Completing the automotive connectivity fabric
Data volume in and out of the vehicle in 2025

- Gig per Month per vehicle
  - 30 Gig
  - 1 Gig

Percent of the Fleet that is connected
- 20%
- 100%

100 Petabytes per month


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**Phase 1**
- Satellite backhaul directly interfaced with vehicle infotainment network
- Provides failover connection when LTE is not available

**Phase 2**
- LTE and 5G from vehicle chipset
- LTE, 5G, and Satellite backhaul is controlled via cognitive router
- Router selects best cost routing option given the environment
- Infotainment and C&V networks take advantage of hybrid backhaul
- Layer-2+ security isolates C&V network from infotainment network

**Phase 3**
- 5G over Terrestrial or SATCOM
- Routing becomes fully software defined and is integrated in Kymeta terminal
- Kymeta terminal contains 5G and LTE chipset
- Vehicle Backhaul System becomes satellite-enabled relay UE
- C&V network takes advantage of 5G uMTC, V2X, mMTC
- Infotainment network relays 5G or provides connectivity on BT or Wi-Fi
Phase 1 (Fall 2017): Switch between Terrestrial and Geosynchronous Satellite with JSAT in Japan
Seamless switching between satellite and cellular
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Phase 2: LTE, satellite integration for public safety
Phase 2: LTE, satellite integration for platform APIs
Rapidly deployable and always connected
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Phase 3 – System Architecture

Satellite RAN
Or SIM terminate (Proxy)

DVB-S2 Forward
/ TDMA Back

Geosynchronous

5G/Sat Arbitrator
Intelligent Router

iDirect Modem
WiFi
5G UE
and SIM in the car

Sat 5G
N2/3
Emulation of gNodeB

3GPP Core

N2/3

e(g)NodeB

4G/LTE

4G RAN

5GNR

gNodeB

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