Prefix Unreachable Announcement

draft-wang-lsr-prefix-unreachable-annoucement-11

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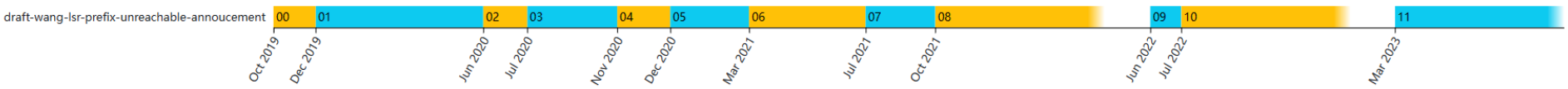
History of Proposed Solution



- Proposed first on Oct, 2019.
- Presented already 5 times(IETF 106, 108,110,111,115)
- Several rounds intense discussion on LSR list:
  - Control Plane
  - Covered Use cases/BGP Tunnel SRv6 etc.
  - Alternate Solutions: BGP PULSE NLP(Node Live Protocol)/DROID UPA
- Solution Converging
  - PUA(M)/UPA
- From the presentation and discussions after IETF 115
  - UPA(redefine and explore the LSInfinity) can lead more confusions about its definition and deployment within the network.
  - Together with the newly defined flags definition for explicit notification even worse.

Key Points of the Proposal

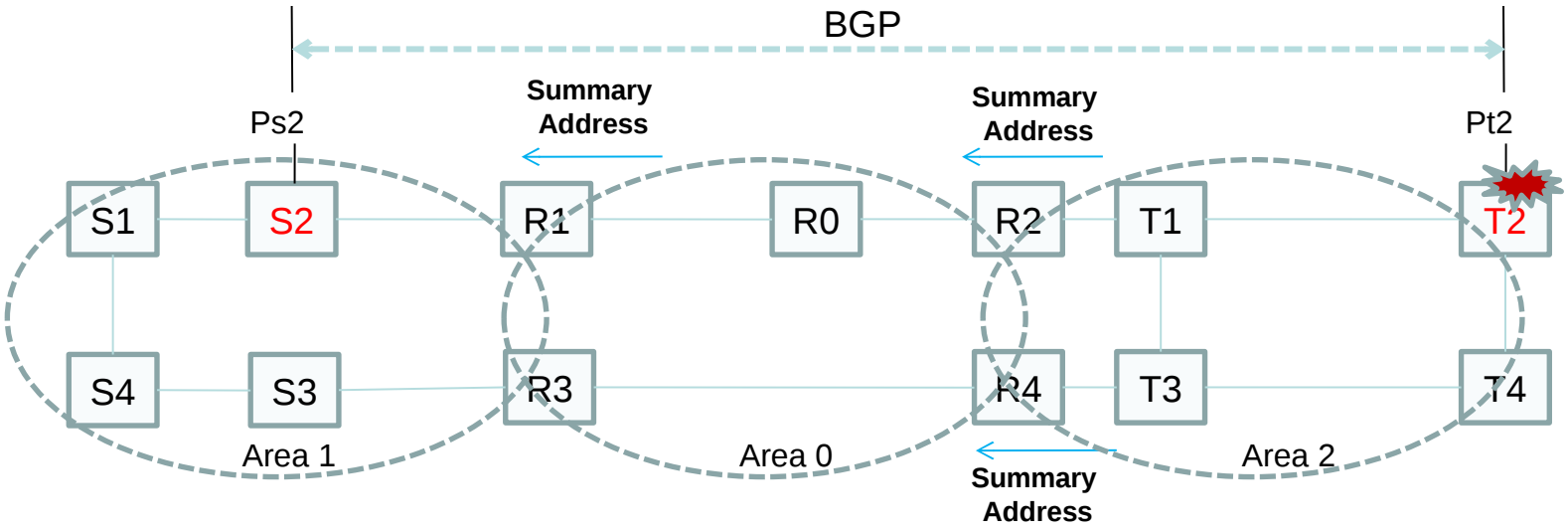
- Summary Address advertisement at the ABRs(OSPF) or Level 1/2 routers(IS-IS) hide the unreachability of its covered prefixes.

- Overlay Services(BGP SRv6 etc. tunnel services) need to know the unreachability of communication endpoints to switchover promptly to other alternative endpoints

- Upon the failure occurs, the ABR or Level 1/2 router advertise PUAM message within its attached area or level.
  - Routers within the attached area/level announce its PUAM capabilities.
    - If all support, ABR/Level 1/2 router just advertise PUAM message.
    - If not all support, ABR/Level 1/2 router advertise PUAM message with the prefix metric set to LSinifinity (Bypass---No change to the original meaning of LSinifinity)

Special Considerations

- ✓ PUA(M) message declare explicitly the associated prefixes is unreachable
  - Set its “Prefix Originator” (RFC9804/RFC7794) to NULL(0.0.0.0)
- ✓ For partition scenario(only some of the ABRs can’t reach the prefix)
  - The ABR can reach the prefix should announce one detail route to the prefix, to supersede the summary route.
- ✓ MAX_Address_Announcement (MAA) threshold setting.



OSPF Prefix Unreachable Scenario (Node Failure)

Further Action

- Comments?
- It’s time to adopt as WG document!

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