AI Car-Cams Put To Safe & Protected Shared-Use Video Feed + “Subtitles” (Annotations)
Frames and Annotations Aggregated...
IP Channels: Multipoint (cams) to Multipoint (apps)
Hair-pinned Through Addressable Geo-Tiles

Traffic Light  Person  Car  Traffic sign
Traffic Light  Person  Car  Traffic sign
Traffic Light  Person  Car  Cone
Traffic Light  Person

IPv6 Channels

H3-LISP
H3 Geo-Spatial Grid: Addressable (EID) & Routable (LISP)
Hierarchical Resolutions with Consistent Neighboring

- Resolution 15 ~1 meter²
- Resolution 14 is 7x R15
- R9 is $7^6$ m² (few blocks)
Nexagon Mobile-Edge Example
MobilityEIDClients <=> H3EIDServices
Nexagon Use-Case Example
Cars Finding Free-Parking For Other Cars

What - Where
R15HID::Parking

What - Where
R15HID::Parking

Nexagon Enum Tuples Header

Mobility Client EID (ephemeral)

H3 Service EID (R9)

SIM-Cam RLOC

Edge RTR RLOC
H3ServiceEIDs

Source MobilityClientEID

Dest H3ServiceEID

Source Port = xxxx | Dest Port = xxxx

UDP Length | UDP Checksum

Type | gzip | Reserved | Pair Count = X

Hexagon Hinx

H3-R15 ID

H3-R15 ID

H3 State

H3 State

H3 State

H3 State
The LISP-Nexagon Informational
MobilityEIDClients <=> H3EIDServices

MobilityEIDClients Parse “StreetView” Video Live
- Localize Annotations (R15) Publish H3EIDSService (R9)
- Using Access-Tunnel to LISP (map-assisted) RTRs

MobilityEIDClients Subscribe to (R9) Tiles-Of-Interest
- Send MLD-Report to RTR with (S= R9 EID, G= Theme EID)
- Head-RTRs Replicate H3EIDChannels to Subscribed RTRs
Discussion I: MobilityClient & EIDService Localization Using Vision

- Anchor Frames
- Accurate Expensive Localization
- Stale Outdated Dynamic Content

- Fresh Image
- Accurate Detection
- Inaccurate Localization
Discussion I: MobilityClient vs EIDService Localization

GPS => R9 EID Destination, Frame => R15 Localization

- Frame + H3ID::Annotation
- Easy match to Anchor Frames
- Frame Discarded After Matching

VS

- Heavier Upload (5G)
- Costlier Edge Compute
- Street Surveillance Potential
Stateless Anonymization
Stateful Localization
Discussion II: EID-States Based Network Function Virtualization
VNFS: Localization, Clustering, Tile Propagation

- Addressable EID States Overlay
- Pre-Fetched Functions to States
- Invoke State.Functions(Packets)

VS

- Addressable Functions Overlay
- Pre-Fetched States to Functions
- SFC Packets through Functions
EID Based MP2MP Channels
Cloudless Early Discard

Frames & Detections

Cellular 4Mb/s

Video stream + Sensor data

User dashboard
Inventory & Incidents
Virtual Cams

Geo-State Pre-fetched COIN Functions

Localization
Clustering
Tile Propagation

Selective Sample

Insurance providers

Cloud

Nexagon Channels to Map-Apps Driving/Parking Apps
Nexagon RFC Schedule

Thank You