Layer 3 extensions to DLEP

draft-taylor-manet-l3-dlep

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What?

1. Individual draft describing two minimal OPTIONAL mechanisms to allow radios that forward at the IP layer to act as DLEP peers.
2. A test case for the extension mechanisms of core DLEP.

Why?

Because radios that forward at layer 3 exist, and want to implement DLEP.

But manufacturers are unwilling to add the overhead of tunnelling to simulate layer 2 connectivity.

“If the mountain won't come to Mohammed...”
Bacon, Francis, *Essays*, Chapter 12, 1625

How?

Two OPTIONAL DLEP data-item TLVs:

- Non-MAC TLV
  - Used in Peer_Initialization signals.
  - Indicates that DLEP destinations are not MAC addresses.
  - Specifies the octet length of destination identifiers.
- Routes TLV
  - Allows either peer to advertise subnets accessible via the peer.
  - Influenced by BGP-4 UPDATE message.

Destination Ids

This extension alters the meaning of the octets in the MAC address TLV.

- Still a destination identifier, just not a MAC address.
- Negotiated at session initialization using the Non_MAC TLV.

Routes

If a peer cannot forward at layer-2, how does traffic flow?

- Allow peers to advertise accessible subnets to each other, just like BGP-4 UPDATE message.
- Already sort of exists in core DLEP using the subnet field in the Address TLVs.

But...

This breaks the DLEP model that modems operate in bridge mode.

- Yes, it does, and that means more work for your routing protocol.

This introduces a lot of BGP-isms.

- We are considering simplifying Routes TLV in the next draft.

Also…

Cellular network access points.

- Don't really have layer 2 destinations.
- Do have link metrics.
- Do have reachable subnets.

/* TODO... */

- Keep inline with next DLEP draft, particularly extension negotiation.
- Think harder about Routes TLV, currently feels overengineered in retrospect.
- Analysis of cellular network access point use-cases.

Thank you!

Please read the draft (and pick holes in it!)