Performance measurement with the alternate marking method in SFC

draft-mirsky-sfc-pmamm-01

Greg Mirsky gregimirsky@gmail.com
Giuseppe Fioccola giuseppe.fioccola@telecomitalia.it
Tal Mizrahi talmi@marvell.com

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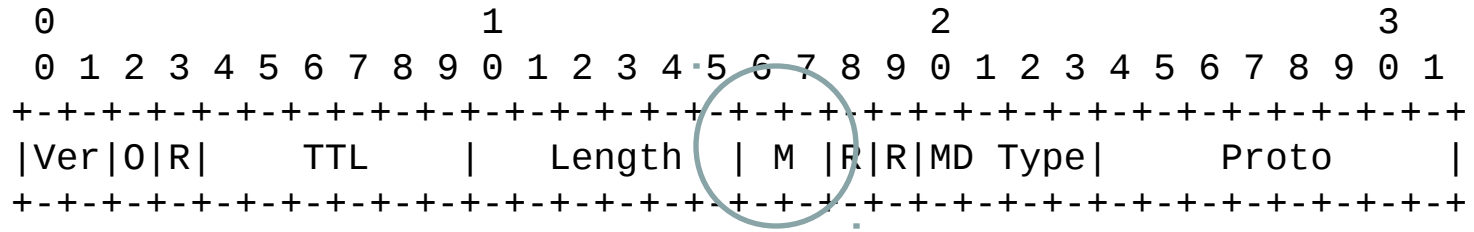
What and why

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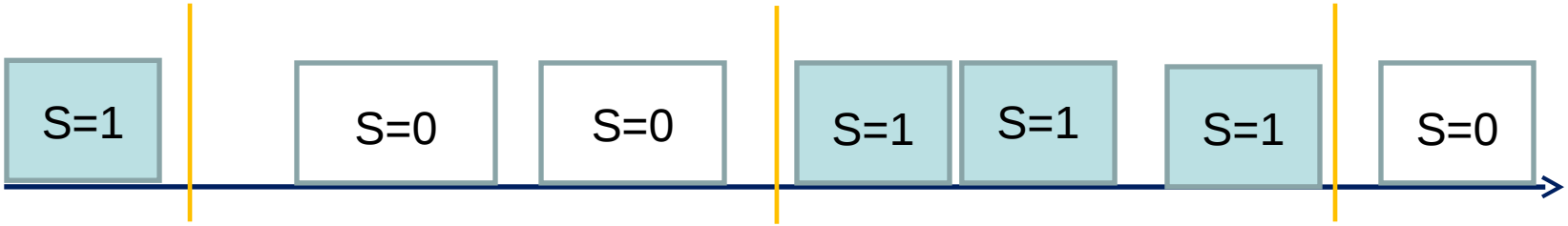
+-+-+                 Mark field
|S|D|                S – single mark method
+-+-+                D – double mark method
```

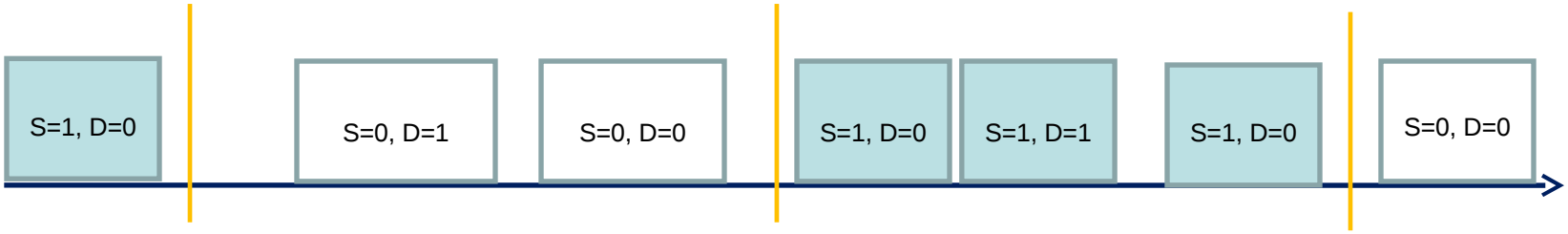
Single Mark Method

- Batching packets based on time interval to measure packet loss by switching value of the S flag. D flag MUST be set to 0 on transmit and ignored on receipt.
- First/Last Packet Delay calculation:
  - capture timestamp of when S flag value flips. Method is sensitive to packet loss and packet re-ordering
- Average Packet Delay calculation:
  - collect timestamps for each packet received within a single block. Average of the timestamp is the sum of all the timestamps divided by the total number of packets received. Hence minimally impacted by a packet loss and no impact if packets get re-ordered.
- Average Delay Variation calculation is possible



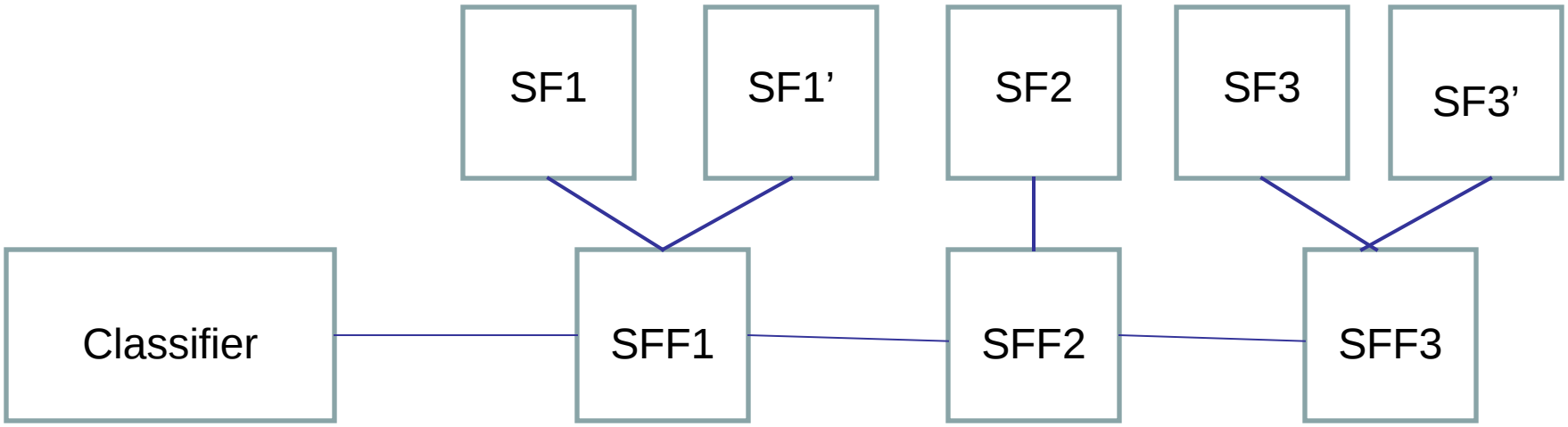
Double Mark Method

- Use S flag to create batch of packets as in Single Mark method
- Use D flag to create new set of marked packets that are fully identified over the BIER network
- Collect and compare timestamps on D-marked packets to calculate more informative one-way packet delay metrics, such as minimum, maximum delay, median and percentiles values.
- Double mark method may be implemented by multiplexing fields or making certain assumptions about characteristic information that identifies the flow. More information can be found in draft-mizrahi-ippm-multiplexed-alternate-marking-02



PMAMM Applicability

- The Classifier marks packets
- Measurement Point at SFF3 enables e2e Packet Loss measurement, efficient measurement of Mean (Average) Delay and full spectrum of timing metrics, e.g. minimum, maximum, median delay values, delay variation
- Measurement Point may be dynamically enabled at any of the SFC entities, e.g. any combination of SFs and/or SFFs, to localize service degradation



Next Steps

- Welcome questions, comments
- Address comments
- Adopt by WG

Thank you