ISIS Fragment Timestamping
draft-rigatoni-lsr-isis-fragment-timestamping-00

IETF 120

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Problem and Assumptions

- It would be convenient to
  - measure flood delays across diameter, max/deviation/etc
  - measure on TED database how quickly information from nodes propagates to allow better optimization of TE under congestion
  - be able to indicate when a node issued the last fragment (stability of network)
  - And similar other stuff

- For any approach to work decently synchronized clock on all nodes is necessary
  - Timestamps carry clock precision of the node
Proposal

- **Timestamp with Precision**
- **Optional TLV on each fragment**
- **Format**

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-------------------------------+
| Type  | Length |
+-------------------------------+
+-------------------------------+
| Seconds                        |
+-------------------------------+
| Frac   | Prec   |
+-------------------------------+
```

- Seconds roughly PTP epoch with bits offset trickery to overflow in 2078
- Frac in 1/16 of second (~60msecs)
- 0 = 1sec max. slip, 15 value is ~60msec deviation again