

IoT link layer issues

Questions

- Energy efficiency
- Efficient forwarding over layer 2
- Fragmentation
- Retransmission

Energy efficiency

- Battery-powered devices want to sleep as much as possible.
- Don't send too many keep-alives.
 - BFD does not work.
- Don't flood too much.
 - Self-learning effectively reduce flooding (compared to broadcast).

Efficient Layer-2 Forwarding

- Multicast and broadcast are limited to low speed to allow everyone to receive.
- The sender could transmit at a slightly higher rate (than the minimum rate), and rely on ARQ to repair a loss (over unicast). Repair requests also tell the sender whether it should reduce the transmission rate.
- Self-learning allows less mcast/bcast usage, because subsequent Interests are sent over unicast.

Fragmentation

- Over ultra-low MTU links, we should reduce header overhead as much as possible.
- Header compression may be needed.