In-situ OAM Processing in Tunnels

draft-song-ippm-ioam-tunnel-mode-00

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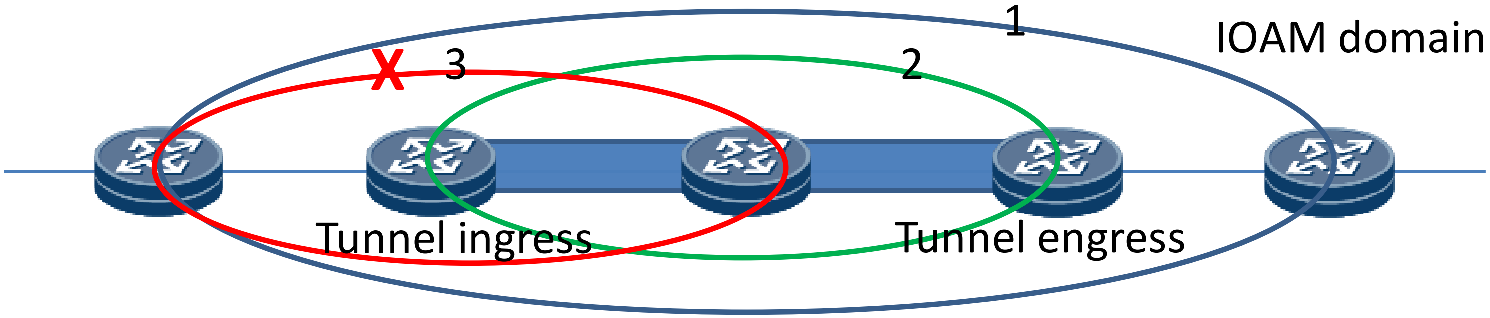
Motivation

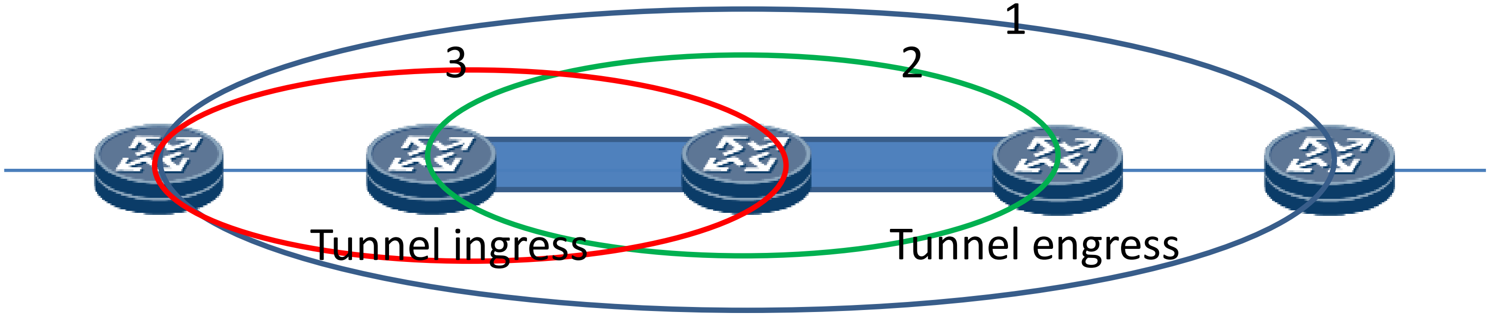
- Pipe mode as in draft-ietf-ippm-ioam-data-03
  - If several encapsulation protocols (e.g., in case of tunneling) are stacked on top of each other, IOAM data-records could be present at every layer.
  - The behavior follows the ships-in-the night model, i.e. IOAM data in one layer is independent from IOAM data in another layer.
- More comprehensive description on how IOAM should be processed in a network with tunnels.
  - Uniform mode (new)
  - Pipe mode

Uniform Mode

- The Uniform Mode treats the nodes in a tunnel uniformly as the nodes outside of the tunnel on an E2E path. E.g. hop count.
- **Method 1**: **copy** the IOAM header from overlay to underlay at the tunnel ingress; **copy** the IOAM header back from the underlay to the overlay at the tunnel egress.

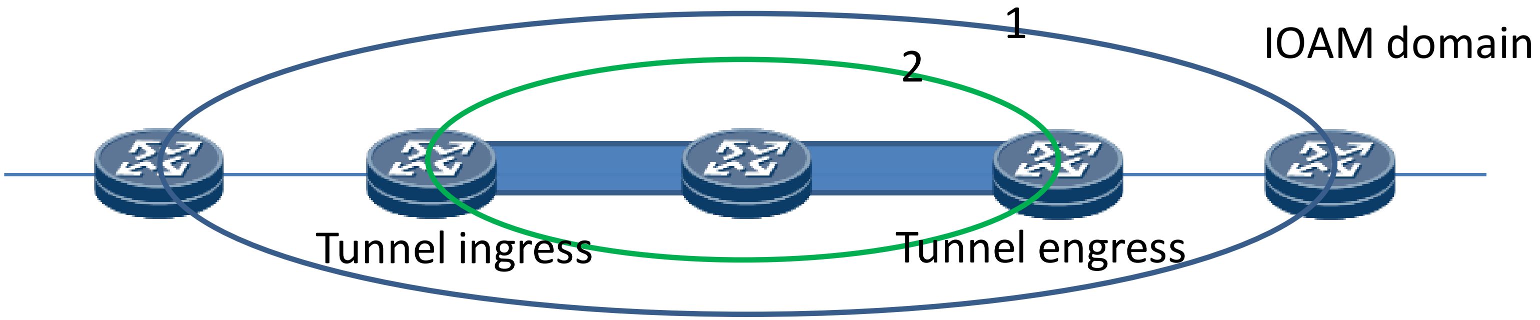


- **Method 2**: **move** the IOAM header from overlay to underlay at the tunnel ingress; **move** the IOAM header back from the underlay to the overlay at the tunnel egress.



Pipe Mode

- The Pipe Mode abstracts all the nodes between the tunnel ingress and egress as a circuit so no nodes in the tunnel is visible to the nodes outside of the tunnel.
- IOAM header is kept within the layer as it’s firstly added.
- The hop-by-hop iOAM data is missing for the tunnel. However, this mode provides a convenient way to pass through third party tunnels.
- Both underlay and overlay can be monitored by different entities
  - The underlay operators can support IOAM independently to monitor the tunnel performance.
  - The overlay operators see the entire tunnel as just one hop.



Next

- Comments?
- Apply this to specific IOAM transports.

Thank you