

Use Cases for SF Aware Topology Models

draft-bryskin-teas-use-cases-sf-aware-topo-model-01

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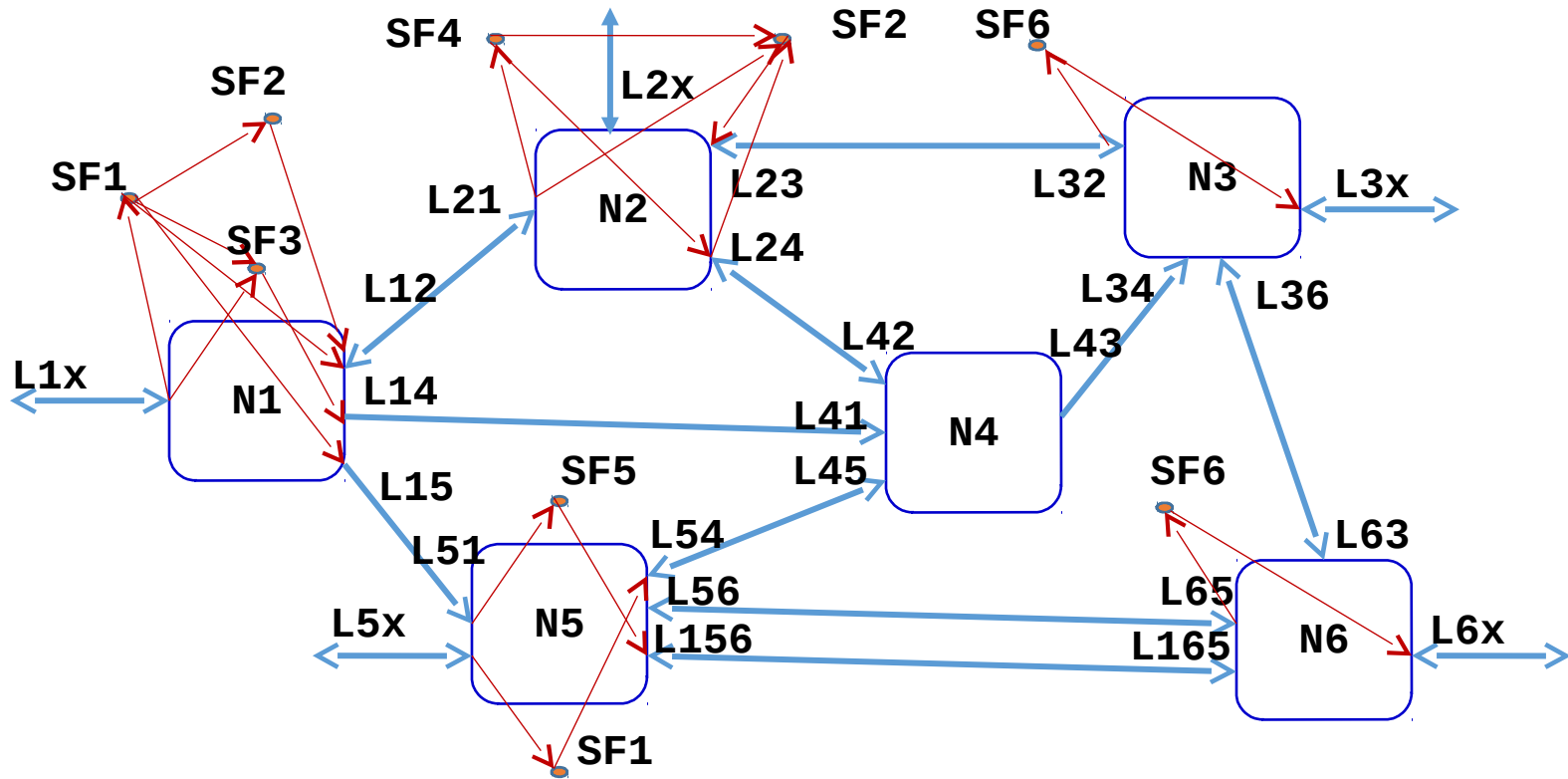
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Changes since IETF99

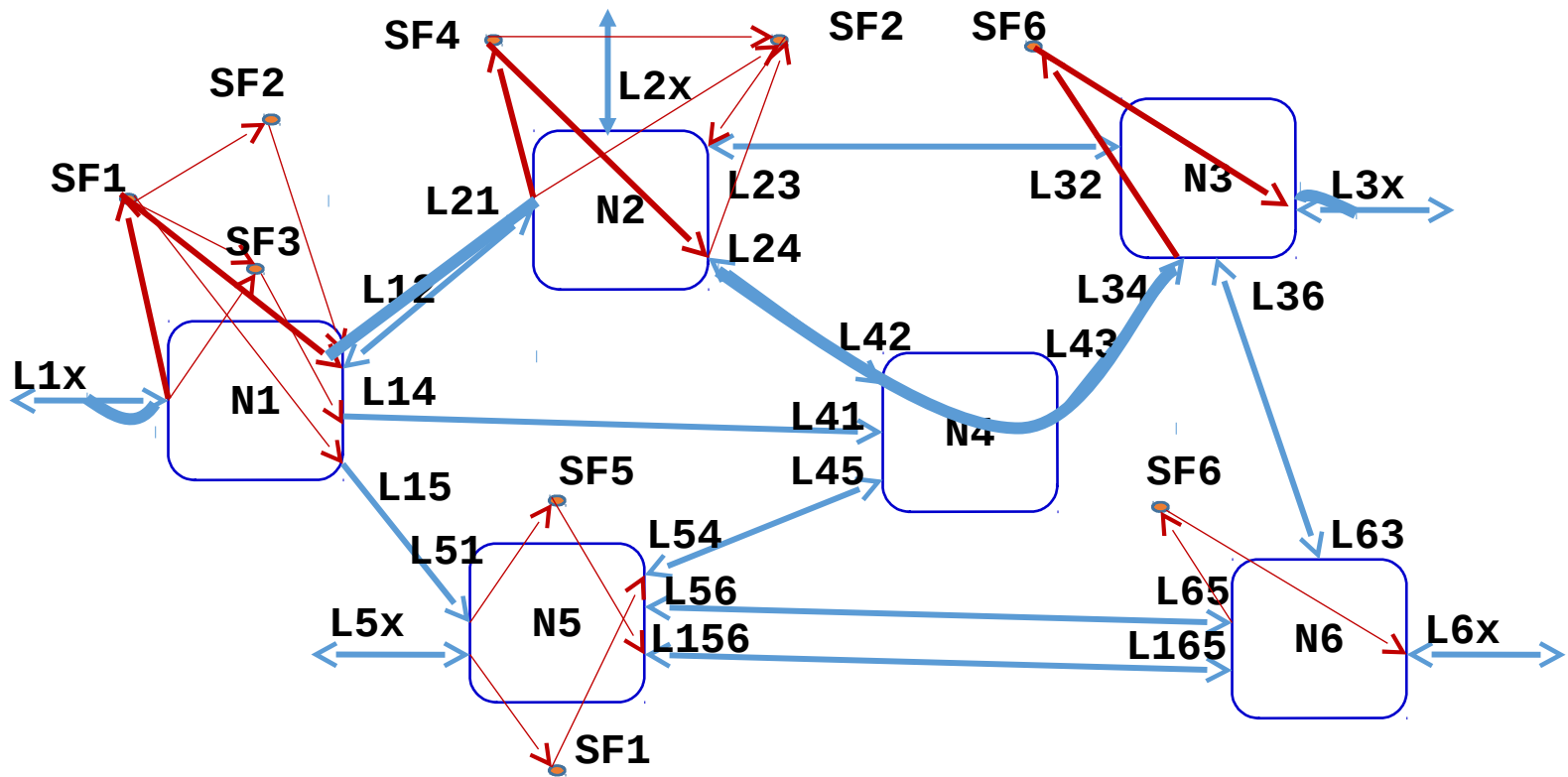
- Luis and Danielle are joined as co-authors
- Terminology section is added
 - Network Function
 - Service Function
 - Service Function Chain
- Figures illustrating use cases are added
- On- and off-line discussions
- Editorial changes

SF Aware Network Topology

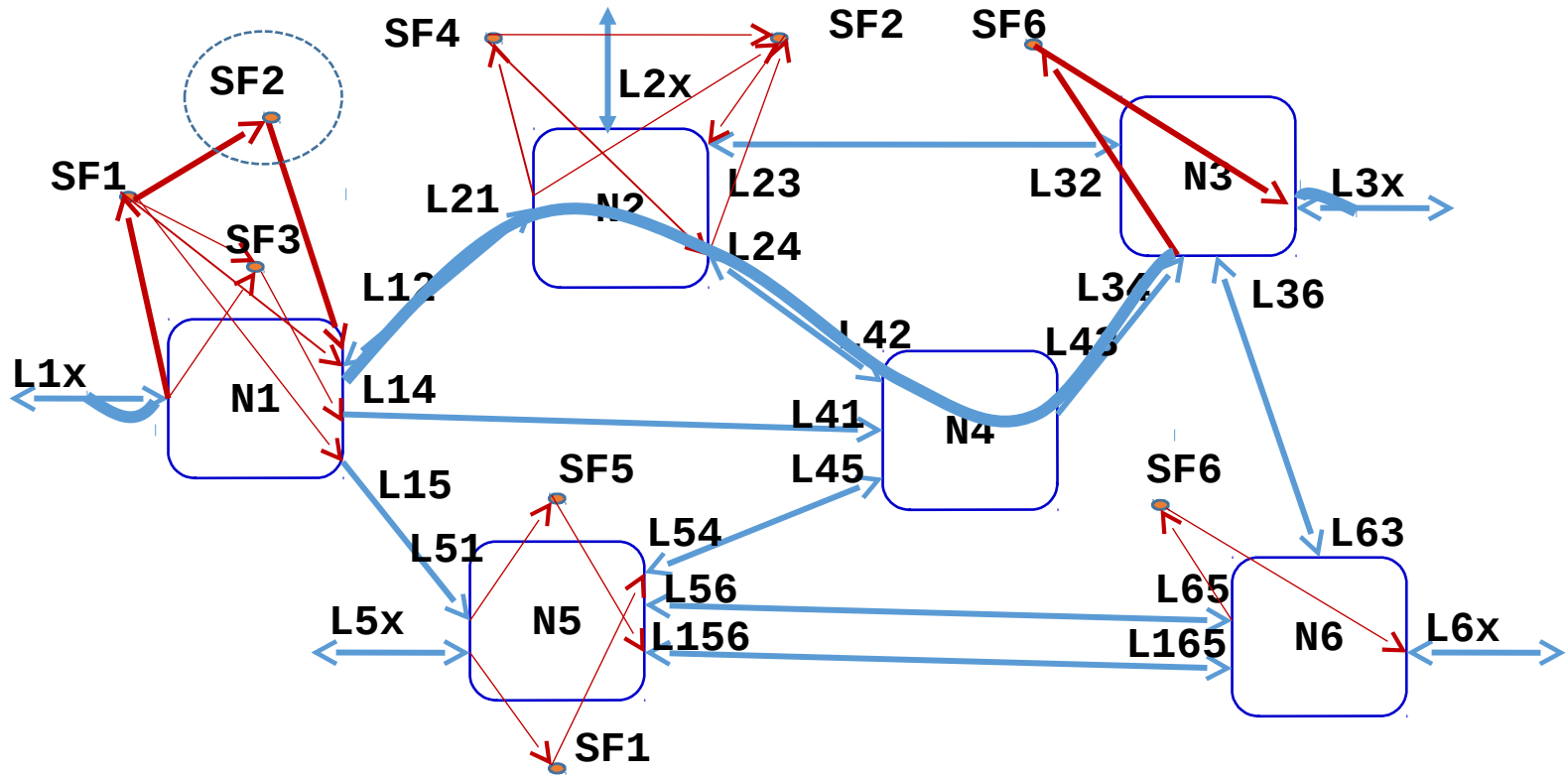


Example: SF-aware TE topology

SFC with TE constraints

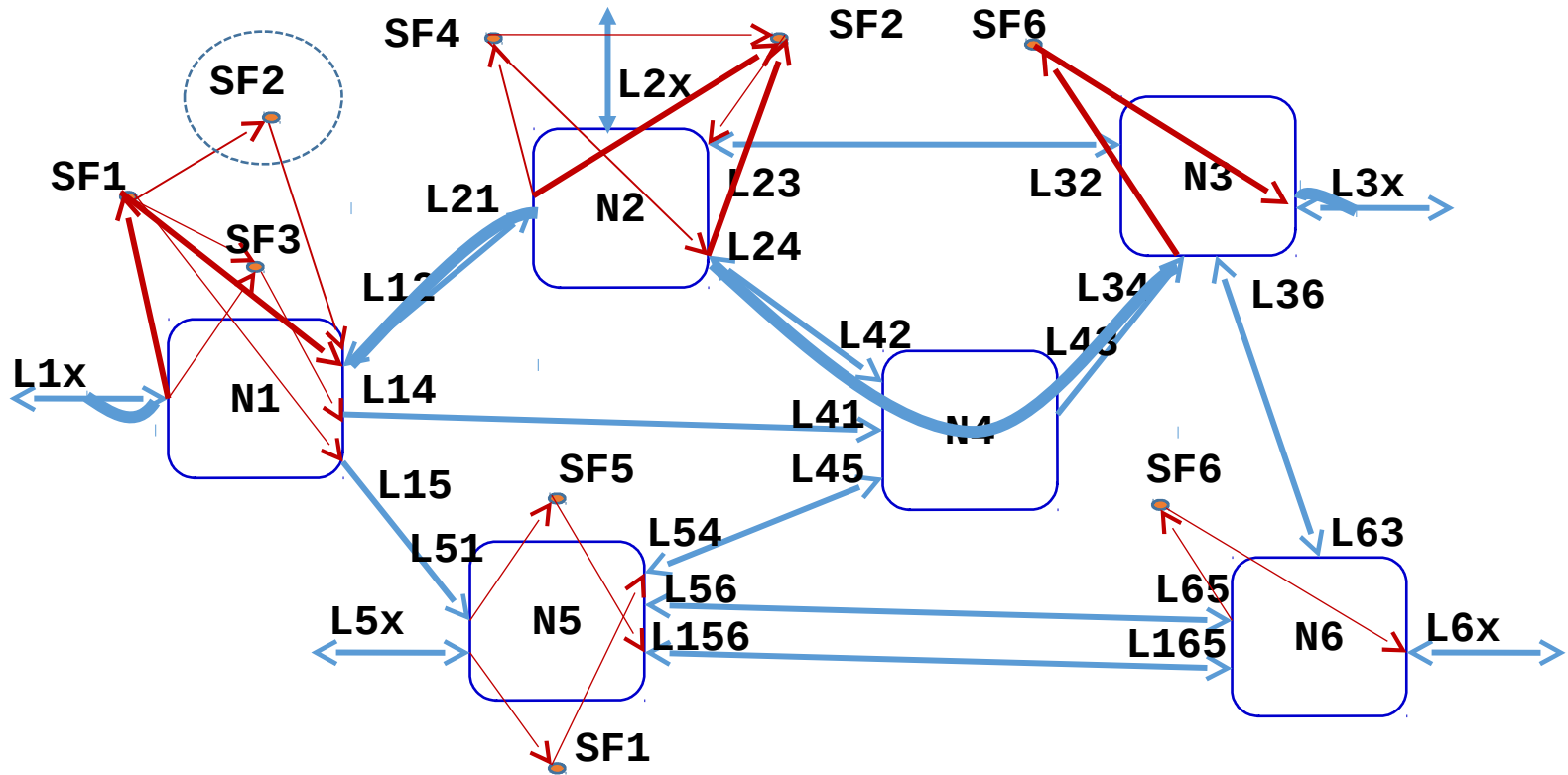


SFC Recovery (1)



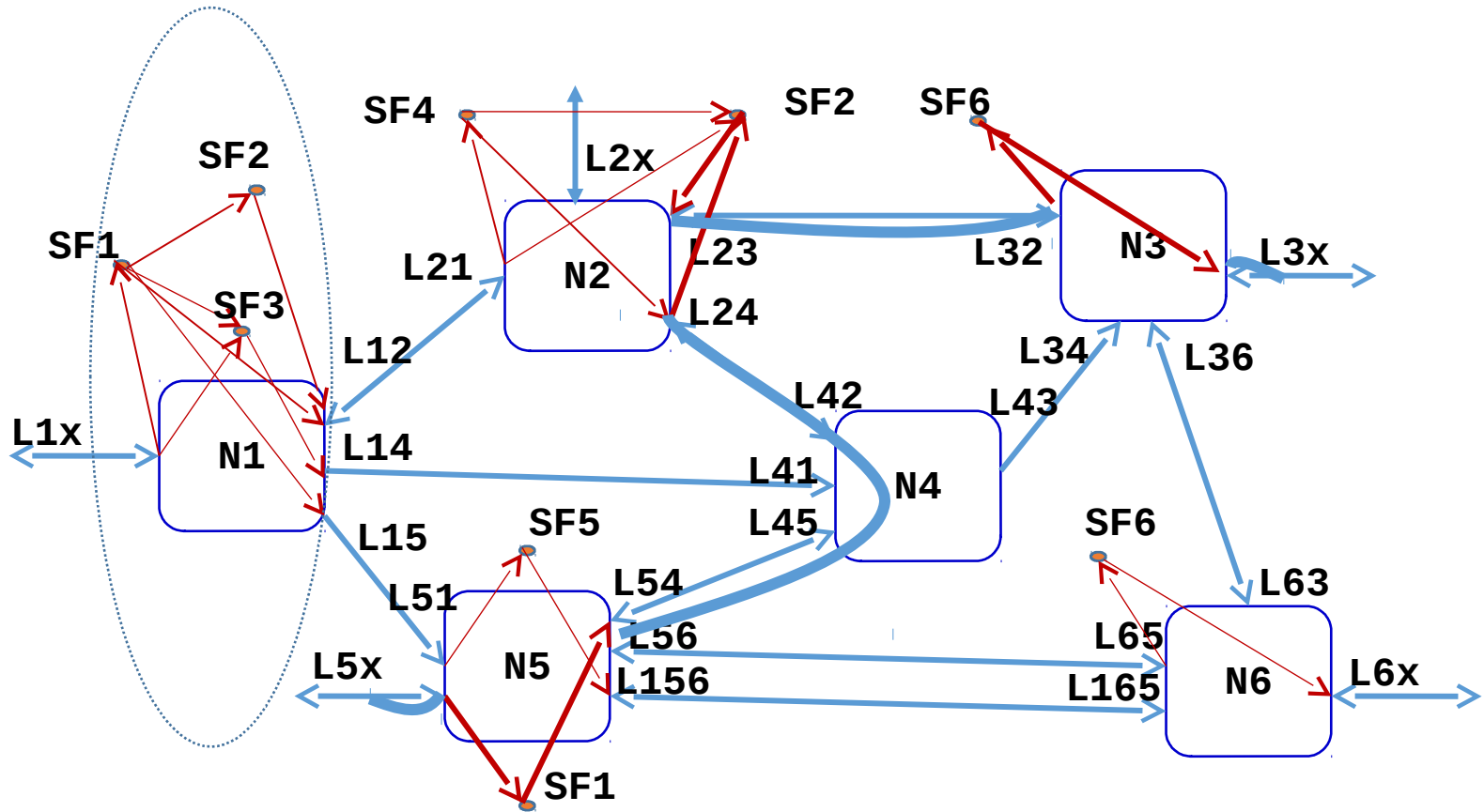
SF2 on node N1 fails

SFC Recovery (2)



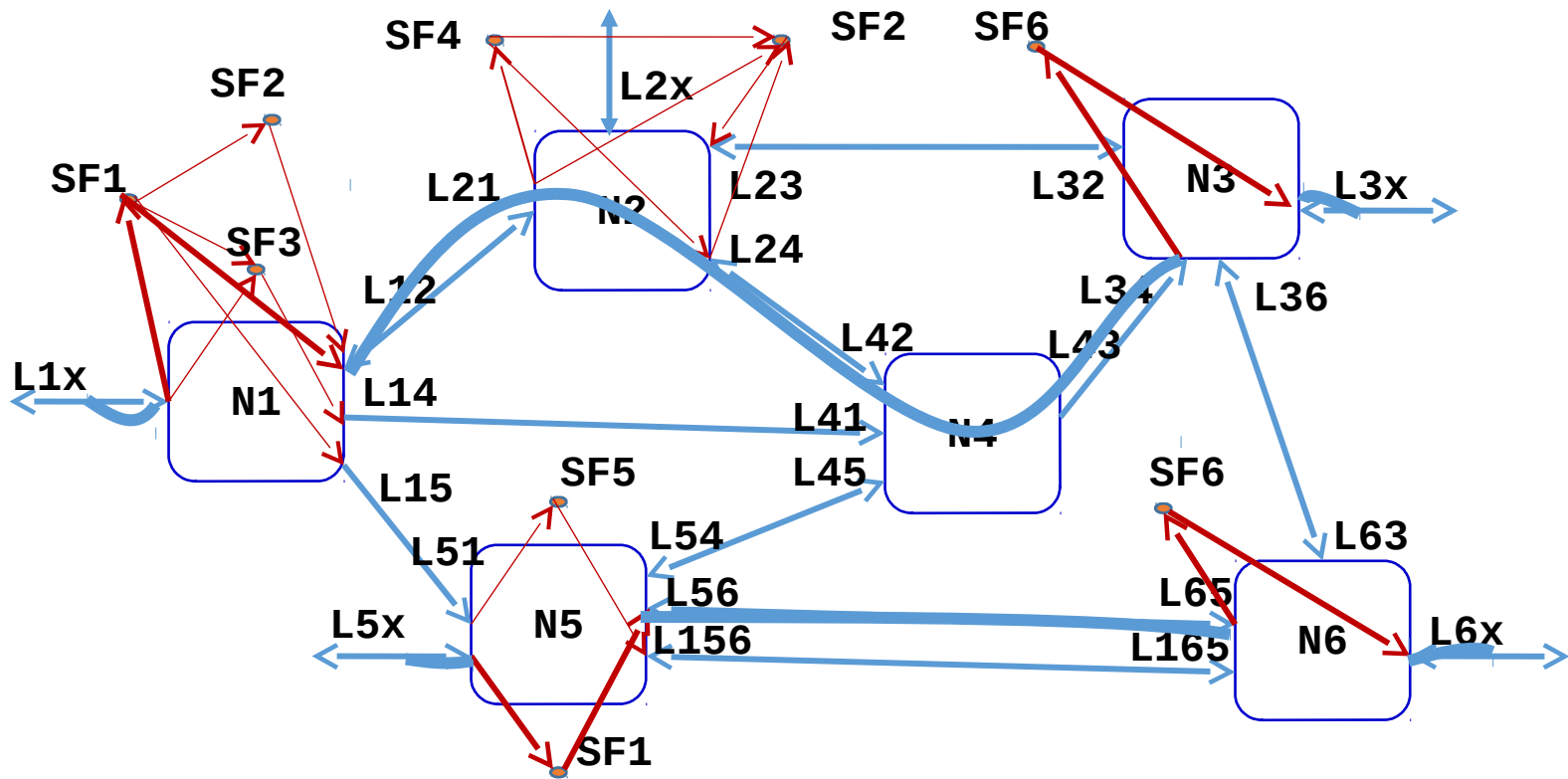
SFC SF1-SF2-SF6 is recovered after SF2 on node N1 failed

SFC Recovery (3)



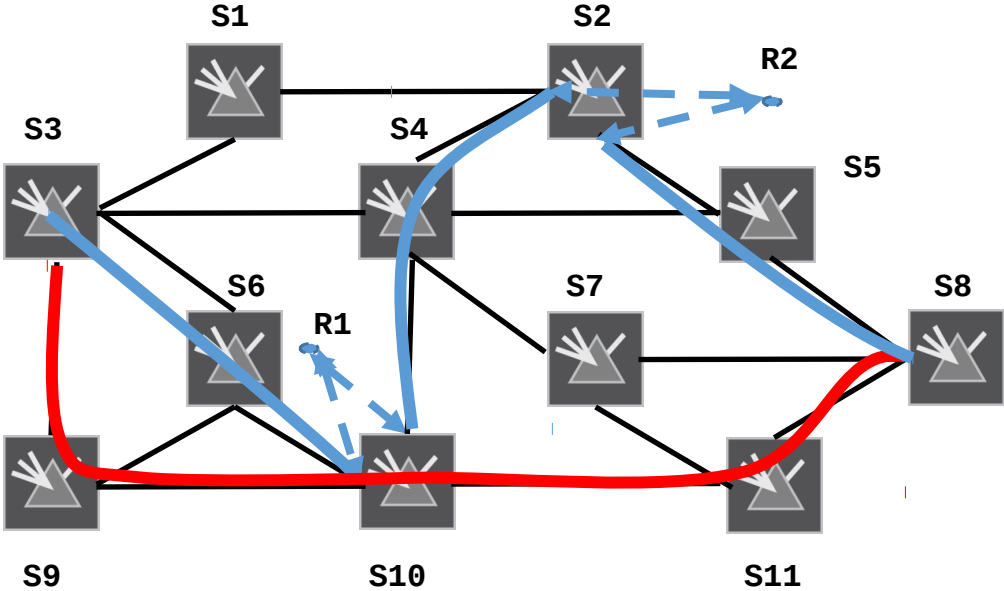
SFC SF1-SF2-SF6 is recovered after node N1 failed

SFC load balancing



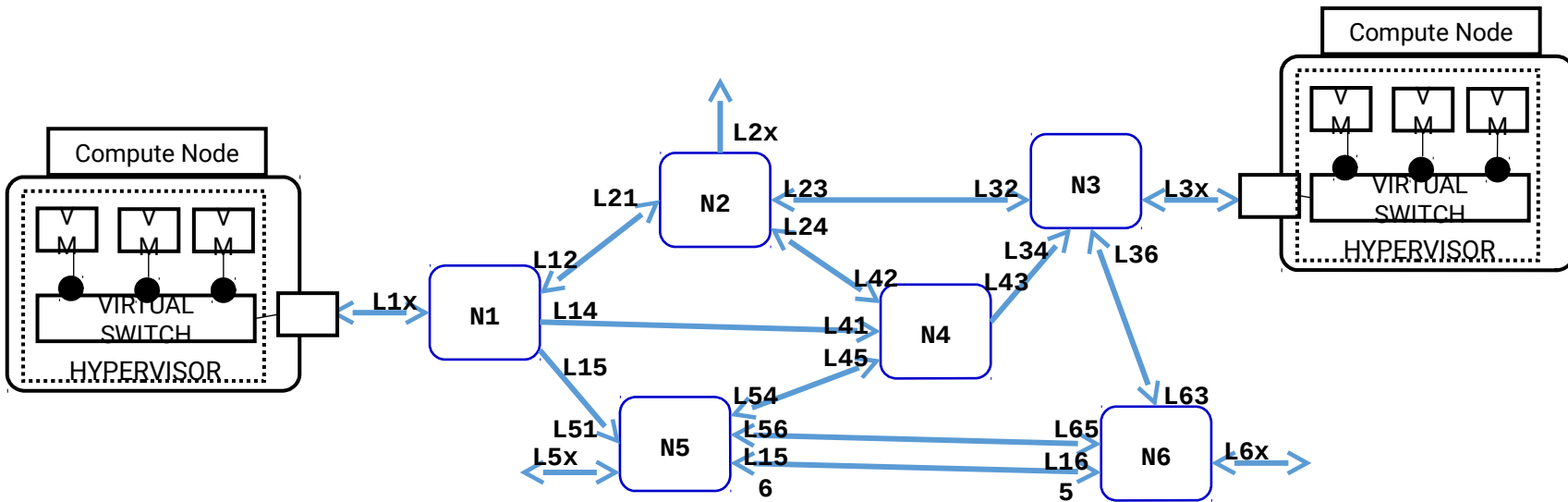
Two parallel SF1-SF6 SFCs with TE constraints

Optical tunnel as TE-constrained SFC of 3R regenerators



Red trail (not regenerated) is not optically reachable,
but blue trail (twice regenerated) is

Compute Resource aware Topology



Compute Node is attached to network WAN node. It contains VMs which can be modeled as a Service Function (SF). VM resources (instances, usage, CPU/Memory) can be modeled and integrated with network topology model to facilitate VM migration, dynamic load balancing, etc.

Next steps

- Solicit more feedback from WG
- Identify more use cases
- Relate to IETF Network Slicing work