

# **On the Relationship between PSAMP and IPFIX**

**<draft-quittek-psamp-ipfix-00.txt>**

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# Background

- Both, PSAMP WG and IPFIX WG, aim at standardizing technology for
  - observing traffic a network devices and
  - exporting some (processed) part of the observation to other devices
- Both consider packet selection as a component
  - IPFIX: just one out of many
  - PSAMP: the focus

# Motivation for Discussing Relationship

- Goals
  - avoid duplication of work
  - increase mutual benefits between the WGs
  - harmonize standards to be developed by the WGs
- Issues
  - potential overlap of activities
  - potential mutual complements
  - common issues that should be harmonized

# IPFIX WG Goals

- Main goal: **Selecting a protocol for IP flow information export**
- Steps
  - define the notion of a standards IP flow
  - devise data encodings for IP flows
  - consider the notion of IP flow information export based on packet sampling
  - identify and address any security & privacy concern affecting flow data
  - specify the transport mapping for carrying IP flow information
  - ensure that the flow export system is reliable and efficient

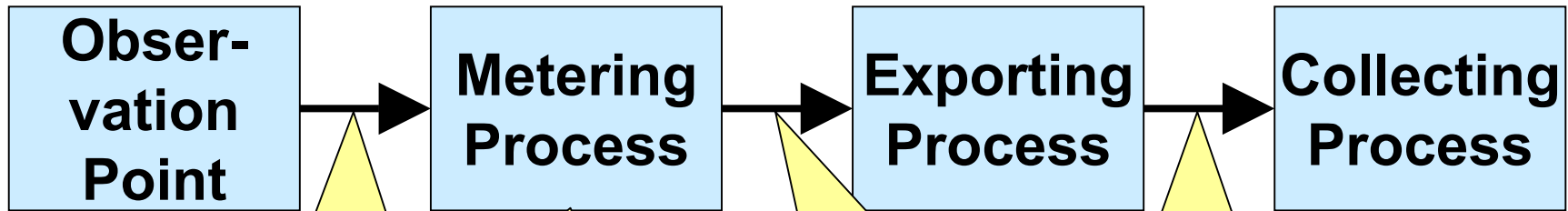
# IPFIX Current Status

- Requirements document nearly completed
- Protocol selection ongoing
  - 5 protocols under evaluation
    - CRANE
    - Diameter
    - IPDR
    - LFAP
    - NetFlow v9
- Work on architecture and data encodings stopped until protocol selection is done

# PSAMP Goals

- Specify a set of selection operations by which packets are sampled
- Specify the information that is to be made available for reporting on sampled packets
- Describe protocols by which information on sampled packets is reported to applications
- Describe protocols by which packet selection and reporting configured.

# IPFIX Architecture



Packet headers

Flow records

Flow records

packet header capturing

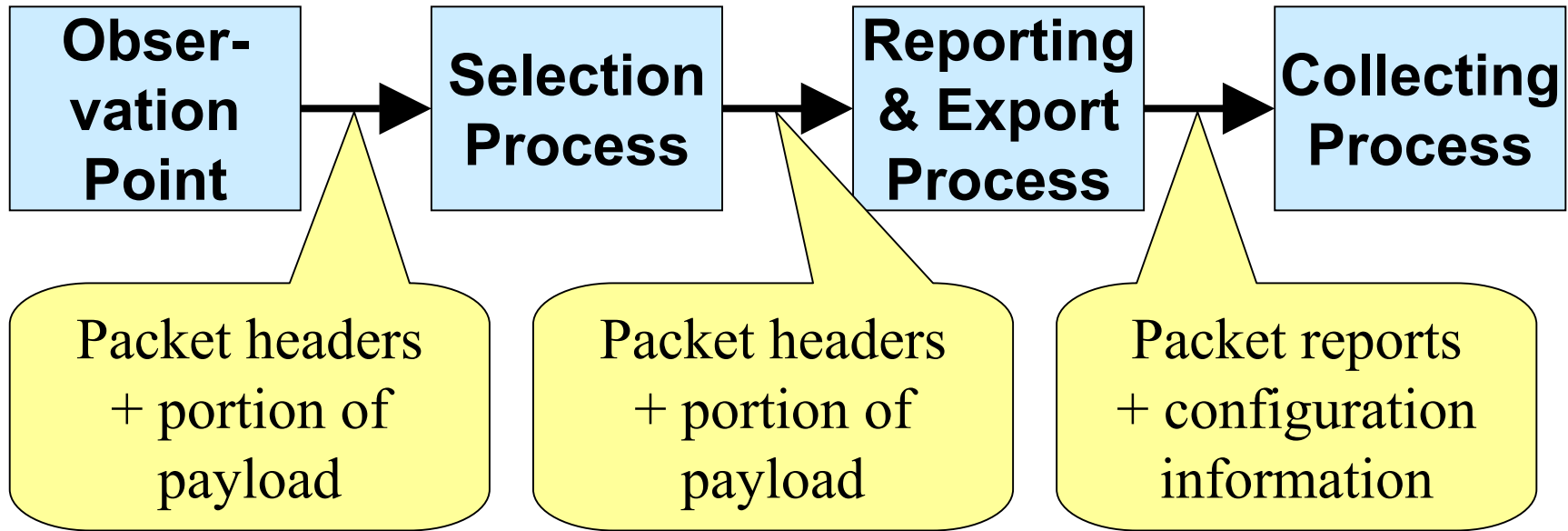
timestamping

+----->+  
|  
classifying  
+-----+  
|

maintaining flow records

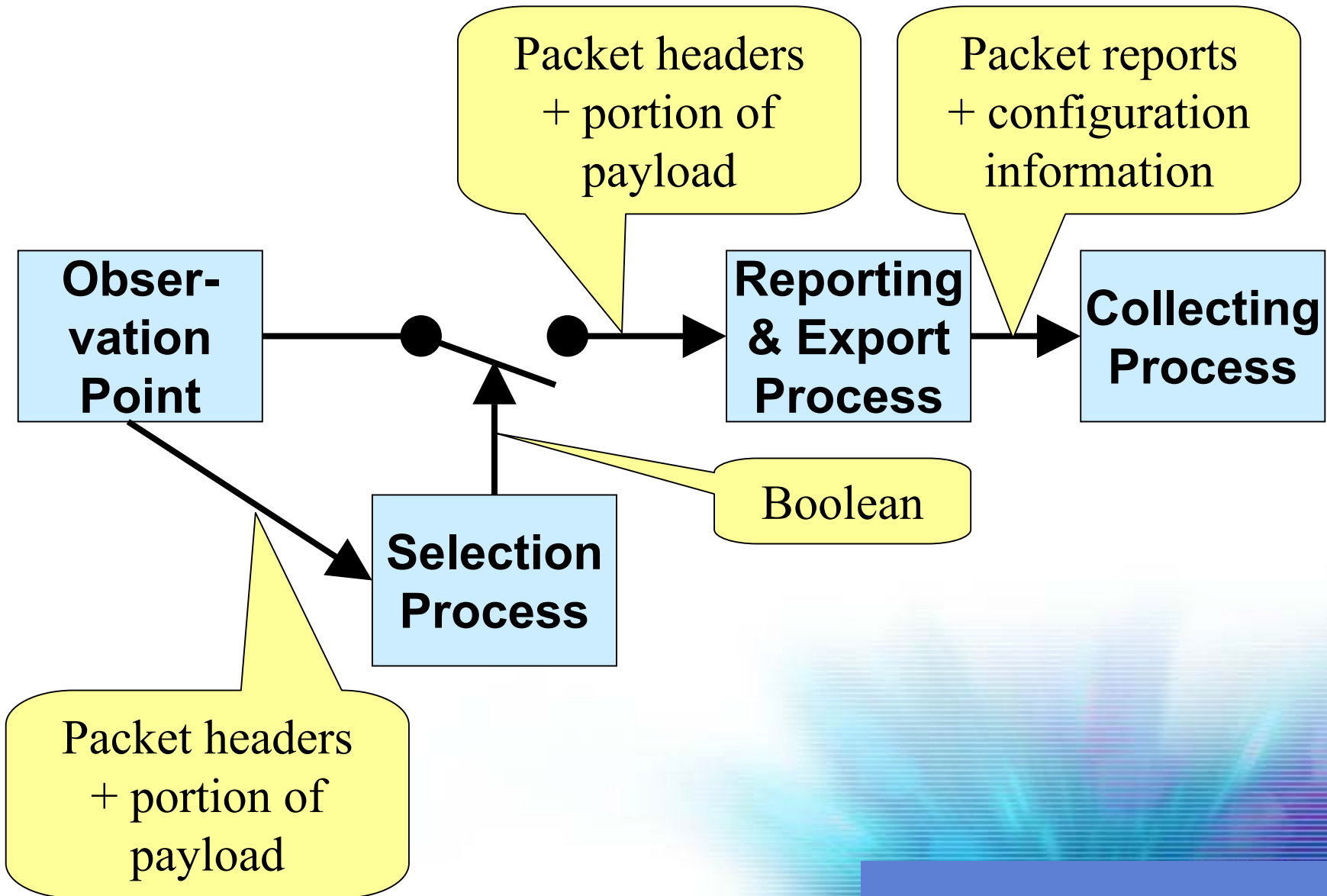
selection  
functions  
may be inserted  
before any  
other function

# PSAMP Architecture Guess



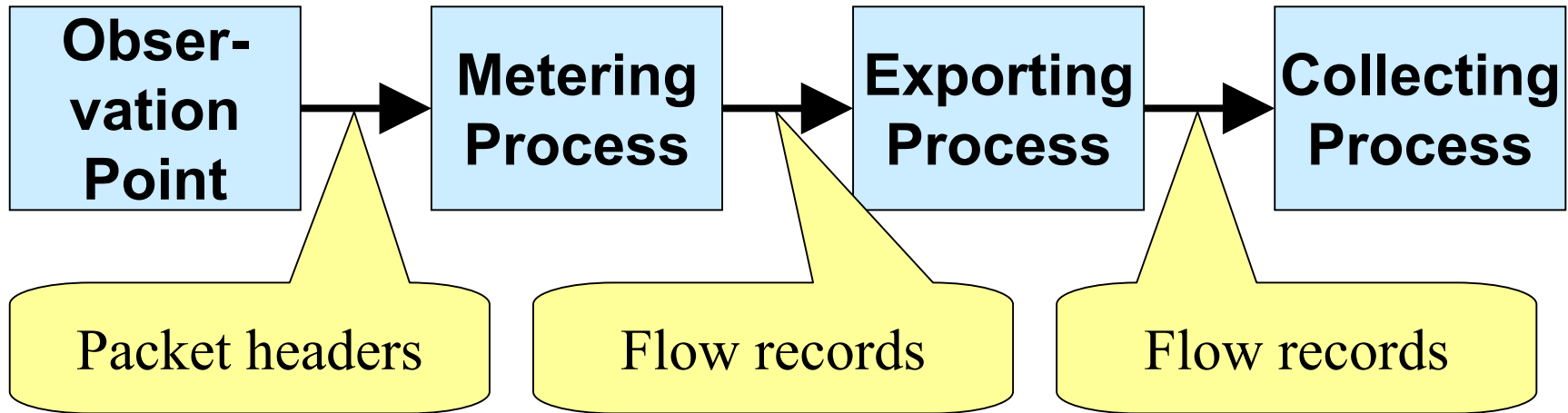


# PSAMP Architecture Variation

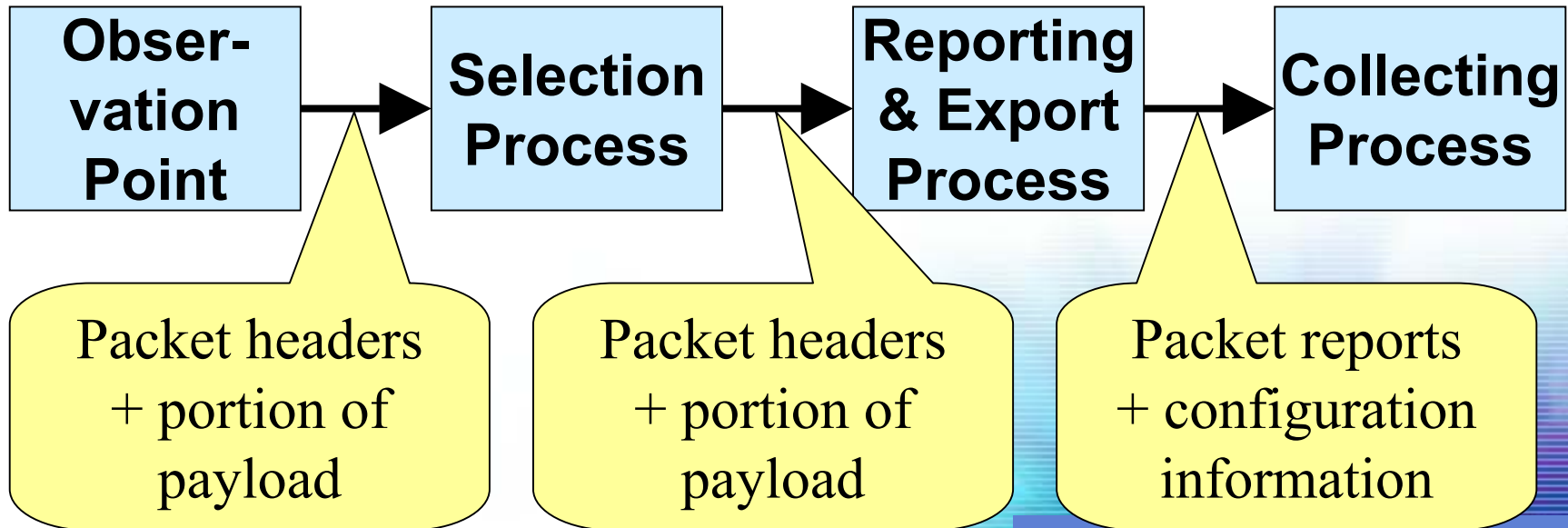


# Architecture Comparison


IPFIX



PSAMP



# Overlap, Complement, Harmonization

- Terminology
  - Packet selection function
    - (traditional) packet filtering
    - sampling
  - Packet selection model
  
  - IPFIX export for PSAMP
  - Configuration
- 

# Packet Selection Function

- The IPFIX metering process allows a packet selection function to be called before any of its other functions.
- Conceptually, this could be the same function as the one used by the PSAMP selection process.
- So far, IPFIX did not clearly specify this function. PSAMP will definitely do so.

# Packet Selection Model

- For packet selection (incl. sampling and filtering) the PSAMP WG will develop
  - an information model
  - a data model
- Both can potentially be re-used by IPFIX
  - information model in architecture and protocol
  - data model in protocol
  - configuration of metering group

# IPFIX Export for PSAMP

- There is potential to re-use parts or all of the IPFIX protocol for the PSAMP protocol
- Three levels of re-use
  - information model
  - data model
  - protocol
- In the extreme case an IPFIX flow record may contain a single packet
- It needs to be checked if the IPFIX protocol meets all PSAMP requirements

# Configuration

- PSAMP standardizes a MIB for configuring
- IPFIX does not standardize configuration
  - > CLI
- The PSAMP MIB might be a good starting point to be included in a (future?) IPFIX MIB