

Integrating LISP and Segment Routing

draft-brockners-lisp-sr

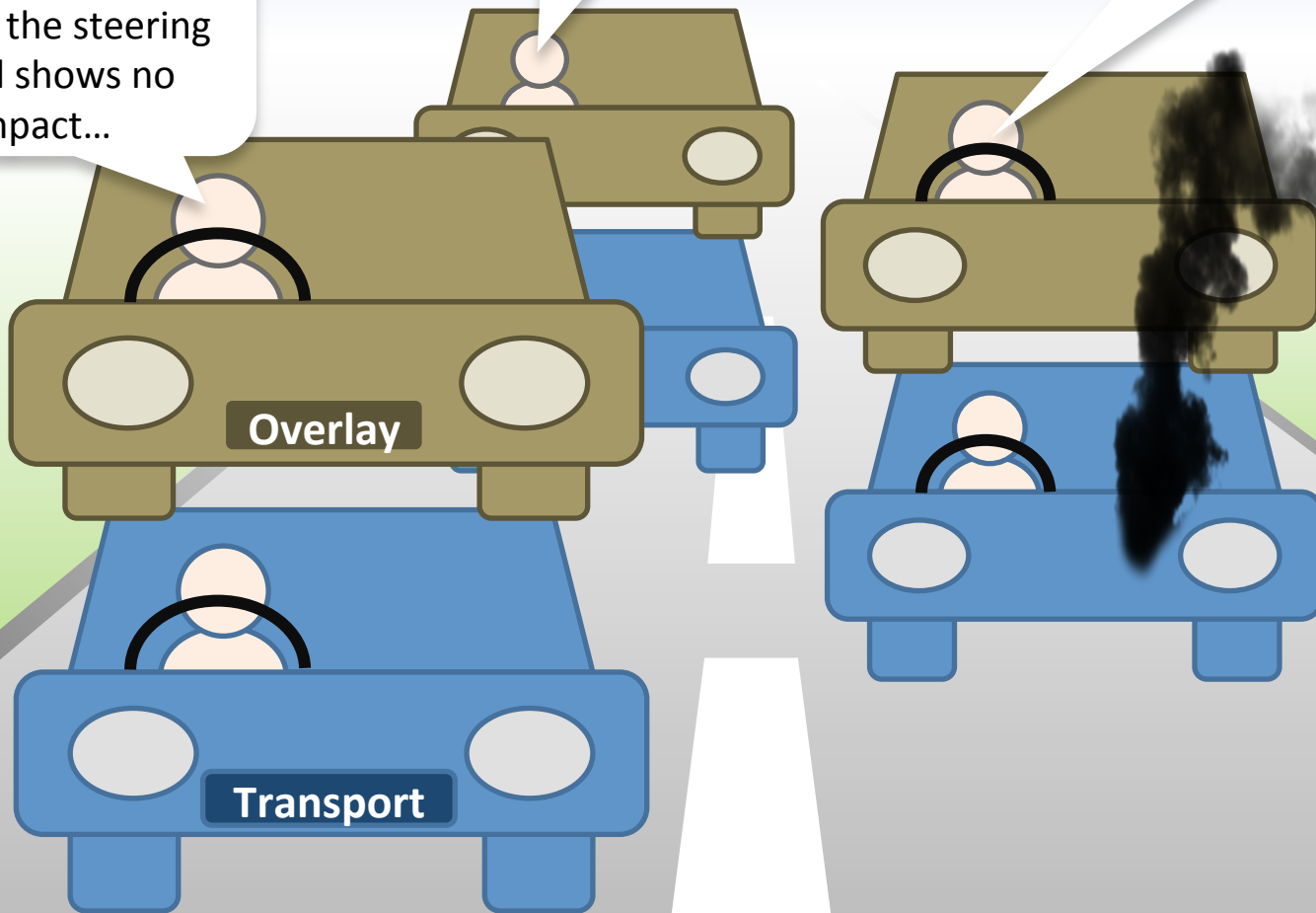
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IETF 88

How do I control where we're going? Turning the steering wheel shows no impact...

Great technology! I no longer need a driver's license

Help! I can see smoke, but my dashboard shows no warnings...



Overlay Networks:Key Requirements

- Independent Endpoint addressing and large number of tenants supported
 - ➔ *E.g. LISP
(VXLAN for L2 tenant scale solution)*
- Per-flow troubleshooting
 - Analyze which path a particular flow took
 - Determine which path a particular flow would take
 - ➔ *E.g. Segment routing w/ IPv6;
Record traversed segments in packet header (e.g. IPv6 extension hdr)*
- Topology-awareness in the overlay network
 - Traffic Engineering for Unicast and Multicast (traffic in the overlay should follow a specific path, e.g. latency optimized, ensure path-symmetry, ...)
 - ➔ *E.g. Segment routing w/ IPv6; Flow forwarding state in packet header to perform TE*
- Efficient and generic Network Transport/Fabric
 - No per-flow state kept in the Data-Center Fabric
 - Equal cost multipath load balancing
 - IPv6
 - ➔ *E.g. Segment routing w/ IPv6; Flow forwarding state in packet header*
 - ➔ *E.g. IPv6 transport network*

➔ Option: Combine SR and LISP: draft-brockners-lisp-sr-00 (could similarly be done for VXLAN)

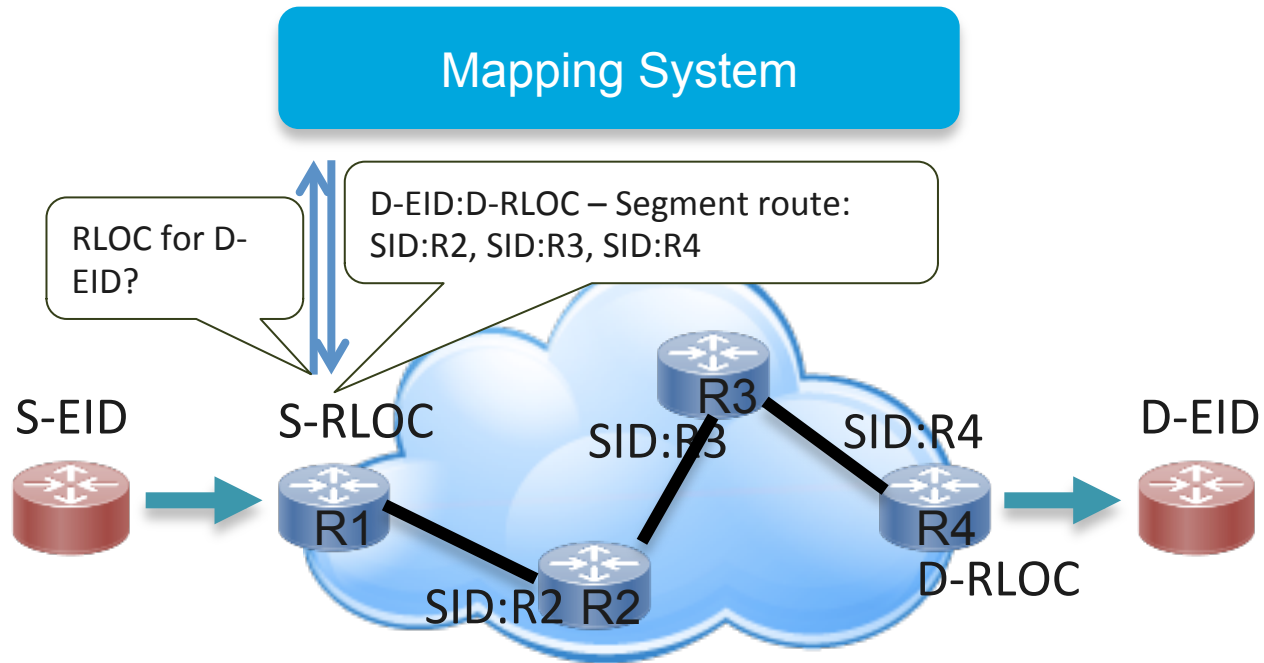
Approach

- Combine Overlay and Transport network more closely by combining SR and LISP:
 - EID to RLOC mapping information extended with SR routing information.
- Extend LISP Canonical Address Format (LCAF) for traffic engineering (LCAF type 10).

Proposal

- Define new AFI for
 - Segment identification(SID) and
 - Path Tracing
- Enhance mapping system to:
 - Include Ordered list of Segment IDs to be visited in the underlay using the new AFI for SID in EID to RLOC lookup
 - Flags to enable underlay tracing in EID to RLOC lookup

Example



Next Steps

Authors appreciate the WG's review and feedback

Integrate into “ietf-lisp-lcaf”?