LISP for the Satellite Network

draft-farinacci-lisp-satellite-network-02

IETF LISP WG Yokohama
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High-Level Goals

- The LISP overlay can run over any IP packet delivery underlay
- If a satellite network can deliver IP packets, we can have a LISP overlay run over it
- Very much like how LISP runs over the (capital-I) Internet, the 3GPP network, the ICAO network
How it Works

• There is no **EID** state in the satellite network underlay

• The satellite network is unaware of the LISP overlay running over it

• The overlay requires the underlay to deliver packets to **RLOC** addresses the underlay can route to

• The underlay network can transport **IPv4** or **IPv6** packets and can be dual-stack

• When path optimization in the underlay is available, an **RLOC**-record can be a **source-route** of satellite node hops

**EID addresses in green**
satellite network **doesn’t** know about

**RLOC addresses in red**
satellite network **does** know about
How it Works

in space (underlay)

sat

(ISL

sat

(ISL

sat

(ISL

up/down RF-link

up/down RF-link

on earth (overlay)

GS-xTR

mapping

system

GS-xTR

EIDs ... EIDs

LISP runs here

EIDs ... EIDs

Overlay on Earth, Underlay in Space
Appendix B. Document Change Log

B.1. Changes to draft-farinacci-lisp-satellite-network-02

* Submitted **February 2023**.

* Add references to proposed standard documents.

* Refer to lispsers.net Decentralized–NAT for testing direct xTR to xTR.

* Added test case where the GS-xTR is both on the underlay and the LISP overlay.

B.2. Changes to draft-farinacci-lisp-satellite-network-01

* Submitted **September 2022**.

* Added text about how the mapping system is used in a rural location when the only Internet link available is the satellite link.

* Added the Test and Deployment Experience section to document what has been tested so far.

B.3. Changes to draft-farinacci-lisp-satellite-network-00

* Initial posting **April 2022**.
Decentralized NAT

(1) Info-Request to 4341

(2) Info-Reply pub-RLOC, tport

(3) Map-Register pub-RLOC, tport

(4) Info-Request from RLOC-a/tport-a to RLOC-b/4341 opens NAT

(5) Packet $s=$RLOC-a, port=4341, $d=$RLOC-b, port=tport-b

(4) Info-Request from RLOC-b/tport-b to RLOC-a/4341 opens NAT

(5) Packet $s=$RLOC-b, port=4341, $d=$RLOC-a, port=tport-a
Testing Status

• We have formed a small group of testers

• Conducting telemetry tests on the Satellite network using LISP RLOC-probing (and ltr)

• Testing direct paths via Decent-NAT

• Looking for more testers
  
  • If you want to join, email support@lispers.net
  
  • Get your Starlink kit before joining at www.starlink.com
Questions/Comments?

Should draft become a Working Group document?