Proposal: A new LHCONE core architecture

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LHCONE Architecture WG

Approach

- Current LHCONE implementation hard to debug, needs re-design to be future-proof

- Discussion SURFnet, SARA NRG, NL-T1

- This presentation based on proposal sent to LHCONE architecture working group mailing list: 2 proposals, 1 appendix

- Timelines also TBD, proposals are on a 2+ year timeline

LHCONE Multipoint Service
Based on hybrid Layer 2 and Layer 3 infrastructure

Appendix –
Not a proposal!
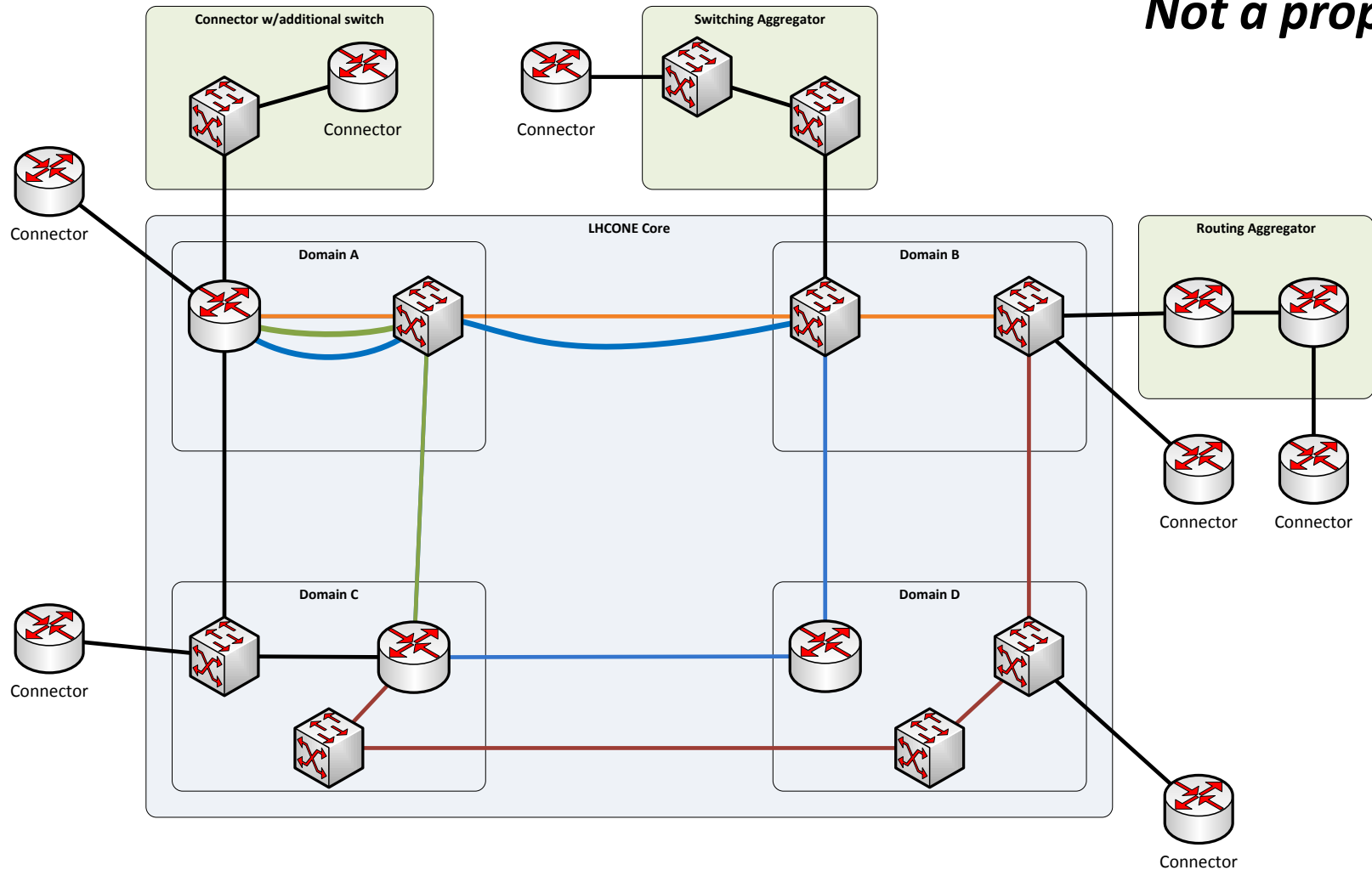
- Not adding anything essentially new to the existing IP interconnectivity of the current networks
- Because of routers present inside the LHCONE core, (new) tiers will not benefit from the lowest equipment cost, compared to a layer 2 solution

LHCONE Multipoint Service
Based on Shortest Path Bridging
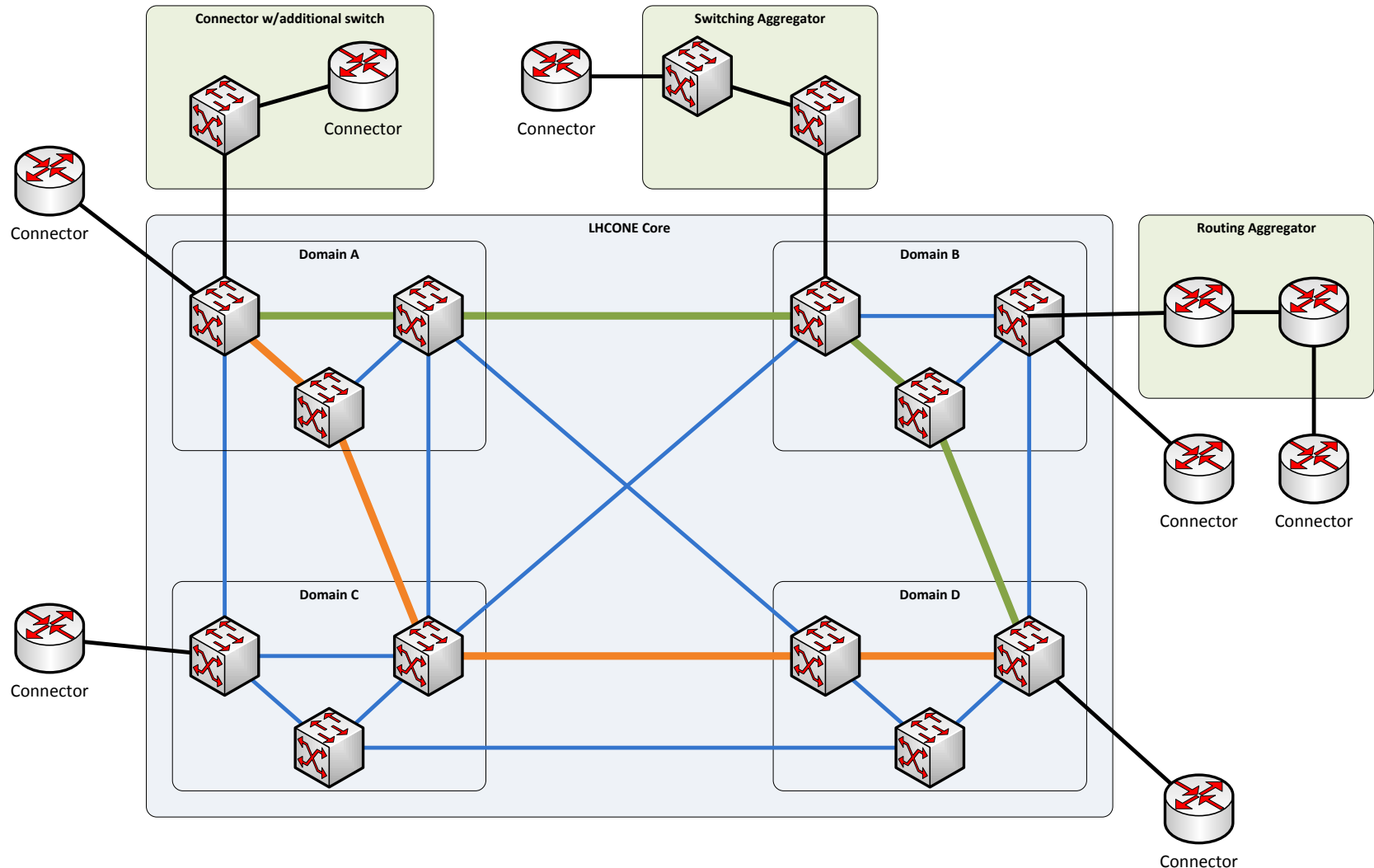
- Ethernet domain using the IEEE 802.1aq (Shortest Path Bridging) protocol or the TRILL (Transparent Interconnect of Lots of Links) protocol, possibly implemented through OpenFlow; Ethernet OAM available

- Needs feasibility study, research (see Worddoc sent to the list), milestones
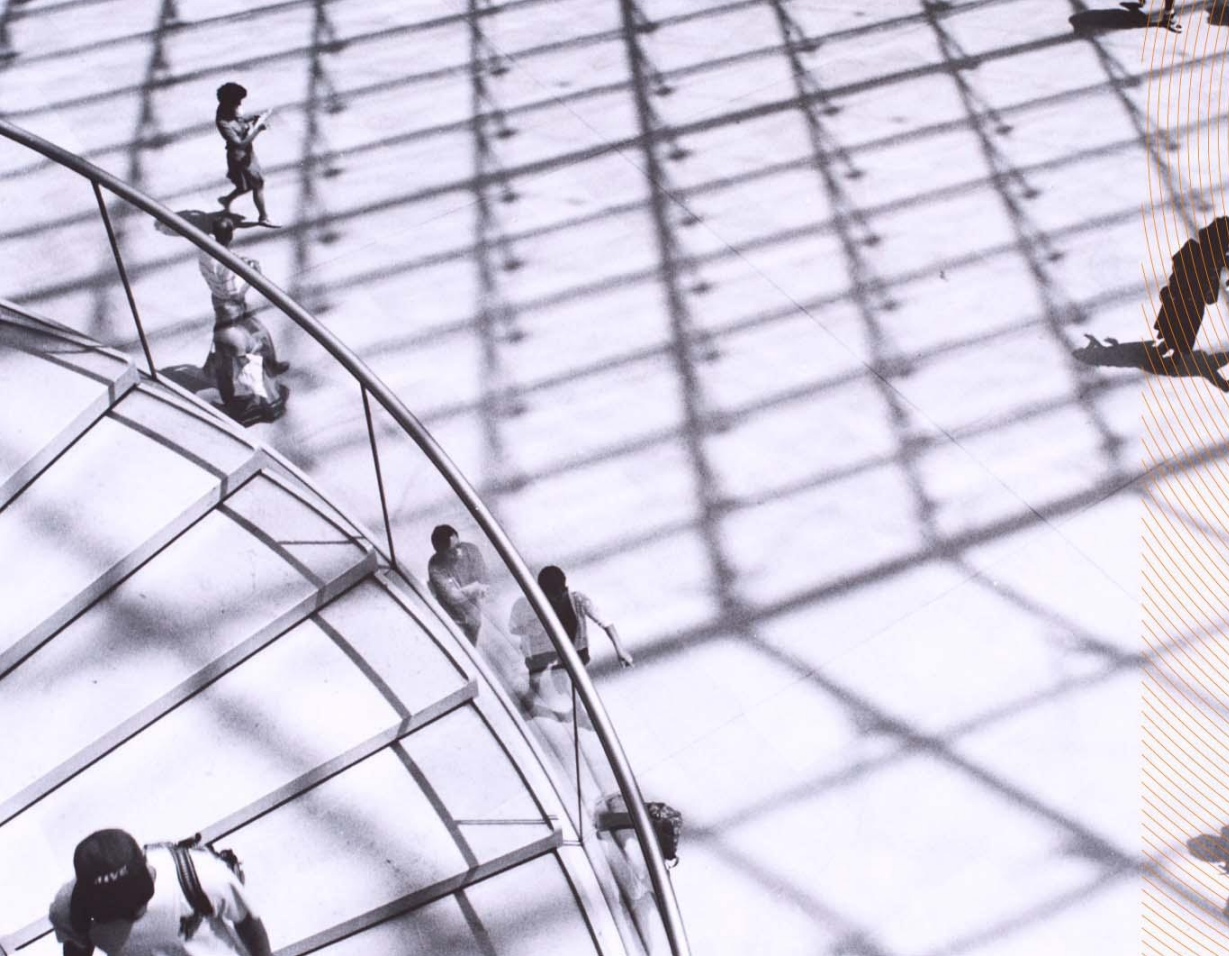
LHCONE Point-to-point Service
Based on dynamic lightpaths and NSI

Scenario B
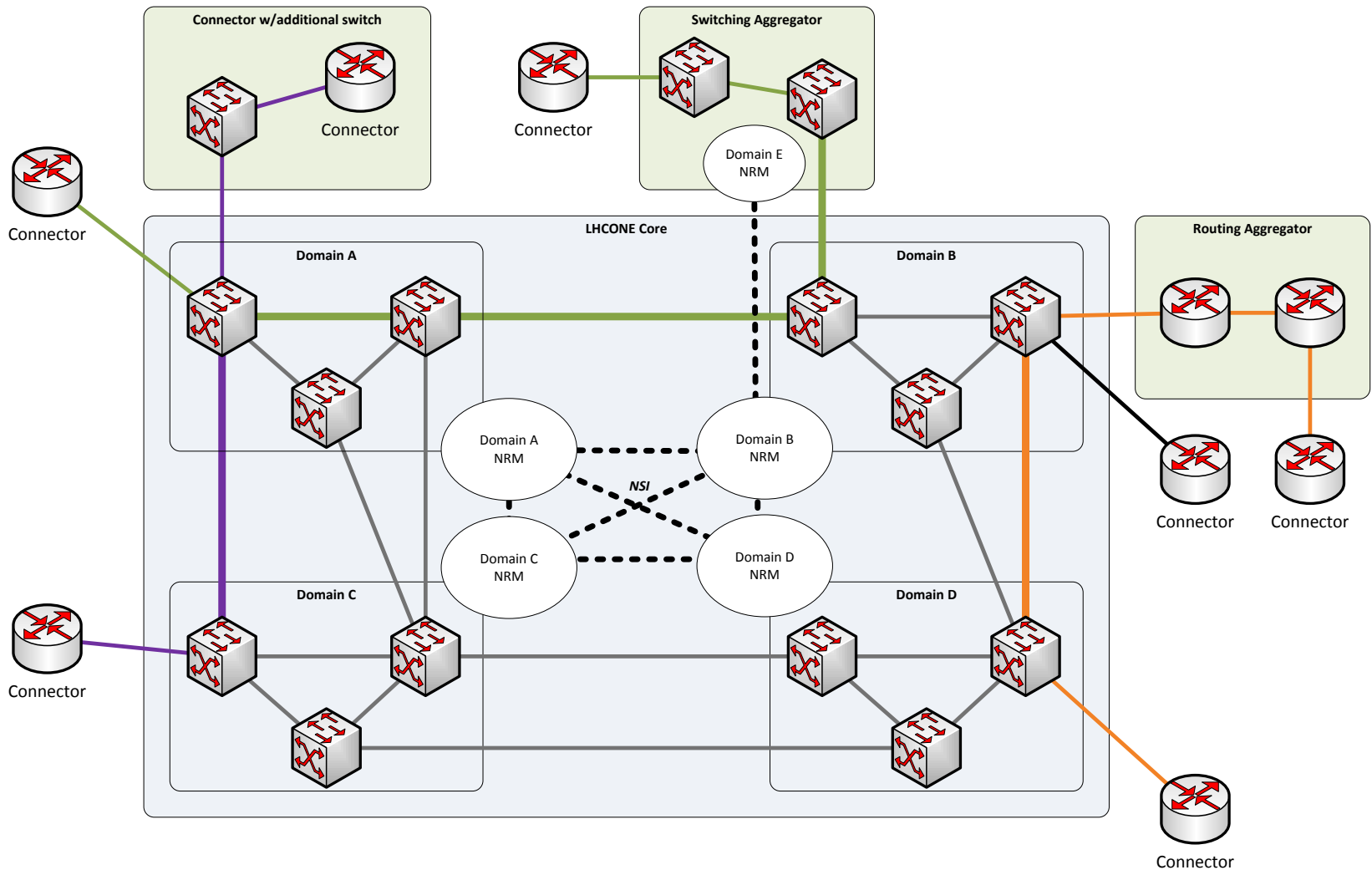
- Multiple domains that are connected to each other by Ethernet connections. On top of this infrastructure, dynamic VLANs enable point-to-point connections on a per-VLAN basis

- Network Service Interface (NSI) through Network Service Agent(s) (NSA)

Thank you!

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