CONNECTING CARS EVERYWHERE

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EMEA SATELLITE OPERATORS ASSOCIATION

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BY 2025

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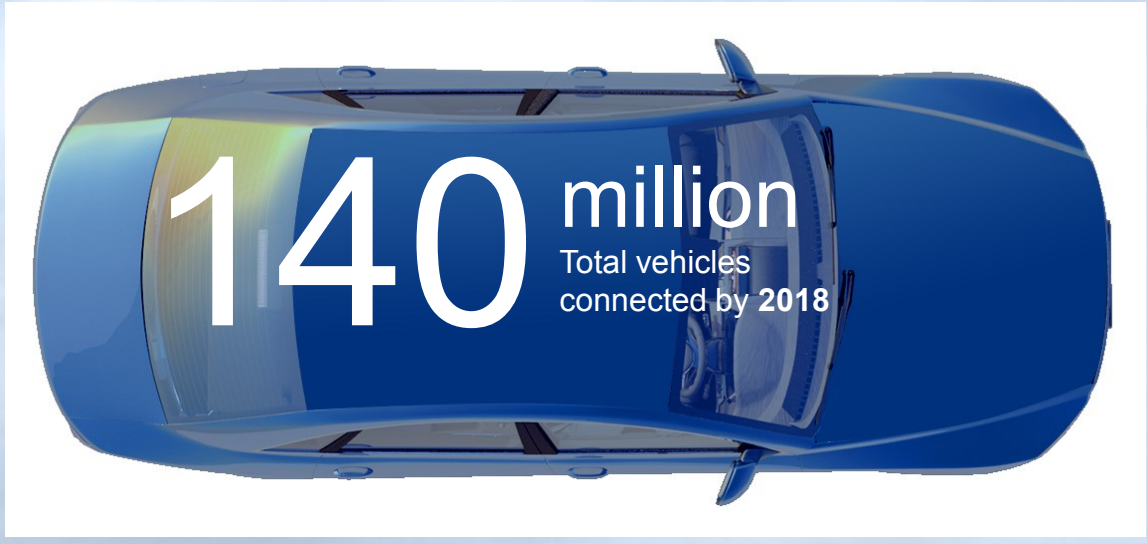
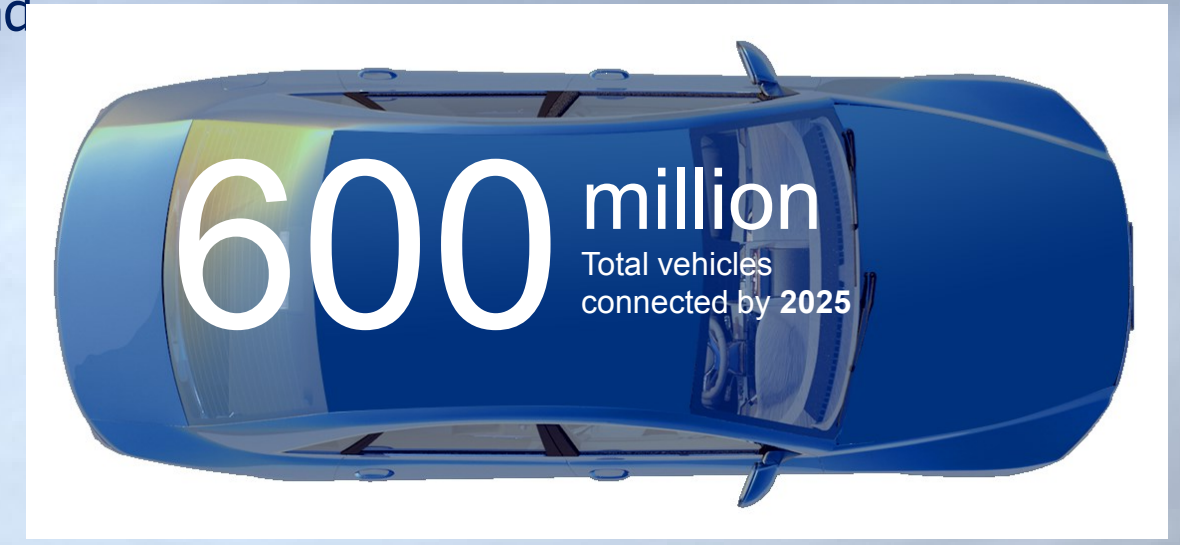
- 100% of new cars shipped will be connected
- 600 million total vehicles will be connected
- No single network will meet the growing demand





NETWORK OF NETWORKS

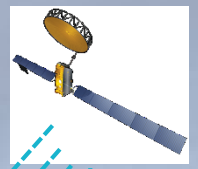
- Connected Cars will require a global, hybrid network that leverages both satellite and terrestrial technologies to connect cars everywhere
- New L-band satellites will provide a 5G-ready capability for mobility, delivering Mbps to very small, embedded, low po
- SATELLITE OFFERS:

  Highly efficient broadcast to deliver common content from one to many, balancing demand on 5G infrastructure

  Ubiquitous wide-area coverage

  Extraordinary levels of resiliency and security, maki as part of a network of networks - more safe, reliable and survivable

HIGHLY SCALABLE BROADCAST, GLOBAL REACH



- Satellite delivers common content to millions of vehicles, everywhere
- Intelligent routing selects network based on application, quality of service requirement and availability
- Return link for update receipts, status and event messages

SATELLITE APPLICATION

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- OTA UPDATES

  Rapid, responsive and efficient over-the-air software and map updates for vehicle systems

- ENHANCED NAVIGATION

  GNSS augmentation, differential corrections and integrity monitoring increase location accuracy for semi and fully autonomous driving

- MANAGED SECURITY

  Global certificate and key management, rapid response to latest vulnerabilities and attacks

- TELEMATICS

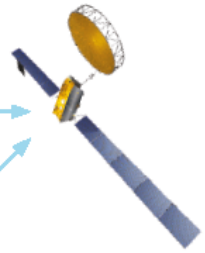
  Increased coverage and reliability for e-Call services, vehicle tracking and telemetry, remote diagnostics, condition based maintenance, and preventative analytics

ONE DEVICE, GLOBAL REACH

Low profile L-band antenna. Could be built in production by Tier 1 or OEM

Embedded satellite communications module for receiving broadcast data and sending acknowledgments. Could be delivered to Tier 1 or OEM as a chipset & software library

Modified TCU that manages communication and caches/applies firmware updates to other electronics in the vehicle. Includes gateway functions, firewall and IDS



Terrestrial wireless network

Software and firmware, navigation data, security patches, telemetry

5G & SATELLITE

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- NETWORK OF NETWORKS

  No single network can support all requirements for the automotive industry

- EFFICIENCY

  Satellite broadcast efficiently uses spectrum and network capacity for industrial applications sharing common content, making 5G resource available for on-demand consumer services

- COVERAGE

- From 2G to 4G, geographic coverage has declined while population centers are covered, satellite in the car ends the urban - rural debate for 5G by extending coverage to cars everywhere

- CONTINUITY

  Satellite longevity and backward compatibility assures connectivity for a car's supported lifetime

THE INMARSAT DIFFERENCE

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MULTI-BAND

L, Ka, Mil-Ka and Ku-band satellite capabilities

GLOBAL

Seamless coverage and in-orbit redundancy

MOBILE

Network designed and built for mobility

REACH

Everywhere beyond terrestrial networks

BREADTH

Unrivalled product and service range

SAFETY

Long term commitment to safety, mission critical requirements

SECURITY

Highly secure, military grade networks

ACCESS

Single network service allowed in 190+ countries