IPFIX Mediation: Problem Statement

<draft-ietf-ipfix-mediators-problem-statement-00.txt>

Atsushi Kobayashi and Haruhiko Nishida (NTT)

Christoph Sommer and Falko Dressler (Univ. Erlangen)

Emile Stephan (France Telecom)

Benoit Claise (Cisco Systems)

Background

- □ In IETF 69, the problem statement was approved as a WG work item.
  - ■ IPFIX-WG began to discuss IPFIX Mediation in large-scale networks as a starting point.
- □ Submitted as IPFIX-WG item in May 2008.
  - ■ Based on kobayashi-large-ps-02
- □ Milestone: April 2009, submit to IESG

Discussion in IETF 71

- [ ] After IPFIX-WG session, an editing session was held with some members. Thanks!
- [ ] We discussed mainly two points:
  - ▪ Expansion of the scope of the draft
    - [ ] Covers more general topics related to Mediation in any-scale networks.
    - ➔ Change title and add anonymization and interoperability for legacy protocol.
  - ▪ Clarification of the definitions of IPFIX Mediator and of example devices
    - ➔ The basic IPFIX Mediator model and effective examples.

Document outline in version 00

☐ Overall text improvement from large-ps-01

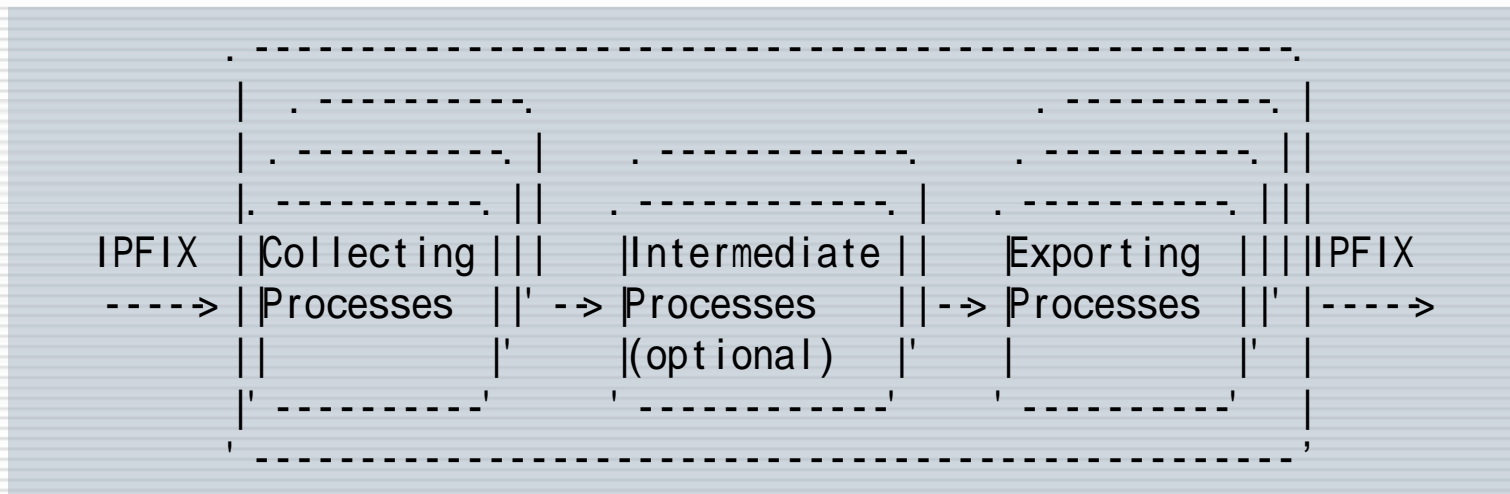|	
Wording change	1. Introduction
Wording change for clarity	2. Terminology
++ New section	3. Flow-Based Mediation Devices: Examples of Applicability **New**
+ New subsection and wording	4. Approaches to Scalability
Wording change	5. Problems with using IPFIX Mediators
Wording change	6. Conclusion
	7. Security Considerations

Changes from large-ps-01 (1)

- ☐ Section 2 Terminology
  - ■ Basic IPFIX Mediator model for clarification

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          .------------------------------------------------.
          |  .-----------.                   .-----------.  |
          |  .-----------.|                   .-----------.||
          |.-----------.||    .-------------.   .-----------.|||
    IPFIX ||Collecting|||    |Intermediate||   |Exporting ||||IPFIX
    ----->||Processes ||'-->|Processes    ||-->|Processes ||'|----->
          ||          |'    |(optional)  |'    |          |' |
          |'-----------'     '-------------'     '-----------'  |
          '------------------------------------------------'
```

  - ■ Definition of example IPFIX Mediator devices added
    - ☐ IPFIX Proxy, Concentrator, Distributor, and Masquerading Proxy

Changes from large-ps-01 (2)

□ Section 3 Examples of Applicability

■ Describes any applicable examples.

> 3. Flow-Based Mediation Devices: Examples of Applicability
>
> 3.1. Inter-domain IPFIX Exporting
>
> 3.2. Data Retention
>
> 3.3. Interoperability between Legacy Protocols and IPFIX
>
> 3.4. Flow Distribution to Specific Collectors
>
> 3.5. Aggregation and Harmonization of Metering Process Rules

New

New

New

Changes from large-ps-01 (3)
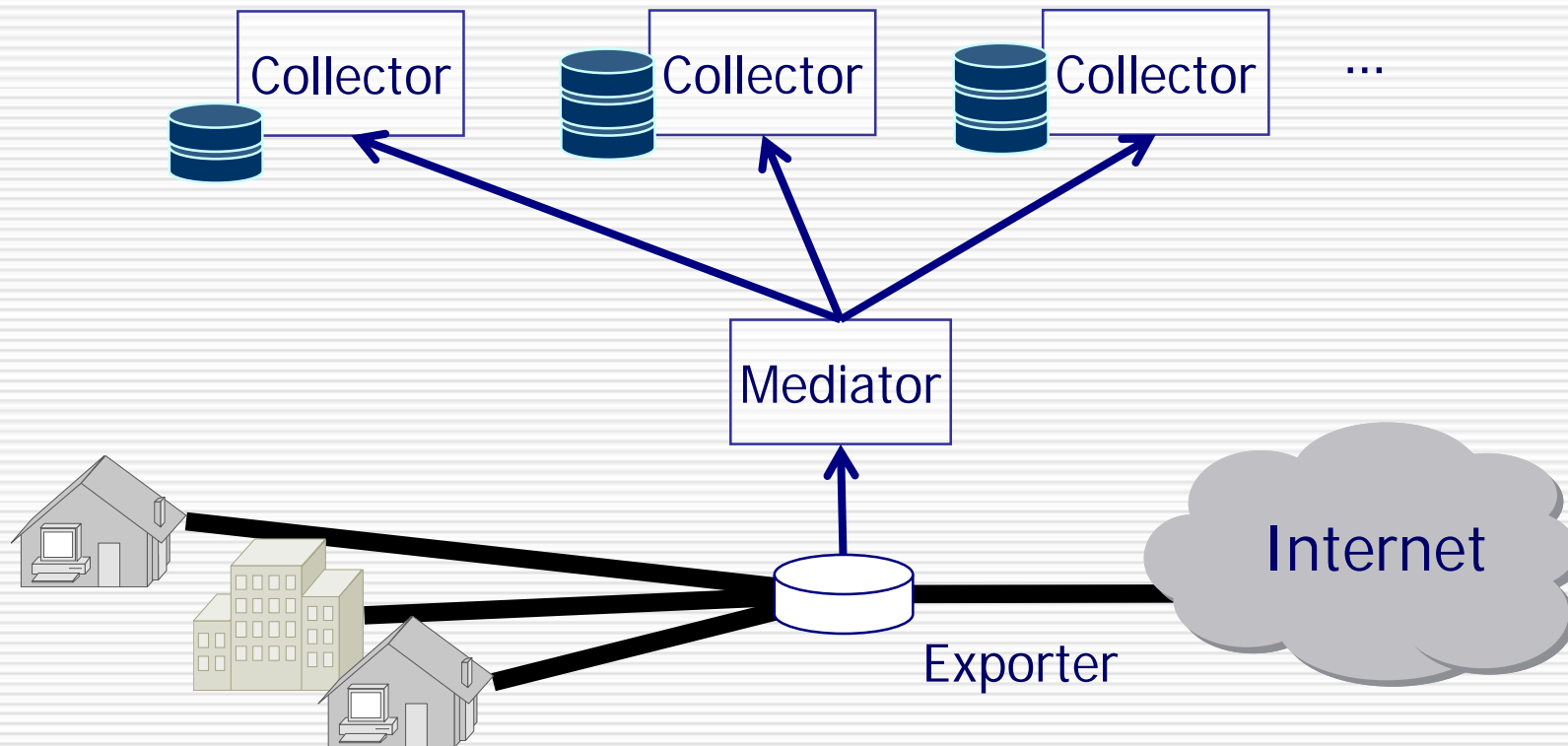
☐ Section 3.1. Inter-domain IPFIX Exporting

■ Applicable examples for anonymizing, filtering, and modifying Flow Records.

Collector

Anonymizing, filtering, and modifying

Mediator

Mediator

Exporter

Exporter
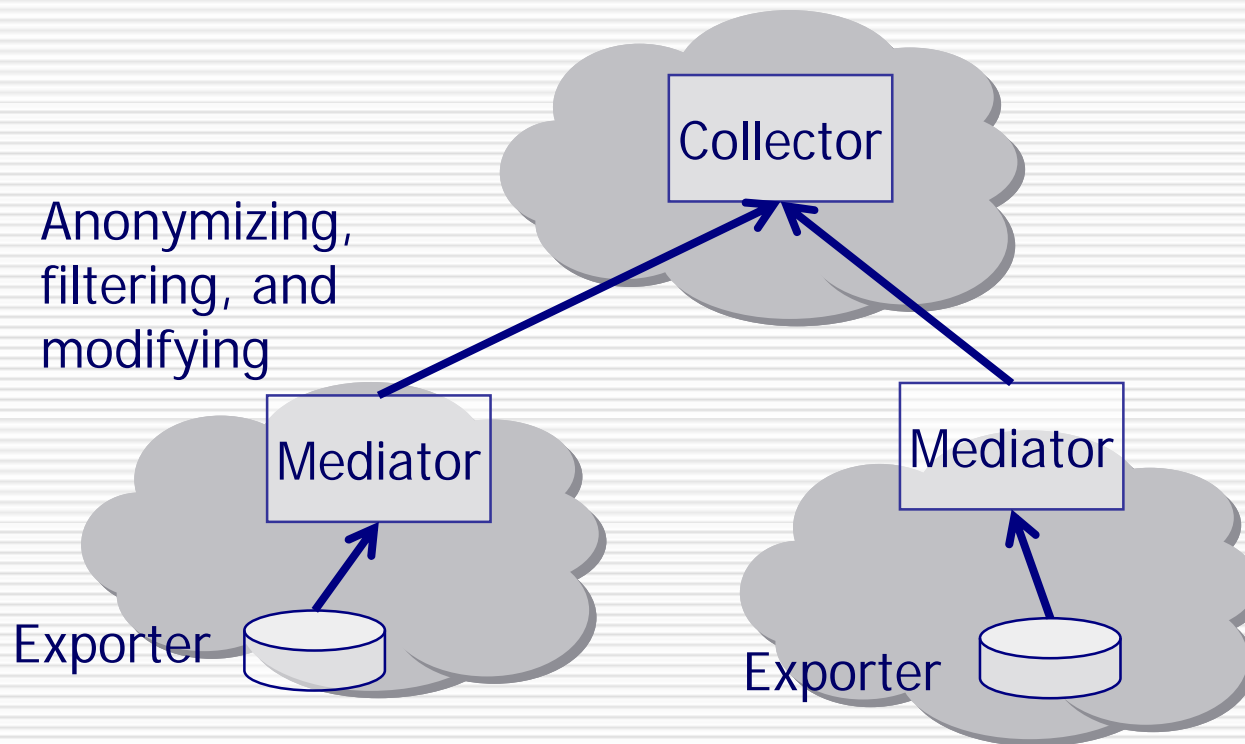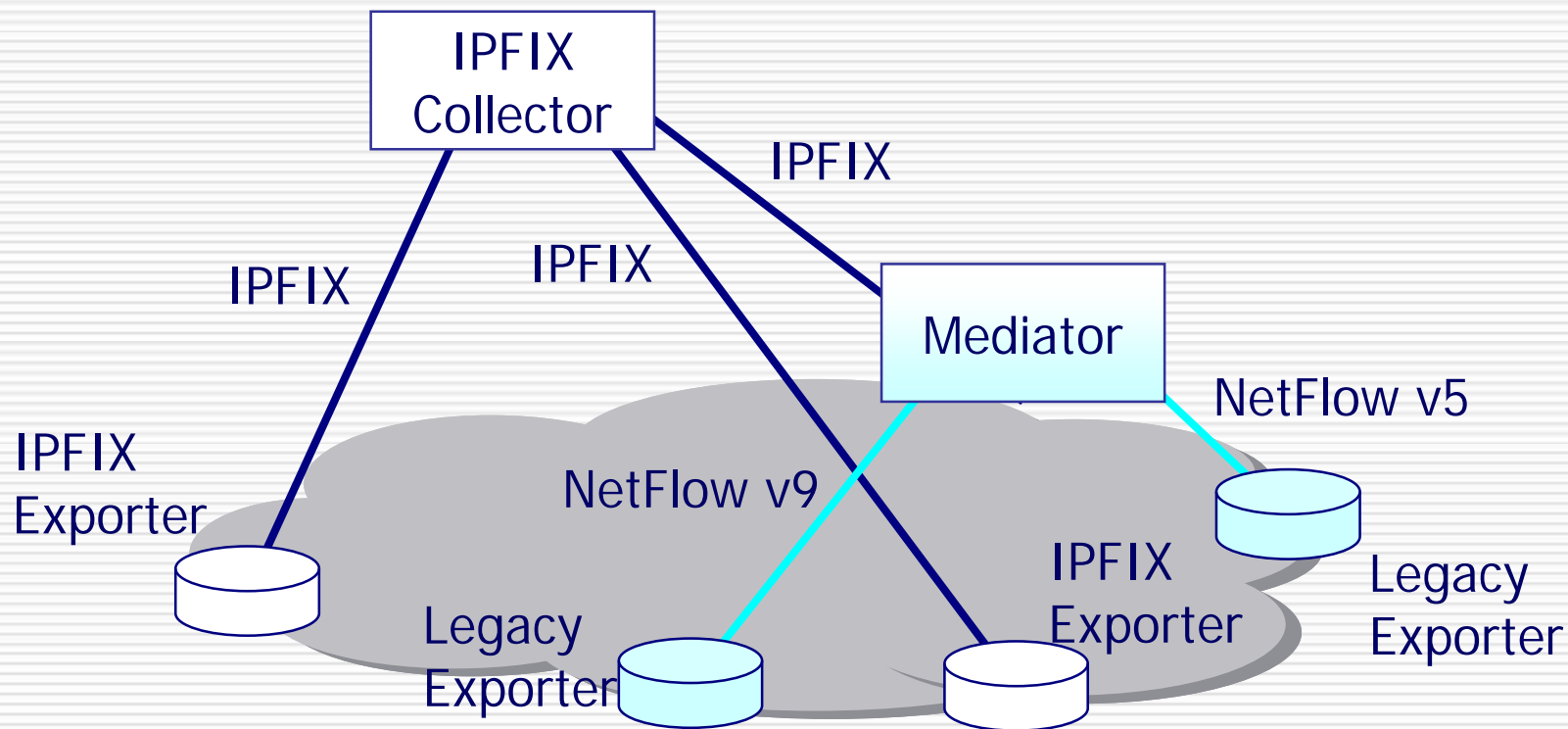
Changes from large-ps-01 (4)

☐ Section 3.2. Data retention

  ■ Data retention for Internet access service can be a storage system that uses Mediators and so on

Changes from large-ps-01 (5)

☐ Section 3.3. Interoperability between Legacy Protocols and IPFIX

  ■ A convert function from legacy protocol to IPFIX is needed during the migration process.

Changes from large-ps-01 (6)

- ☐ **Section 4 Approaches to Scalability**
  - ■ Two useful functions have been added.

4.   Approaches to Scalability

4.1. Adjusting Sampling Rates

4.2. Exporting Aggregated Flows from Original
      Exporters

4.3. Hierarchical Model of Flow Aggregation

4.4. Flow-Based Collector Selection

New 4.5. Flow Selection Sampling

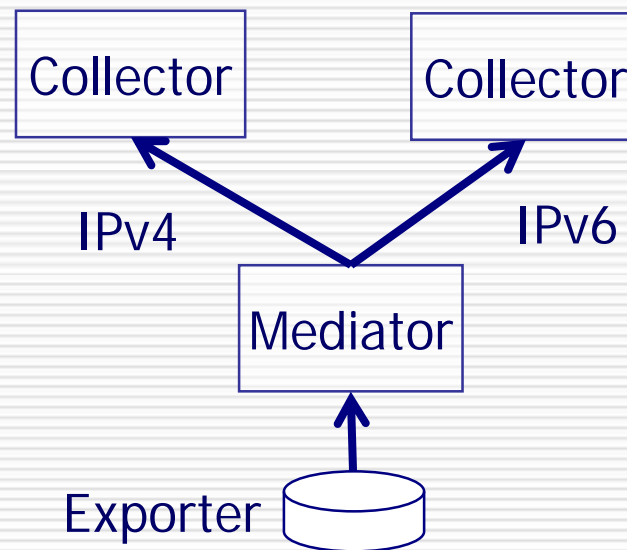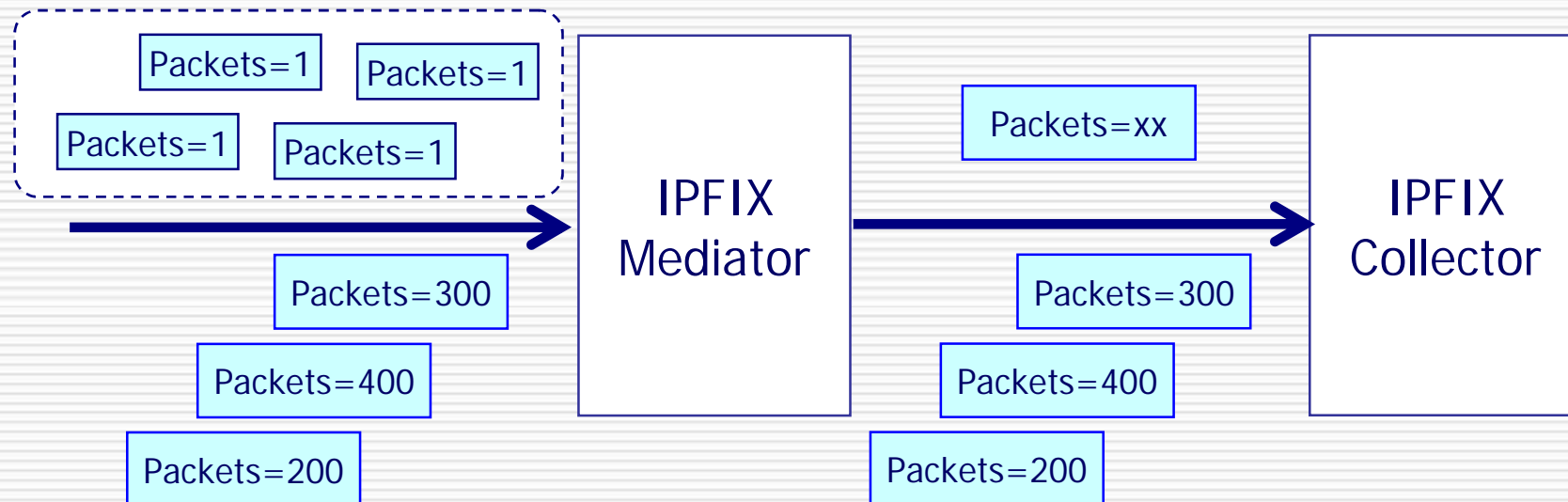**New** 4.6. Information Elements and Flow Keys Selection

Changes from large-ps-01 (7)

- ❑ Change the name to "Flow-based Collector selection" from "load-balancing" functions
  - ■ Selecting a specific Collector based on the content of a Flow Record is different from load-balancing.

Changes from large-ps-01 (8)

□ Section 4.5. Flow Selection Sampling

- ■ Selecting and then aggregating small Flows, which consist of a small number of packets, can reduce the load of Collectors.
- ■ Refer to "I-D. peluso-flowselection".

Changes from large-ps-01 (9)

- Section 4.6. Information Elements and Flow Key Selection
  - By utilizing the flexibility of the Metering Process and Exporting Process, IPFIX Collector can obtain the Flow Records of interest to the Operator.
  - Implementations are:
    - Setting Flow Keys in Metering Process.
    - Filtering Flow Records in Exporting Process.

Next step

- ☐ Submission of final draft to IESG by November, after Dublin IETF.