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

Overlay on Earth, Underlay in Space

LISP runs here
Features

• **EIDs** can roam among GS-xTRs and keep connections up per draft-ietf-lisp-eid-mobility and could get zero-packet loss roaming per draft-ietf-lisp-predidctive-rlocs.

• GS-xTRs can load-split traffic across different RLOCs on the satellite network (or across RLOCs in space and terrestrial RLOC links).

• All packets encapsulated over satellite network are encrypted per draft-ietf-lisp-crypto [RFC 8061].

• GS-xTRs can be used as alternate paths per draft-ietf-lisp-te when ISLs are not available:
  - (xTR-up -> sat -> ISL -> sat -> down-xTR)
  - (xTR-up -> sat -> down-RTR-up -> sat -> down-xTR)

• GS-xTRs can do telemetry measurements on the satellite network underlay per draft-farinacci-lisp-telemetry.

• GS-xTRs can offer an EID multicast service by doing head-end-replication or using any underlay multicast service per draft-ietf-lisp-signal-free-multicast [RFC 8378].

• EIDs can talk to non-EIDs via draft-ietf-lisp-interworking [RFC 6832] when either non-EIDs are reachable via the satellite network of the terrestrial network.
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Abstract

This specification describes how the LISP architecture and protocols can be used over satellite network systems. The LISP overlay runs on earth using the satellite network system in space as the underlay.

Should we make draft a Working Group document?