

Requirements and Framework for Unified MPLS Sub-Network Interconnection

draft-allan-unified-mpls-req-frmwk-00

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Background

- Starting point was “Interworking between MPLS-TP and IP/MPLS”
 - `draft-martinotti-mpls-tp-interworking`
- We realized it was a prime, but not the only practical example of “FOO to BAR” interworking in the MPLS space
 - “FOO to FOO” had been previously explored
 - E.g. IP/MPLS Forum M-ICI
- It would make sense to generalize mechanisms to support “FOO to BAR” interworking scenarios to maximize utility

Problem Space

- MPLS has numerous operating models or “profiles” that can be interconnected or stacked
 - *infrastructure*: topology driven, traffic engineered, transport
 - *services*: VPLS, VPWS, BGP L3 VPN, BGP MPLS VPN
 - Both with a variety of control plane/management plane options
- Stacking MPLS has typically seen a logical decoupling of the layers
 - Minimizes operational impacts and permits “separation of interest” between infrastructure, operations and services
 - For example: overlaying BGP VPN on hop-by-hop LDP just “works”
 - This has permitted process “re-engineering” by operators
- What has been ***missing*** to date is the same logical decoupling and “separation of interests” for peer interconnect

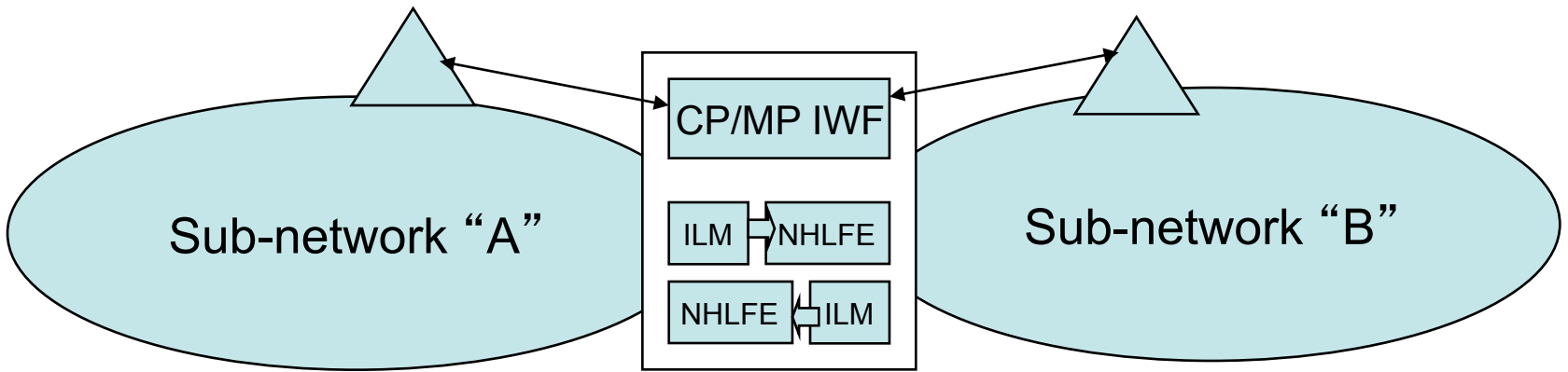
This is what the Sub-Network Interconnect draft sets out to address

Content of the Draft

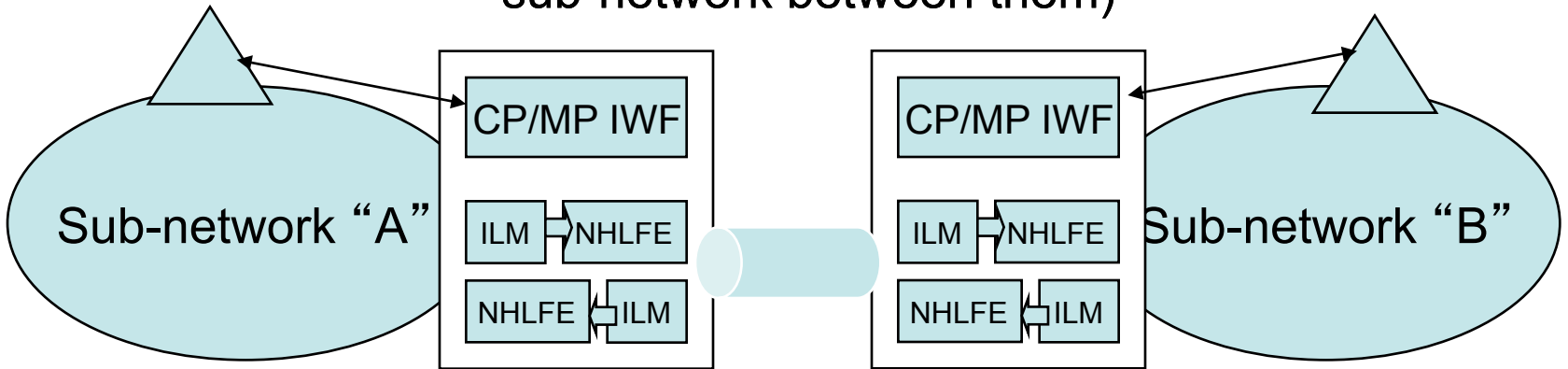
of the “meta rules” for mapping connectivity in one sub-network to another sub-network at a particular label level

- Abstracted to the level of how LSPs are identified in automation
 - Connect this domain “A” LSP to this domain “B” LSP
 - This will ultimately resolve down to label mappings at a border node
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 - What is required is a generalized object that permits any MPLS LSP/
PW description to be mapped to any other description
And the object will have a number of attributes independent of the sub-
networks that are interconnected
 - And the overall solution will have a number of requirements
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 - Migration to a common set of OAM DP identifiers/encapsulations
 - This is enabled by the MPLS-TP work
 - Desirable operational characteristics
 - Hitless adds/moves/changes
 - Persistence is independent of the state of the LSP in each domain
- logical binding is independent of the state of the LSP in each domain

As per draft-martinotti



Border link (effectively two border nodes back to back, with a one-hop sub-network between them)



Next Steps

- Explicitly seeking WG feedback!
- Identify gaps in current work to produce a “complete solution”