

Inter-AS Option C between NVO3 and BGP/MPLS IP VPN network

draft-hao-bess-inter-nvo3-vpn-optionc-00

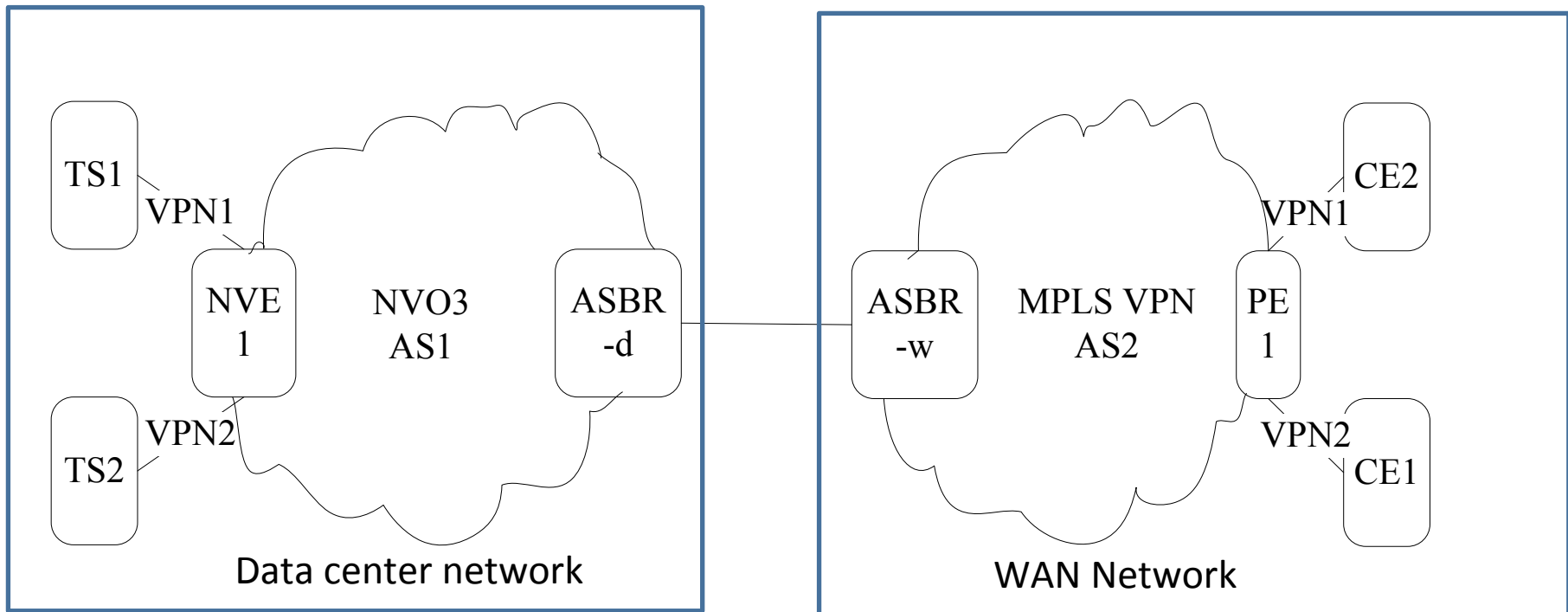
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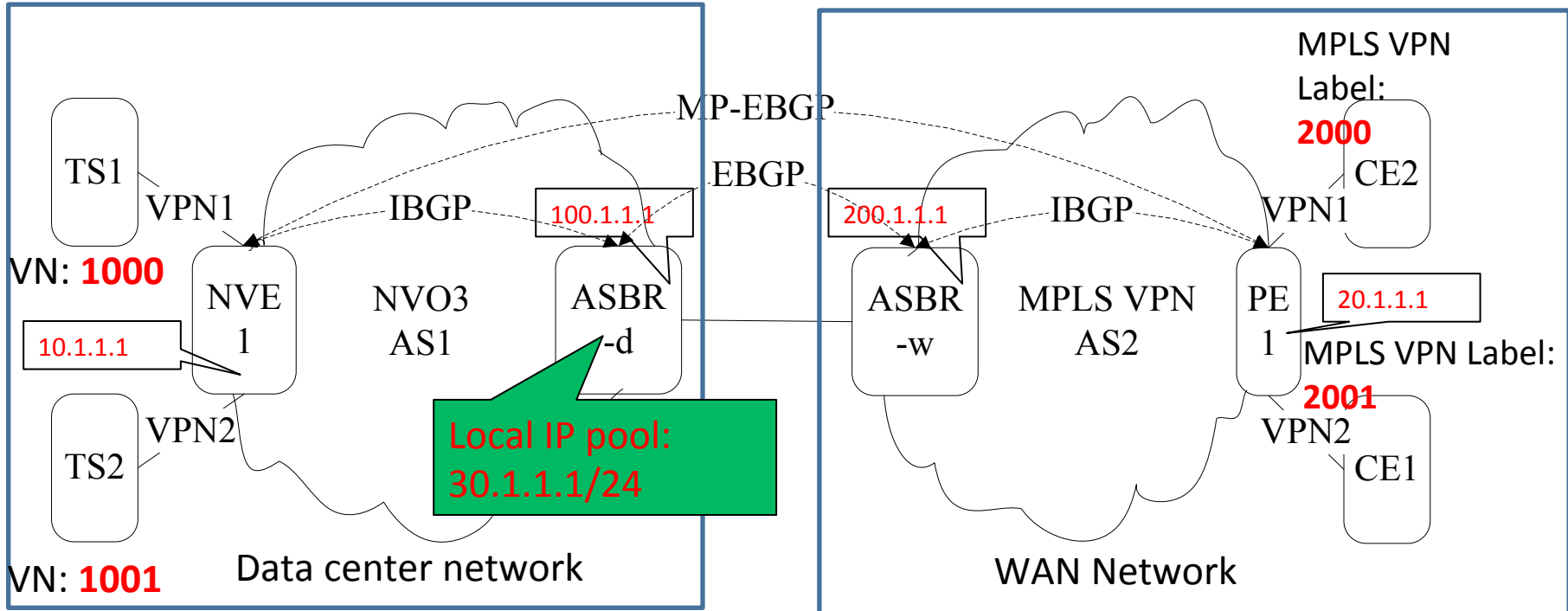
Motivation



Inter-as solutions between NVO3 and MPLS VPN network include:

- Option-A: back-to-back VRFs solution
- Option-B:
 - Control plane: ASBRs need to maintain and distribute all VPN prefixes.
 - Data plane: ASBRs need to perform MPLS VPN Label switching.
- Option-C:
 - ASBRs don't need to maintain and distribute the customers VPN prefixes.

Solution Overview



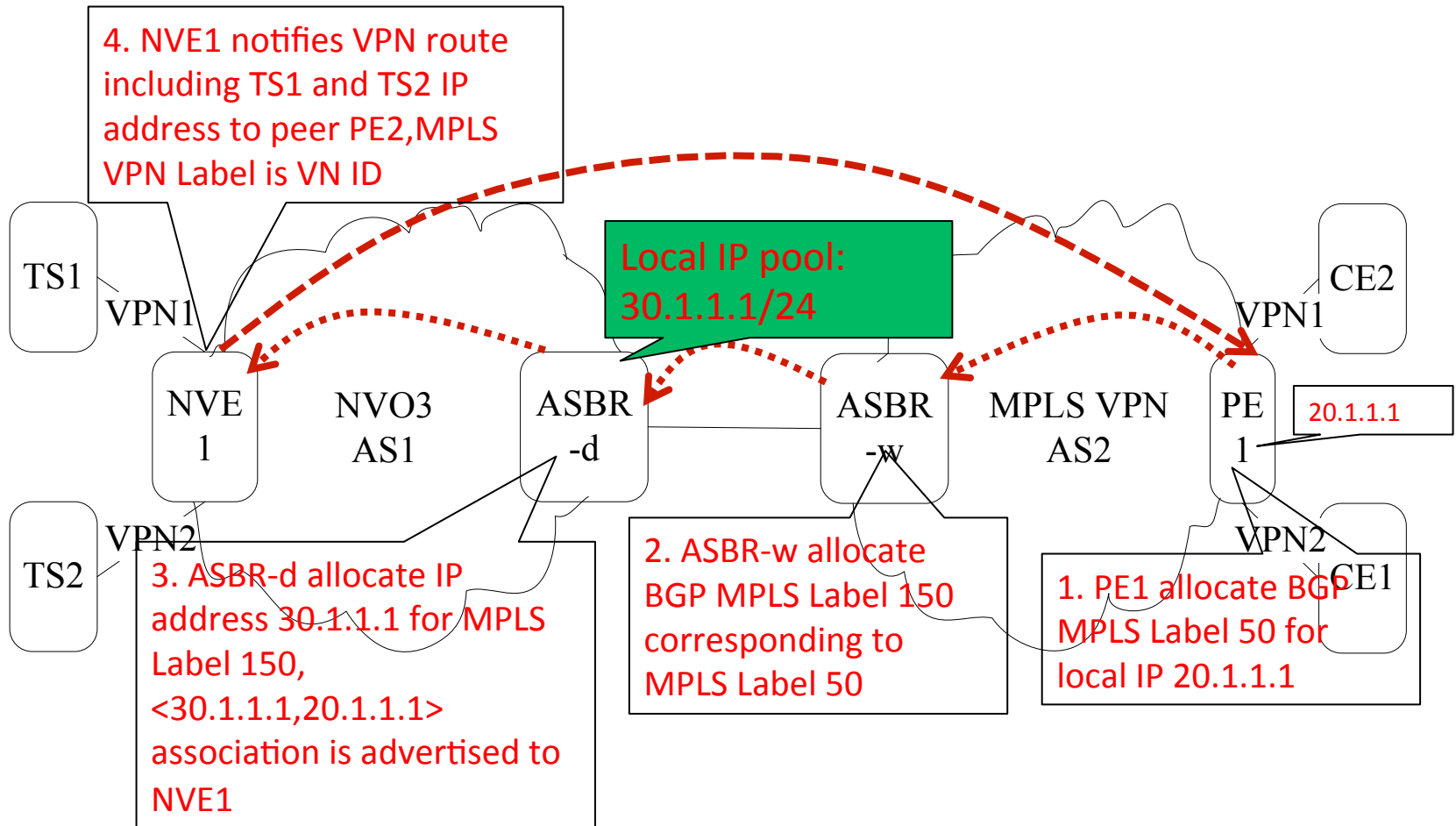
Multi-Hop EBGP Connection between NVE and PE:

- No E2E BGP LSP between NVE and PE.
- ASBR-d stitches NVO3 tunnel(between NVE and ASBR-d) and BGP LSP(between ASBR-d and PE1). ASBR-d allocates new IP address per BGP MPLS Label received from ASBR-w.

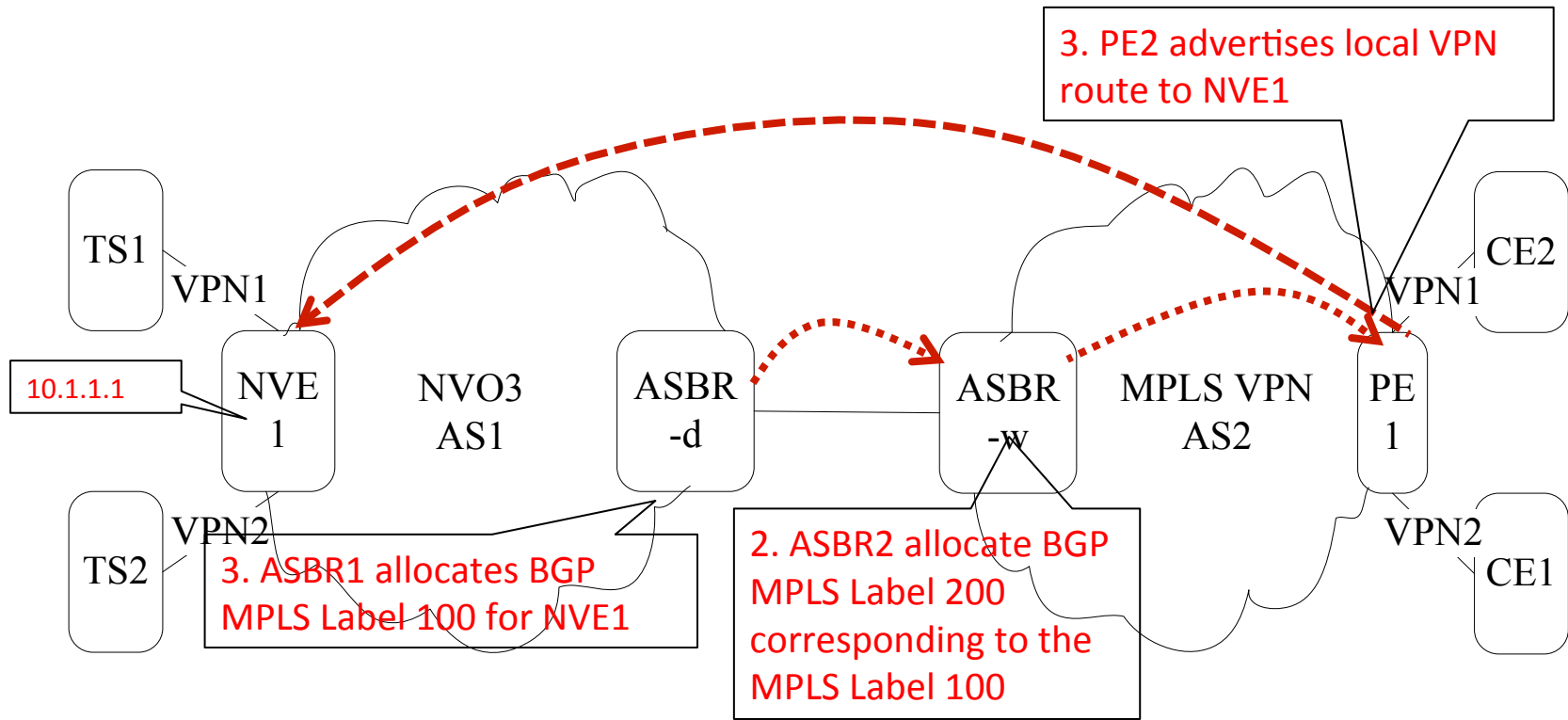
VPN Routes Exchange between NVE and PE:

- VN ID length <= 20 bits to ensure NVE and PE interworking.

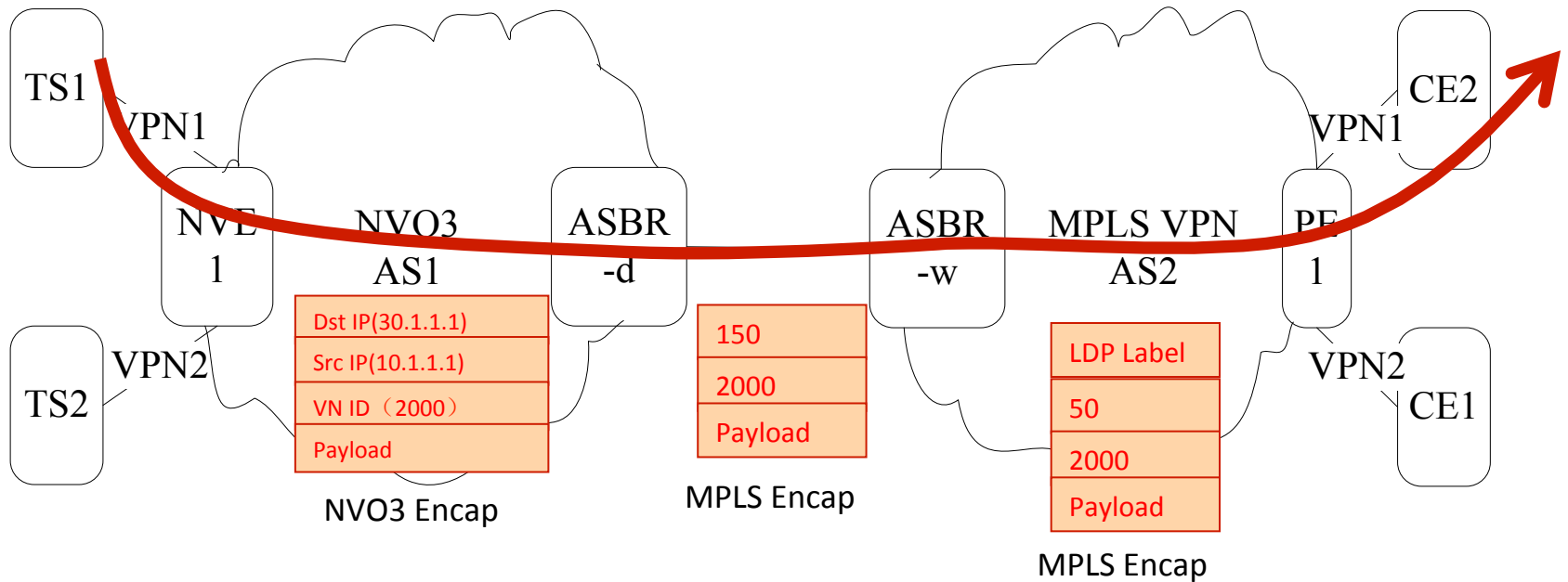
Control plane protocol (1)



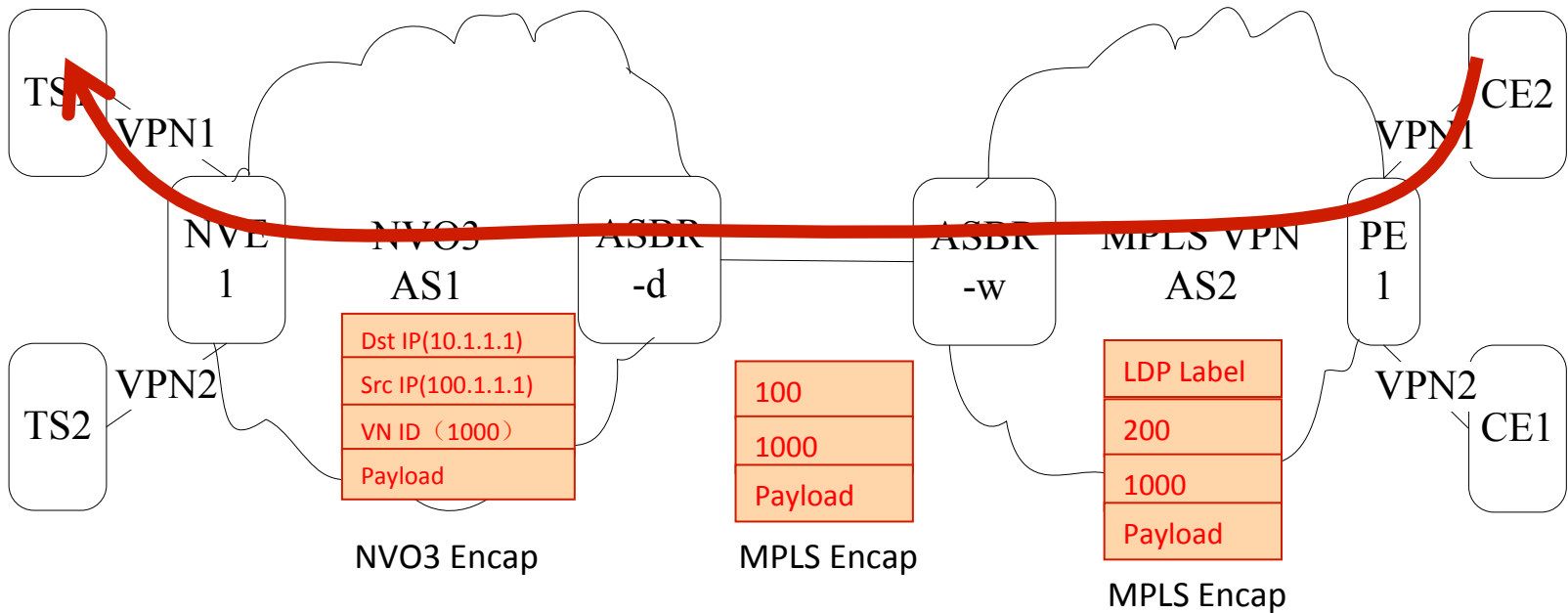
Control plane protocol (2)



Data Plane Process(1)

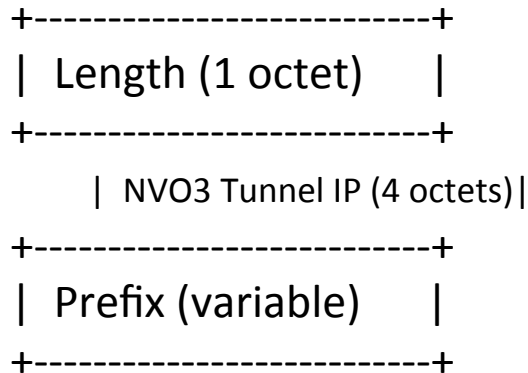


Data Plane Process(2)



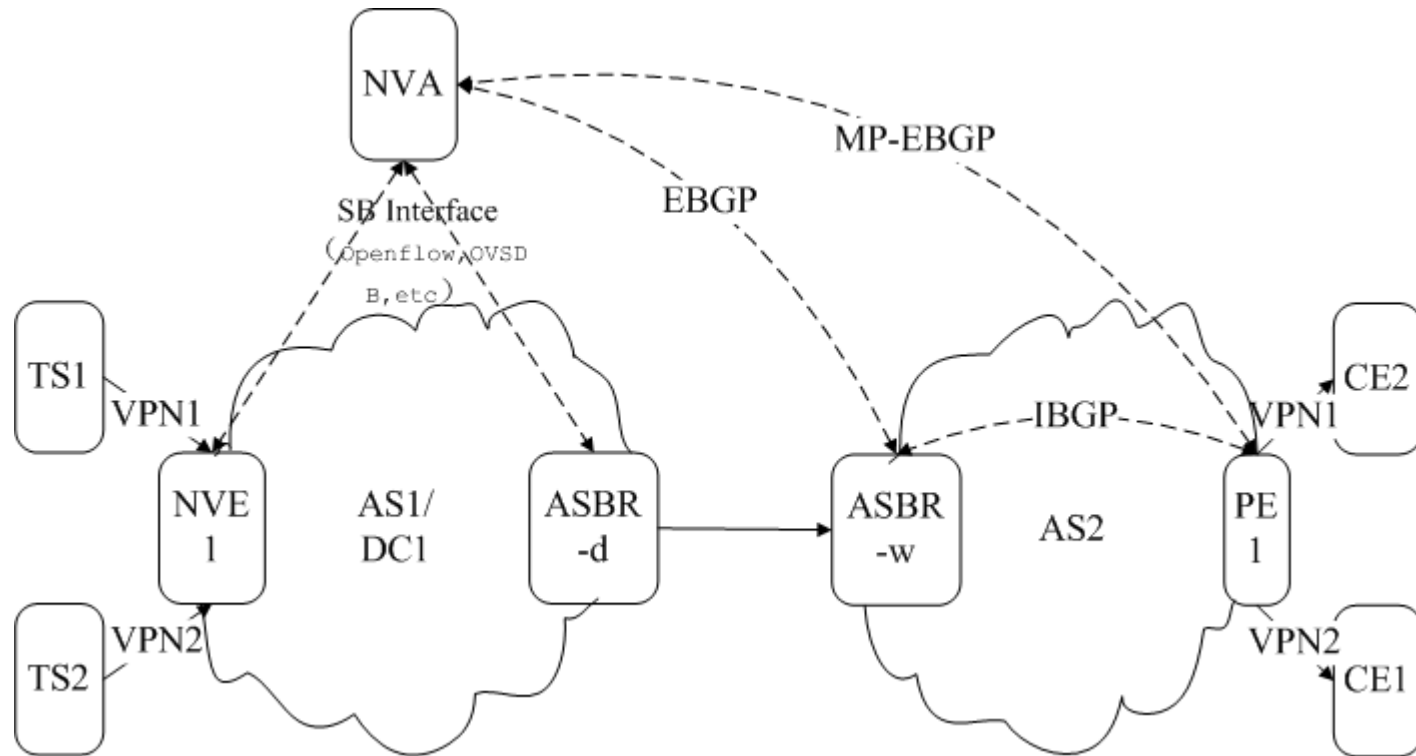
BGP Label Routing Extension

- Propose BGP Label Routing Extension
 - Need a new SAFI to indicate the NLRI contains a NVO3 tunnel destination IP



NLRI Format

Centralized NVO3 architecture



Next Step

- Seek some comments and feedbacks