



Secure EVPN MAC Signaling

`draft-thubert-bess-secure-evpn-mac-signaling`

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IETF 113

Remote

IPv6 IS Different

- DHCP is observable and stateful

=> DHCP addresses have a deterministic beginning and a lifetime

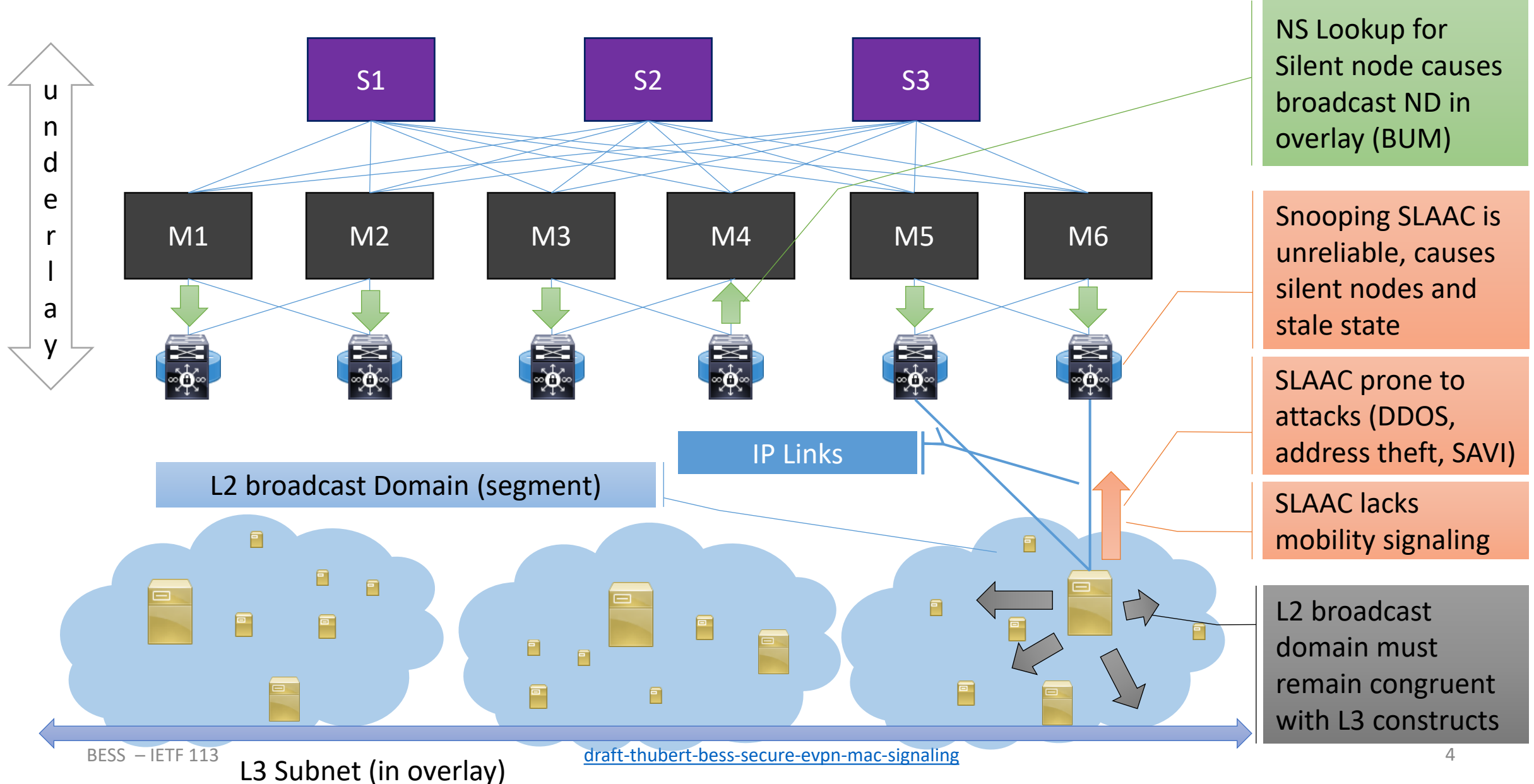
=> Corporate Network admins trust that state

=> A solid foundation for EVPN

The Hassle is the “SL” in SLAAC

- SLAAC stands for IPv6 Stateless Address Autoconfiguration
 - => SLAAC address lifecycle is insecure and not deterministically observable
 - => There is no protocol to sync SLAAC state with the network (just snooping)
 - => Non-deterministic state in EVPN leads to stale state and BUM

Issues with IPv6 ND SLAAC (Non-Deterministic snooping)



Till we made IPv6 ND stateful

- RFC 8505 / RFC 8928 Stateful Address Autoconfiguration
 - => Synchronizes addressing state with network
 - => Carries address control semantics (lifetime negotiation, redistribution...)
 - => Secures address ownership, enables Source Address Validation

Secure EVPN MAC signaling

- Redistributing RFC 8505 / RFC 8928 in EVPN

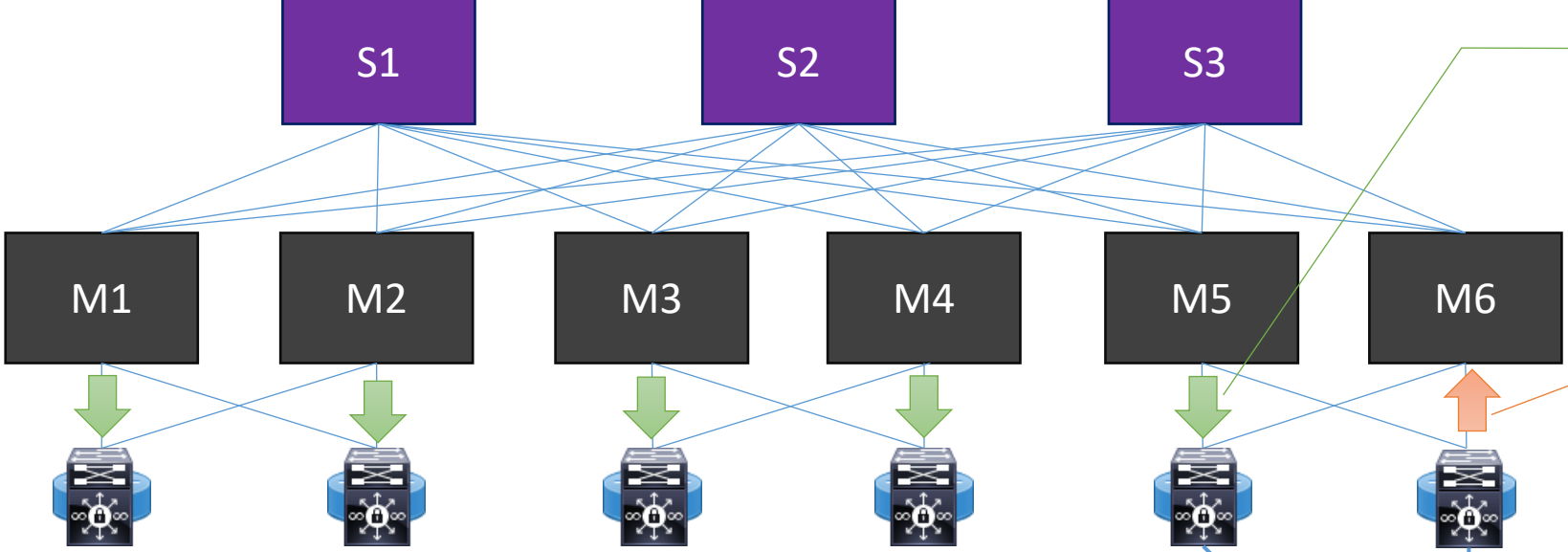
⇒ Sorts duplication vs. anycast; can support multicast, too

⇒ Handles mobility with sequencing

⇒ protects address ownership

Stateful IPv6 ND: Creates a deterministic state for routing

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5) Routing (eVPN) distributes state in all Routers

4) Routers redistribute SFAAC in routing

3) Router checks ownership, policy, mobility sequence, duplicate and acks NA(EARO, ok/~ok)

2) Node Registers the IPv6 address NS(EARO) unicast

1) Node autoconfigures an IPv6 address

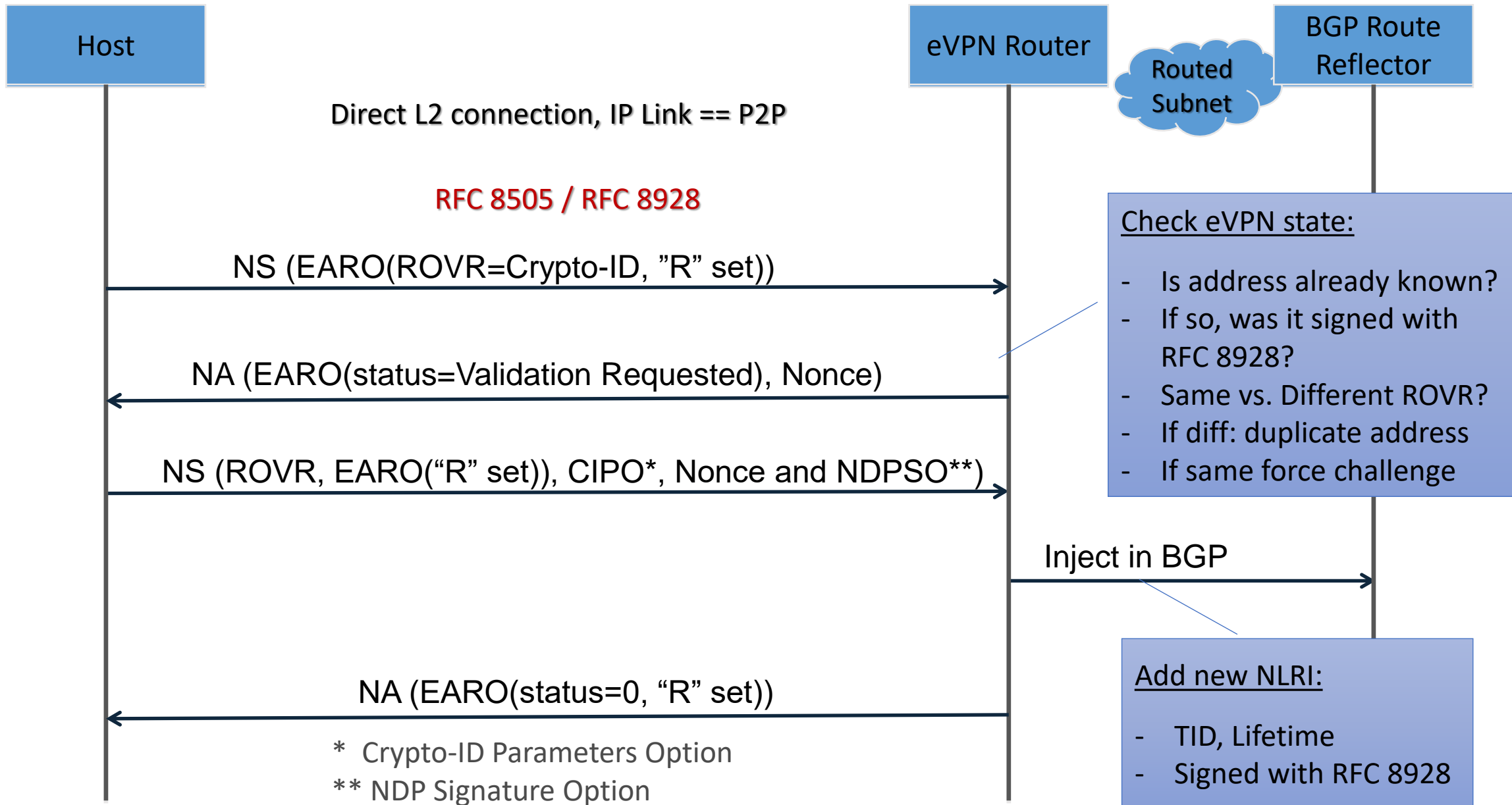
L2 broadcast Domain irrelevant

P2P IP Links

← BESS – IETF 113 [draft-thubert-bess-secure-evpn-mac-signaling](https://datatracker.ietf.org/doc/draft-thubert-bess-secure-evpn-mac-signaling) →

L3 Subnet (in overlay)

RFC 8928 flow



Stable

- ⇒ Inherits from RFC 8929 (ND proxy), RFC 9010 (RPL), and RIFT
- ⇒ Published 03, with Jorge's comments using ARP/ND Extended Community
- ⇒ Calling for adoption