Performance measurement with the alternate marking method in SFC
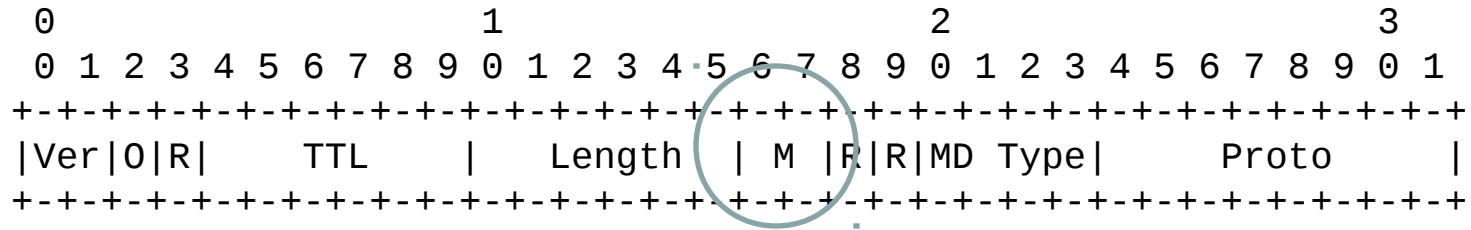
draft-mirsky-sfc-pmamm

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What and why

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|Ver|O|R|     TTL     |    Length   | M |R|R|MD Type|    Proto    |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+


+-+-+                 Mark field
|L|D|                L – Loss flag
+-+-+                D – Delay flag
```
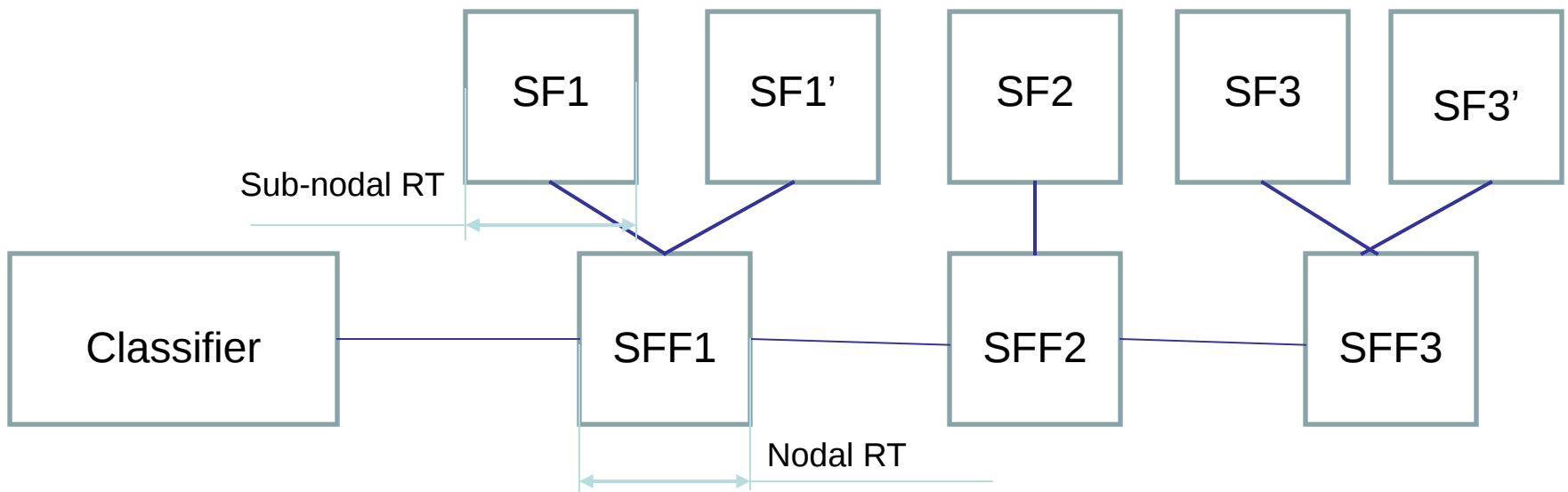
SFF and SF Residence Time

• Residence time is the variable part of the propagation delay that a packet experiences traversing a network, e.g. SFC.

• Residence Time over an SFC is the sum of the nodal residence times, i.e. periods that the packet spent in each of SFFs that compose the SFC.

• The nodal residence time in SFC itself is the sum of sub-nodal residence times that the packet spent in each of SFs that are part of the given SFC and are mapped to the SFF.

•The residence time and deviation of the residence time metrics may include any combination of minimum, maximum, values over measurement period, as well as mean, median, percentile. These metrics may be used to evaluate performance of the SFC and its elements before and during its operation.

SFC Residence Time Measurement with PMAMM

- Use of the specially marked packets simplifies residence time measurement and correlation of the measured metrics over the SFC end- to-end.

- The nodal and sub-nodal residence time metrics can be locally calculated and then collected using either in-band or out-band OAM mechanisms.

SFF1   SFF2

SFF

Nodal RT measurement point

Sub-nodal RT measurement point
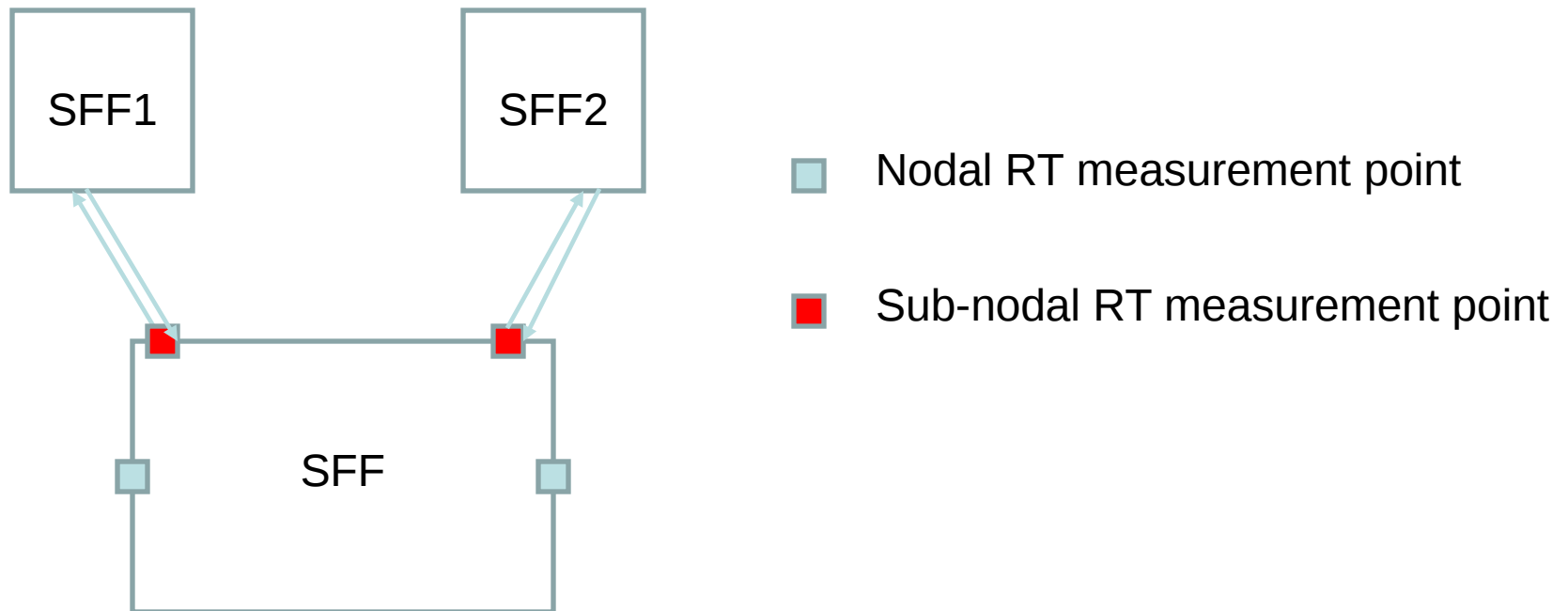
Next Steps

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

Thank you