Mobility Networks

- Vehicle to Vehicle / Vehicle to Infrastructure
- Goal: share information while on shared road
- Facilitate safety and efficiency use-cases
- Very slow progress over the passed decade
- Layer2 battles between Wifi and Cellular
- Logical interoperability-privacy challenges

Sharing jittery GPS vectors not very valuable - Sharing deeper annotations interoperability nightmare
LISP-H3 Approach

- Not share sensor (visual-lidar) data peer-to-peer
- Instead communicate through in-network state
- State of road (not cars) represented by H3 tiles
- EIDs (cars) communicate with HIDs (tiles)
- pXTRs use mapping to route between them
- EIDs publish-subscribe to HID ucast-mcast

LISP-Based Mobility-Network Indirection: Cars Ucast Tiles, Tiles Mcast Cars & Infrastructure
EID-HID LISP Flow

Register EID RLOC
Lookup HID RLOC

Register HID1.1 RLOC
Lookup EID RLOC

Register EID RLOC
Lookup HID RLOC

EID1::HID1.1[HID1.1.1.1.1::State S1]
RTR1::XTR3[EID1::HID1.1.1.1.1::State S1]
EID1::HID1.1[0.0.0.0::State S1]
RTR1::XTR3[EID1::HID1.1.1.1.1::State S1]
EID1::RTR1[HID1.1.1.1.1::State S1]
EID-HID LISP Flow

- **RTR1**
  - EID1
  - EID2

- **RTR2**
  - EID3
  - EID4

- **XTR3**
  - HID1.1

**Mapping**
- HID1.1[HID-State… HID-State]
- Register HID SFM

Connections:
- EID1 → RTR1
- EID2 → RTR1
- RTR1 → XTR3
- XTR3 → RTR2
- RTR2 → EID3
- RTR2 → EID4

Note: The HID1.1[HID-State… HID-State] labels indicate the state of HID1.1 at various points in the flow.
Example

- EID1 sees the problem
  Car pulling out parking
- EID1 Ucasts HID2
- HID2 Mcasts EID3
- Shared Neural Vision
  By simple indirection
  Standard ID-CODEC
  No peer-to-peer com
Use Cases

- Sharing in-town annotations through tiles beyond line-of-site
- Garbage trucks, unloading, double-park, jaywalkers
- Signage, markings, potholes, traffic-lights..
- Sharing out-of-town annotations through tiles beyond bends
- Slow-downs, stopped-vehicles, responders, heavy-incoming
- Signage, markings, potholes, traffic-lights..
Formal Tests