (MAC-in-MAC)
  - A lot of Ethernet components
    - MAC Address, VLAN-Tag (VLAN ID and QoS parameter bit), etc.

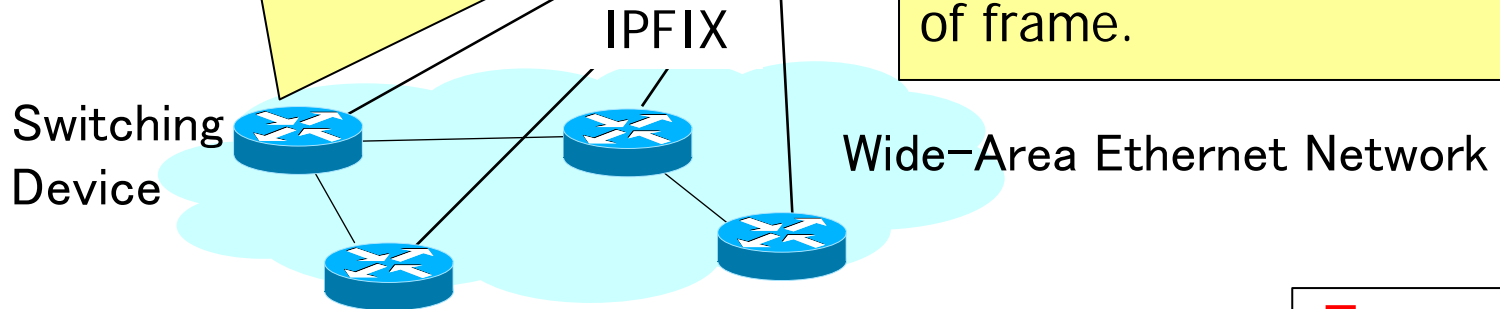


# Approach

Switching device **does not analyze** the header of a sampled frame, but just extracts the first N octets of a sampled frame and exports them to a collector.



Collector **analyzes** the head of frame.



**Too many!!**

- Typical Ethernet header field in IEEE802.1ad and IEEE802.1ah
- ❑ C-DA (Customer Destination MAC address)
  - ❑ C-SA (Customer Source MAC address)
  - ❑ C-PCP (Customer VLAN priority code point)
  - ❑ C-VID (Customer VLAN ID)
  - ❑ S-PCP (Service VLAN priority code point)
  - ❑ S-DEI (Service VLAN drop eligible indicator)
  - ❑ S-VID (Service VLAN ID)
  - ❑ B-DA (Backbone Destination MAC address)
  - ❑ B-SA (Backbone Source MAC address)
  - ❑ B-PCP (Backbone VLAN priority code point)
  - ❑ B-DEI (Backbone VLAN drop eligible indicator)
  - ❑ B-VID (Backbone VLAN ID)
  - ❑ I-PCP (Backbone Service Instance priority code point)
  - ❑ I-DEI (Backbone Service Instance Drop Eligibility Indicator)
  - ❑ I-SID (Backbone Service Instance Identifier)
  - ❑ and so on...

# IEs

Name	Description	Data Type	Id
dataLinkFrameType	The type of the sampled data link frame.	Unsigned32 ( 1: Ethernet, 2: PPP, 3: WiMax,... Further values may be assigned by IANA.)	XXX
dataLinkFrameSize	The size of the sampled data link frame.	unsigned32	XXX
dataLinkFrameSection	The first N octets of the sampled data link frame.	octetArray (a variable length)	XXX

These are quote from <draft-ietf-psamp-info-09.txt>

# Discussion

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- Our goal is the registration of the relevant IEs to IANA.
  - Do we need to publish the RFC document?
  - Or does it need IPFIX expert review?