Configuration Data Model for IPFIX and PSAMP

draft-ietf-ipfix-configuration-model-01

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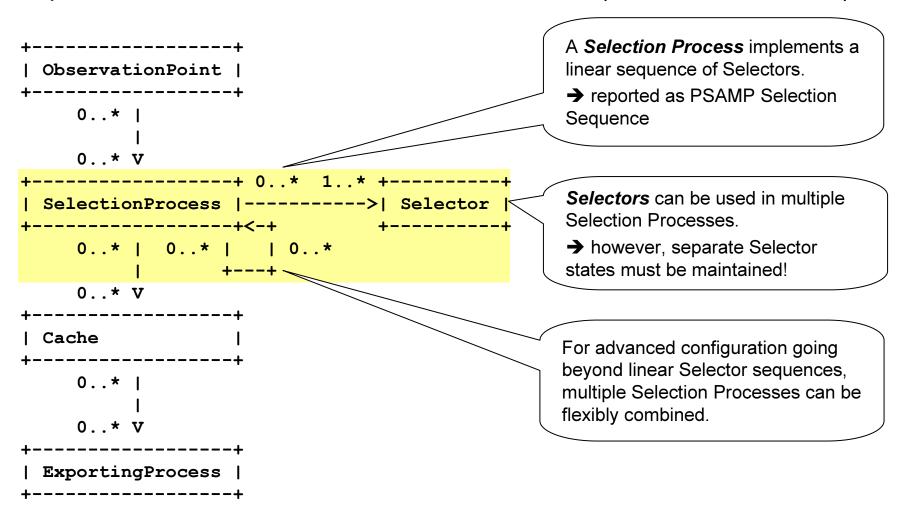
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Feedback received to -00

▶ Two reviews by Paul and Andrew

▶ Resolved issues in version 01:
- Selection Process:
  - ▶ in version-00, Selection Process did not conform to PSAMP

- Cache Layout:
  - ▶ in version 00, proposed rule that explained how to handle specified fields could lead to unexpected results

▶ *Author's remark:*
- *Comments confirm once more that the unambiguous description of Metering Process configurations is the most complex part.*

Changes in -01: Selection Process

▶ Separation of *Selection Process* and *Selectors* (= Selector functions)

```
+------------------+
| ObservationPoint |
+------------------+
     0..* |
          |
     0..* V
+------------------+ 0..*  1..* +----------+
| SelectionProcess |----------->| Selector |
+------------------+<-+         +----------+
     0..* |   0..* |    | 0..*
          |        +---+
     0..* V
+------------------+
| Cache            |
+------------------+
     0..* |
          |
     0..* V
+------------------+
| ExportingProcess |
+------------------+
```

A *Selection Process* implements a linear sequence of Selectors.

➜ reported as PSAMP Selection Sequence

Selectors can be used in multiple Selection Processes.

➜ however, separate Selector states must be maintained!

For advanced configuration going beyond linear Selector sequences, multiple Selection Processes can be flexibly combined.

Changes in -01: Cache Layout (part 1)

▶ **Cache Layout:**

- defines the **superset of fields** that are stored in the Cache
- **largest possible subset** of the specified fields is included in the resulting Packet Reports or Flow Records

▶ **Packet Reports:**

- All fields MUST be included in the resulting Packet Report unless the corresponding IE is not applicable or cannot be derived from the content or treatment of the incoming packet.

▶ **Flow Records:**

- All **Flow Key fields** MUST be included as Flow Key in the resulting Flow Record unless the corresponding IE is not applicable or cannot be derived from the content or treatment of the incoming packet.
- Two packets MUST be accounted by different Flow Records if different subsets of the Flow Key fields are applicable or derivable.
- All **non-key fields** MUST be included in the resulting Flow Record unless the corresponding IE is not applicable or cannot be derived **for the given Flow**.

Changes in -01: Cache Layout (part 2)

► **Non-key field example:**

- IE specifying a header field of the Flow's first packet (e.g., tcpSequenceNumber)
  - ► field MUST be included in Flow Record if it actually can be determined from the first packet of the Flow (e.g., in the case of a TCP packet)

Further changes in -01

▶ **New parameter:**

- rate limit for Exporting Process (as required by PSAMP)

▶ **Parameters of filter match:**

- in PSAMP MIB:
  - ▸ *psampFilterMatchFieldId*
- in configuration model:
  - ▸ either *ieName* or *ieId*
  - ▸ optional enterprise number

▶ **TLS/DTLS:**

- no consensus in WG about if and which parameters should be included
- suggestion not to include TLS/DTLS parameters
  - ▸ might be added in future versions of the model

Open issues

► Clarify the future of the draft
- possible split into YANG-independent information model and YANG-dependent data model

► YANG-independent part
- after WG has finished work on IPFIX MIB:
  ► check consistency
  ► add operational (read-only) parameters
- identify non-mandatory parameters (that still must exist)
  ► specify that they must be initialized by the device
  ► alternatively, define a reasonable default value in the model?

► YANG-dependent part
- make use of new YANG features to come