

IPFIX Alternate-Marking Information

draft-gfz-opsawg-ipfix-alt-mark-00

Prague, Nov 2023, IETF 118

Thomas Graf
Swisscom

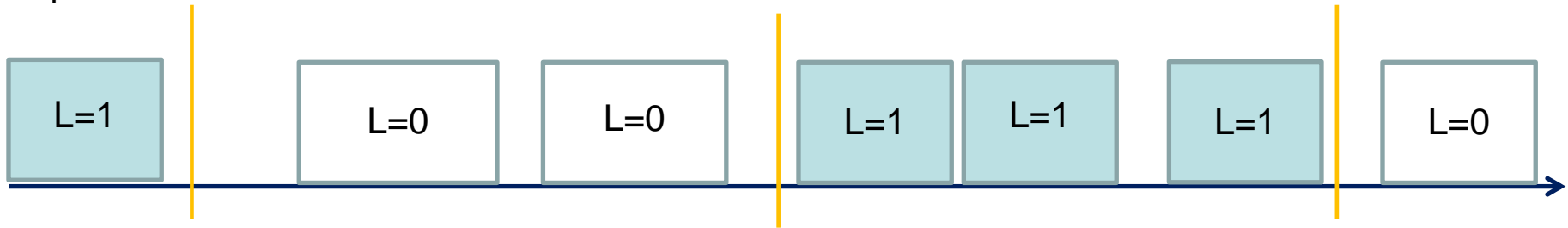
Giuseppe Fioccola
Tianran Zhou
Huawei

Fabrizio Milan
Massimo Nilo
Telecom Italia

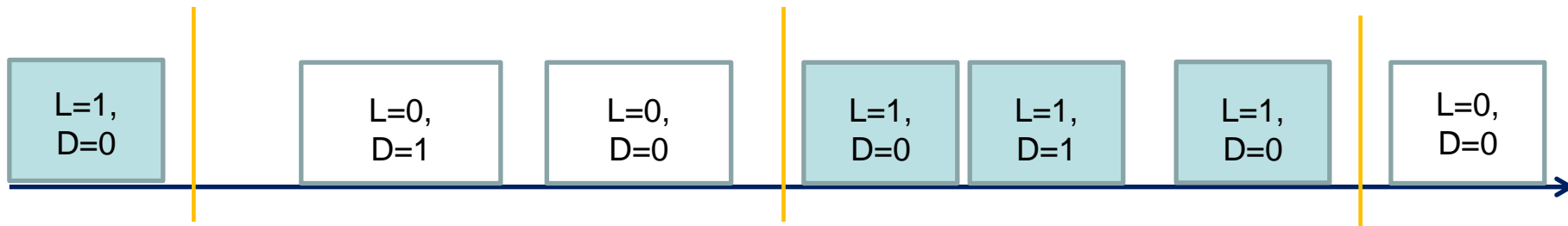
Alternate-Marking

- Alternate Marking methodology is an OAM Passive PM technique and enables Packet Loss, Delay and Delay Variation measurements.
- The reference documents are [RFC 9341](#) and [RFC 9342](#).

- Batching packets based on time interval to measure Packet Loss by switching value of L flag.
- First/Last Packet Delay calculation and Average Packet Delay and Delay Variation calculations are possible

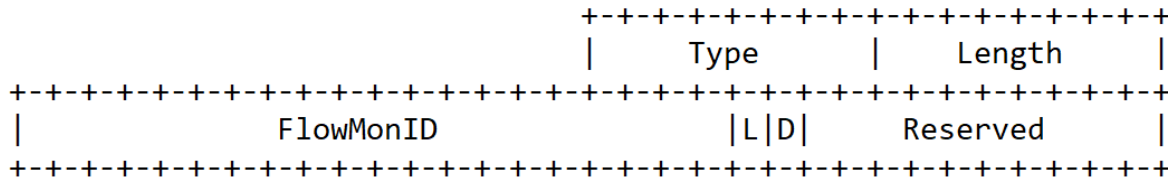


- Use D flag to create a new set of marked packets fully identified over the network. D-marked packets to calculate more informative Packet Delay Metrics



IPFIX Alternate-Marking IEs (1/2)

RFC 9343 defines the IPv6 option containing the FlowMonID, Loss (L) and Delay (D) flags



For data decomposition, the packet header sections (e.g. RFC9343 IPv6 AltMark EH), are being exposed as part of `ipPayloadPacketSection(IE314)`.

- The IPv6 payload is the rest of the packet following the IPv6 header and EHs are considered part of the payload.

For data aggregation, new IPFIX entities for FlowMonID, Loss and Delay flag are needed so that the data can now be aggregated according to RFC7015.

- Since new Flow Keys can be "promoted" from specific non-key fields, **FlowMonID**, **Loss flag** and **Delay flag** are considered Flow Key fields.
- It is also defined the PeriodID, which is needed for Alternate-Marking measurement correlation as per [draft-fz-ippm-alt-mark-deployment](#).

For data correlation, additional existing IPFIX entities are employed; e.g. Hostname, `ingressInterface(IE10)` and `egressInterface(IE14)`,...

IPFIX Alternate-Marking IEs (2/2)

For measurements, the packet count can be done with:

- `octetDeltaCount(IE1)` or `packetDeltaCount(IE2)`.

While, to calculate delay,

- either `flowStartSeconds(IE150)`, `flowStartMilliseconds(IE152)`, `flowStartMicroseconds(IE154)` or `flowStartNanoseconds(IE156)`, can be used depending on timestamp granularity requirements.
- It is also possible to use `flowEndSeconds(IE151)`, `flowEndMilliseconds(IE153)`, `flowEndMicroseconds(IE155)` or `flowEndNanoseconds(IE157)`.

This document requests IANA to create a new subregistry called “IPFIX Alternate-Marking” and include FlowMonID, Loss and Delay flag and PeriodID

Thank You

Comments are welcome!