

Multi-domain MPLS Deployment Enhancement

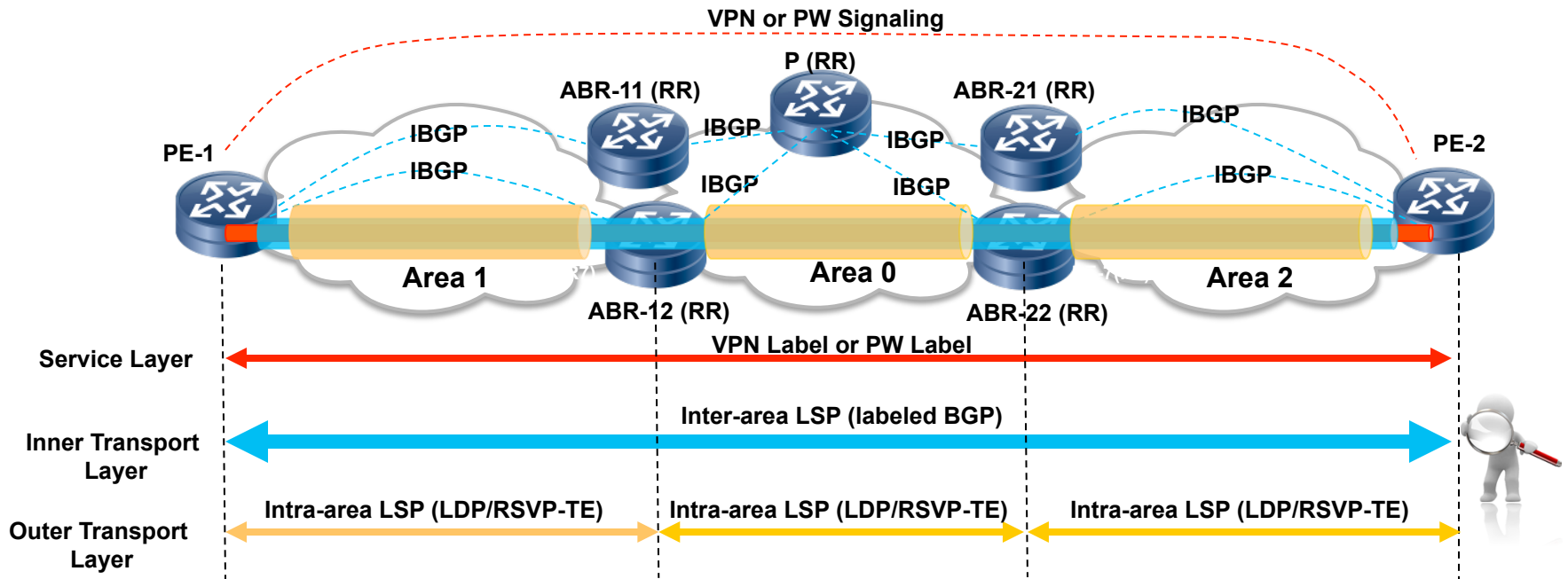
**draft-xu-mpls-multi-domain-deployment-
enhancement-00**

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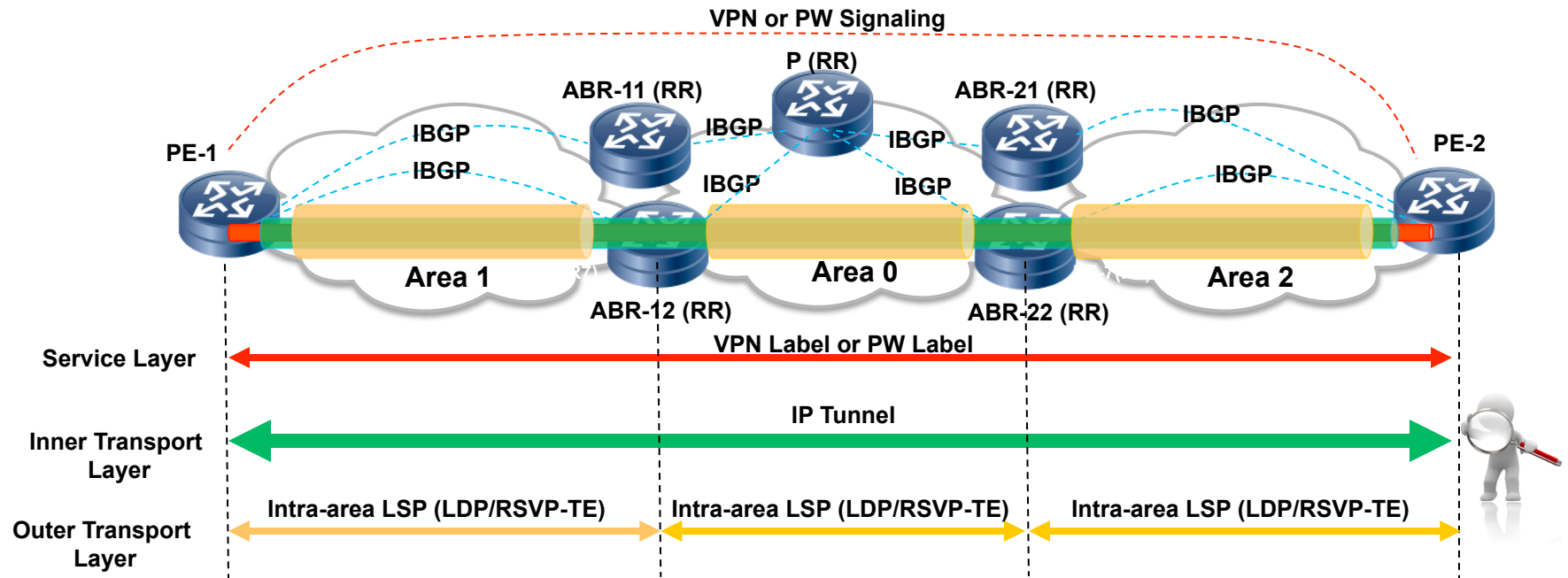
Current Deployment



■ Potential challenges:

- Labeled BGP routes for PE routers are non-aggregatable and therefore it would cause BGP RIB and even MPLS forwarding table scalability concerns, especially in large-scale networks (e.g., in seamless MPLS target scenario, there would be 100,000 access nodes which act as PE routers)
 - BGP filter could limit the propagation of the labeled routes but this approach is heavy-duty and less effective for some nodes where a lot of inter-domain LSPs pass through.
- Egress BGP node protection mechanism is complex due to labeled BGP routes.

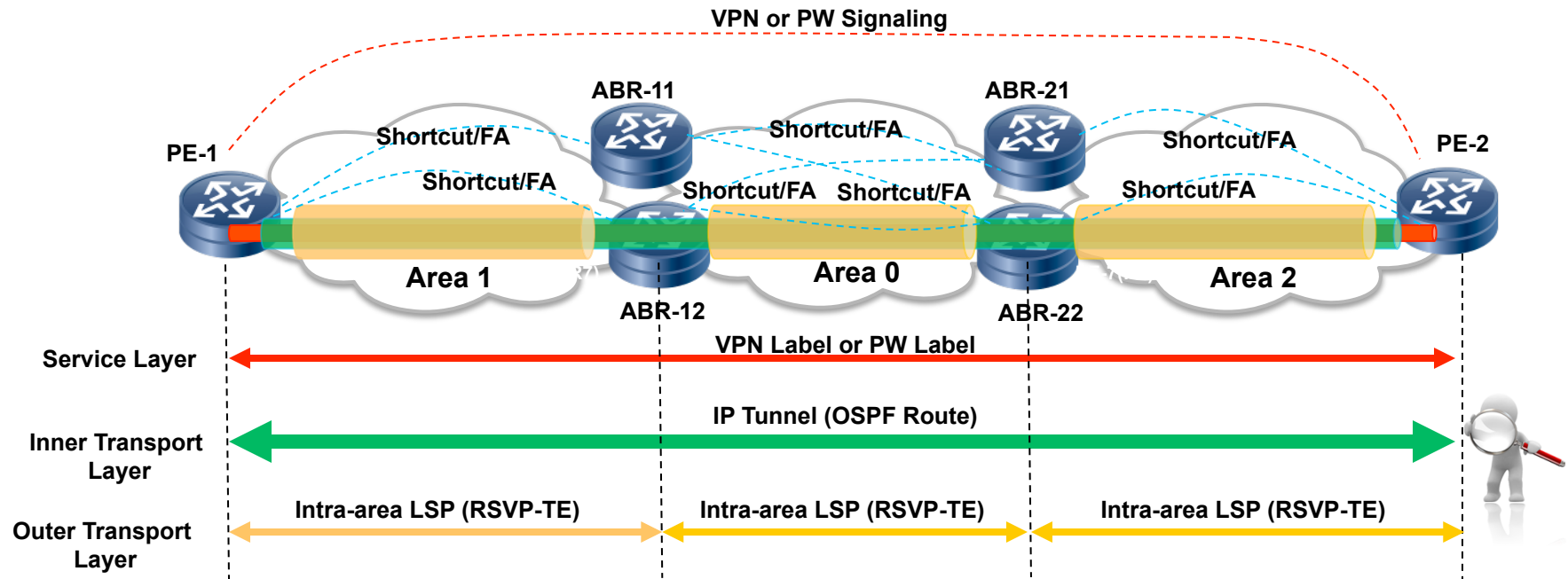
Enhanced Deployment



- **The innermost transport LSP (i.e., BGP signaled LSP) is replaced with an IP tunnel.**

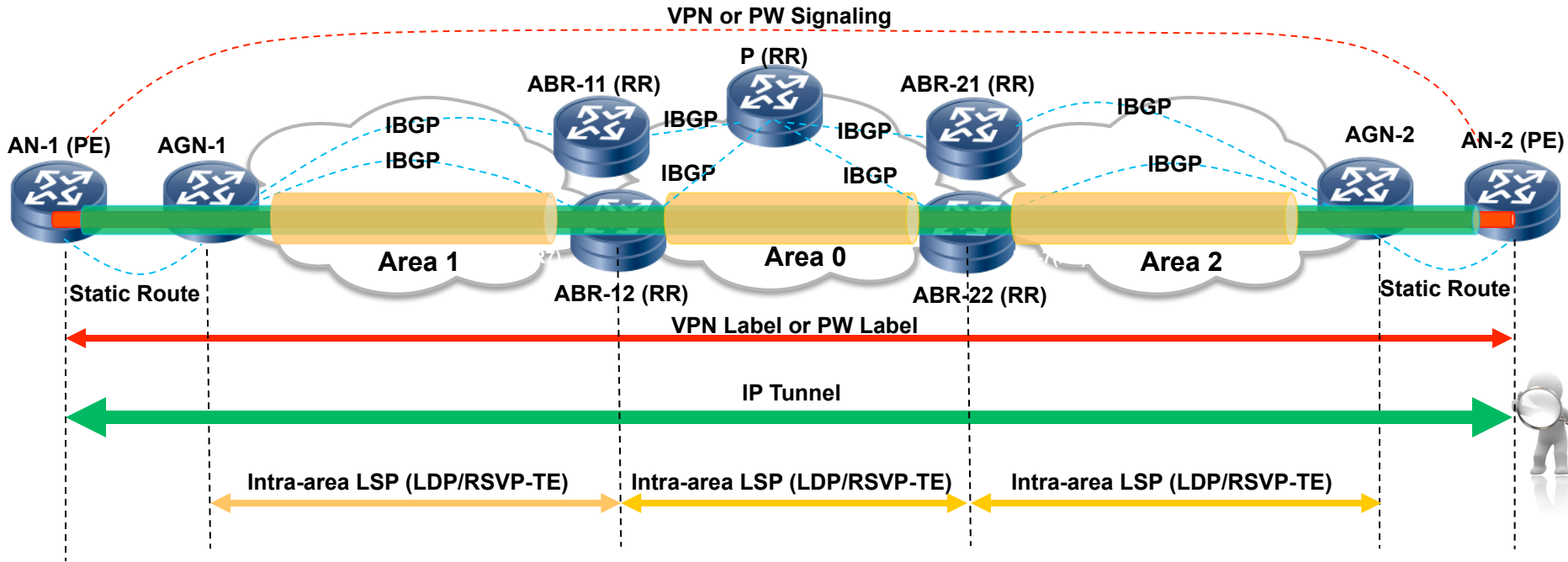
- Labeled BGP routes for PE routers are replaced with vanilla BGP routes which could be aggregated when crossing domain boundaries.
- Egress BGP node protection mechanism is greatly simplified (e.g., ABR11 and ABR12 use an anycast address as the BGP next-hop when LDP is used for establishing intra-domain LSPs).

Enhanced Deployment (cont)



- In the multi-area/level case where IGP short-cut or forwarding-adjacency (FA) feature is available, BGP signaling between ABRs and PE routers can be eliminated further.
 - As a result, the network provisioning work is simplified further.

Enhanced Deployment (cont)



- In the target scenario of seamless MPLS, access nodes (AN) just need to perform MPLS-in-IP encapsulation while aggregation nodes (AGN) just need to support BGP free core feature.

Next Steps

- **WG adoption of this draft as an informational draft?**