IPPM multimetrics draft

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Update Overview

- Editorial changes
- Clarifications
  - Path Digest stability
  - Type-P-segment-Packet-loss-Stream
- IPDV metrics definitions
- Draft splitting ?
- Conclusion

Editorial

- Remove of remaining text related to passive metrics;
- Corrections based on Joseph inputs
  - odd capitalization, -, …;
- Completion of IANA Registry section

Path Digest stability

- Move explanations from definition to discussion sections:
  - Definitions are made on stable path digest
  - Path Digest change is covered in the methodology and in the discussion sections
- Segment metrics

  The metric is 'Undefined' when the packet in not observed at the fist point of interest.

- Methodology:
  - Change in the path leads to 2 spatial metric measures over time

    Measure(T0 to Tend) $\rightarrow$ Measure(T0 to Tchange) + Measure(Tchange to Tend)

- Examples

  { Src, H1, …, **Hk**, …, Hn, Dst} $\rightarrow$ { Src, H1, …, **Hk'**, …, Hn, Dst}

  { Src, H1, …, Hk, …, Hn, Dst} $\rightarrow$ { Src, H1, …, Hk, …, Hn, Hn+1, Dst}

  { Src, H1, …, **Hk, Hk+1**, …, Hn, Dst} $\rightarrow$ { Src, H1, …, , **Hk+1**, **Hk**, …, Hn, Dst}

Type-P-segment-Packet-loss-Stream

- Type-P-segment-Packet-loss-Stream definition
  - Same value as Type-P-One-way-Packet-loss-Stream (RFC2680)
    - '1' still means :
      - Packet observed by the first point of interest and NOT by the second point of interest (after a while),
    - '0' still means :
      - Packet observed by the first point of interest and the second point of interest,
  - New value 'Undefined'
    - Packet not observed by the first hop
      - subcase1 : and not observed by the second hop
        » packet may be lost before (per def)
        » or Path may have change (measure issue),
      - subcase2 : and observed by the second hop
        » Not possible (per def);
        » Path may have change (measure issue)

Segments IPDV metrics

- Which ipdv metrics ?
  - Motivation from as draft-ietf-ippm-delay-var-as
- IPDV between 2 points of interest of a path
  - Type-P-Spatial-Segment-ipdv-prev-Stream
  - Type-P-Spatial-Segment-ipdv-min-Stream
- Extracted from the matrix of Type-P-Spatial-One-way-Delay-Vector over time

Segments IPDV metrics methods

```
 Src       H1        H2             Ha             Hb        Hn    Dst

+------------------------------------------------------------------> space
|<T1, dT1.1, dT1.2, ...,|dT1.a, ..., dT1.b,|..., dT1.n, dT1>
|<T2, dT2.1, dT2.2, ...,|dT2.a, ..., dT2.b,|..., dT2.n, dT2>
|  ...
|<Tm, dTm.1, dTm.2, ...,|dTm.a, ..., dTm.b,|..., dTm.n, dTm>
|
V time
         Figure 1, matrix of Type-P-Spatial-One-way-Delay-Vector over time
```
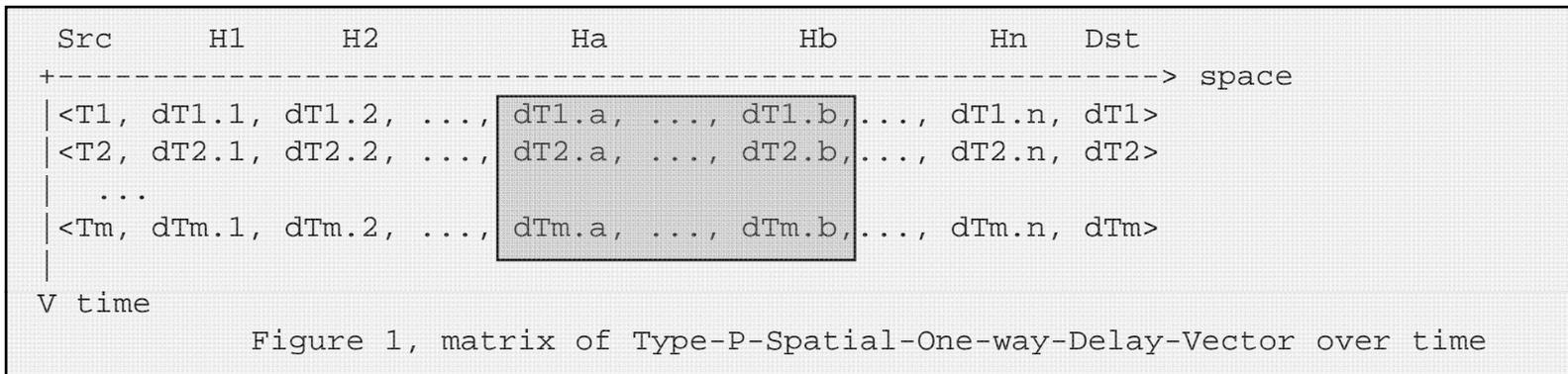
2 steps
- – get the stream of delays
- – compare each term with the delay of reference

Step1 is common: <dT1.b – dT1.a, dT2.b – dT2.a,…, dTm.b - dTm.a>

Step2 of Type-P-Spatial-Segment-ipdv-prev-Stream:
  compare to the previous delay
  <dT2.b–dT2.a – (dT1.b–dT1.a),…,dTm.b-dTm.a –(dTm-1.b-dTm-1.a)>

Step2 of Type-P-Spatial-Segment-ipdv-min-Stream
  compare to the minimum delay of the stream
  <dT1.b–dT1.a – min(dTi.ab), dT2.b–dT2.a – min(dTi.ab),…,dTm.b-dTm.a –min(dTi.ab)>

Splitting ?

- pro
  - smaller documents will encourage review
  - Clear topics: 'multicast', 'spatial'
  - May encourage the adding of more statistic metric;
  - Faster IESG review
- Con
  - Share matrix framework and discussion time vs space
    - Lot of duplicate text in the 2 drafts or unclear dependency
  - 3 meeting ago, use case mixing spatial and multicast metrics
- Author suggestion…

Conclusion

Author suggestion …

- Metrics definition and discussion achieved,

- Matrix methodology and discussion of aggregation order (time and space vs space over time) well achieved

WGLC is the right alternative