

# OSPF Extension for Prefix Originator

[\[draft-wang-lsr-ospf-extension-prefix-originator\]](#)

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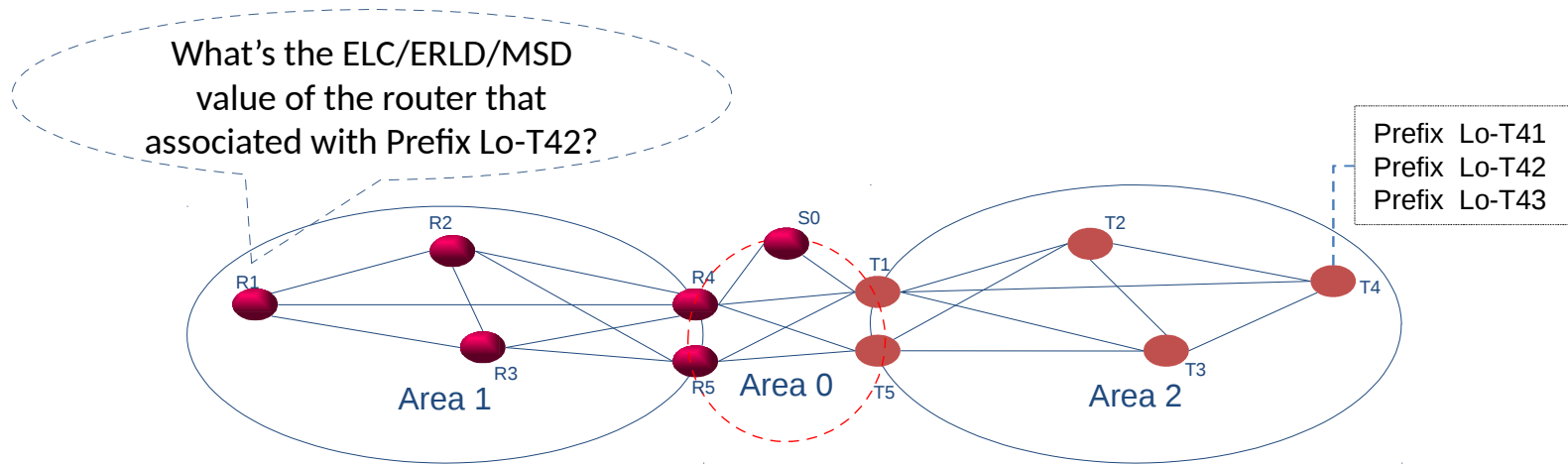
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# Use Cases of Prefix Originator(1/2)

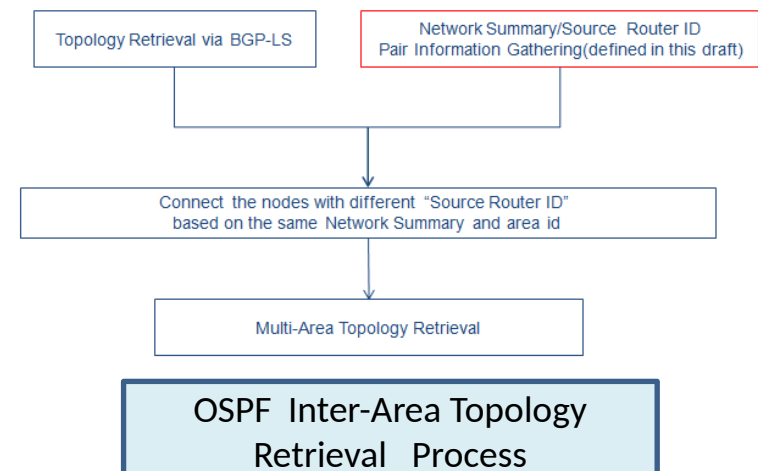
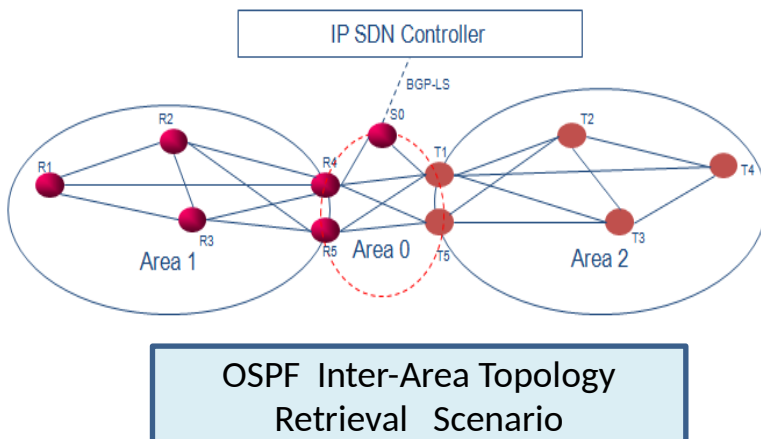
1. Draft [[I-D.ietf-ospf-mpls-elic](#)] defines mechanism to signal ELC and ERLD capability.
2. Draft [[I-D.ietf-ospf-segment-routing-msd](#)] defines multiple types of supported Maximum SID(maximum label depth) at node/link granularity.
3. Ingress LSR use such information to push appropriate label stack for specific traffic.
4. Within inter-area scenario, the prefixes originator information in another area is omitted by ABR router, it is necessary to transfer them that associated with the prefixes.



OSPF Inter-Area Prefix Originator Scenario

# Use Cases of Prefix Originator(2/2)

1. The advantage of SDN controller is its global view of underlay topology.
2. When the underlay network is divided into several areas:
  - The operator prefer to build BGP-LS session with one/two routers in backbone area.
  - The detail topology information in other area is hidden by the ABR router
  - The SDN controller can only get summary topology information in other areas.
3. If the SDN controller knows the originator of the each link prefix, it can retrieval the detail inter-area topology, at least in some general situations, as that described in [Appendix](#) of this draft.



# OSPF extension for Prefix Originator

- Define new sub-TLV “**Prefix Source Router ID**”
- For IPv4 network, it is the following:
  - Type: IPv4 Source Router ID Type(TBD)
  - Length: 4
  - Value: IPv4 Router ID of the source of the advertisement
- This sub TLV should be included in the "OSPFv2 Extended Prefix Opaque LSA" that defined in [[RFC7684](#)]
- For IPv6 network, it is the following:
  - Type: IPv6 Source Router ID Type(TBD)
  - Length: 16
  - Value: IPv6 Router ID of the source of the advertisement
- This sub TLV should be included in "E-Inter-Area-Prefix-LSA" that defined in [[RFC8362](#)]

# Extend LSA Operation Procedure

1. When ABR receives the “Router LSA” announcement in one area, it should generate the corresponding LSA in OSPFv2 or OSPFv3
2. These LSAs should include the newly defined sub TLV “Source Router ID”
3. ABR then floods these summary LSAs to routers in other area.
4. The routers in other area accomplish the judge/report work for the associated prefixes.

RFC7794 introduces "IPv4/IPv6 Source Router IDs" TLV to label the source of the prefixes redistributed from different Level, this TLV can also be used in the above scenarios.

# Further Action

- Comments?
- Adopt as WG draft?

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