Intelligent Transport Management System (iTraMS)
A smart answer to connected mobility

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Hosur Road, Koramangala,
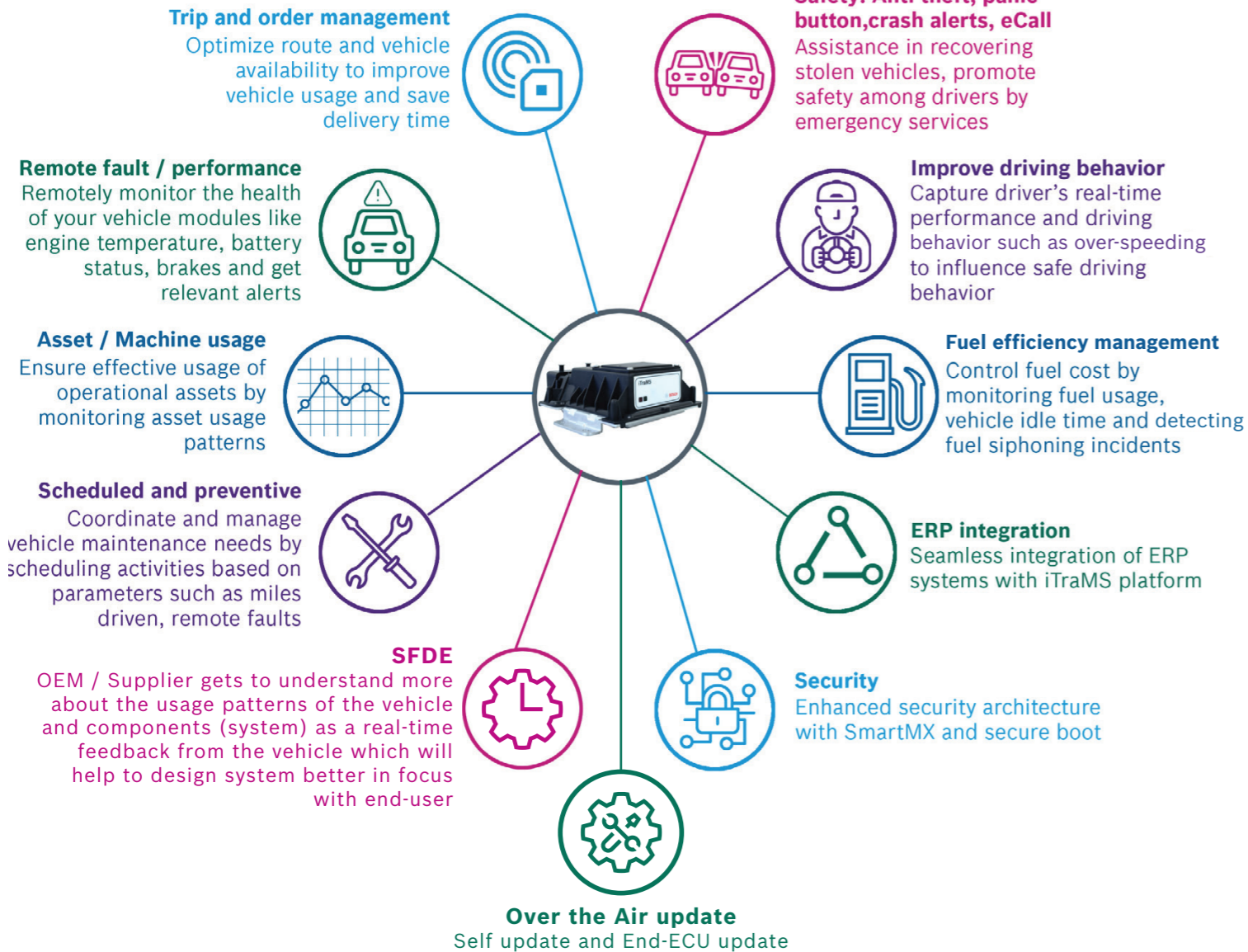Bangalore-560095, INDIA

Connect@in.bosch.com

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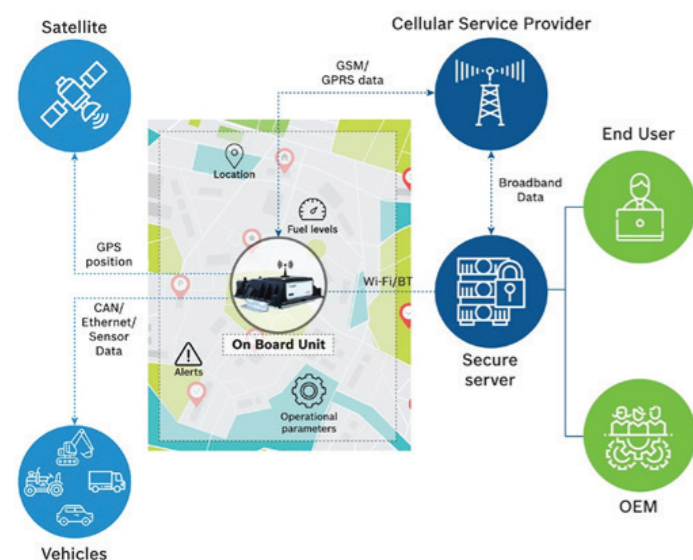# iTraMS: Intelligent Transport Management System

iTraMS is an end-to-end Vehicle to Infrastructure (V2I) ecosystem, designed to address the challenges of modern- day transportation and management of vehicles.

Leveraging on its years of mobility solutions experience, Bosch has the edge to provide insights on vehicle health management and performance. Through data analytics a customer can get valuable insights on vehicle performance, usage and health.

Key Use Cases

Trip and order management
Optimize route and vehicle availability to improve vehicle usage and save delivery time

Safety: Anti-theft, panic button, crash alerts, eCall
Assistance in recovering stolen vehicles, promote safety among drivers by emergency services

Remote fault / performance
Remotely monitor the health of your vehicle modules like engine temperature, battery status, brakes and get relevant alerts

Improve driving behavior
Capture driver's real-time performance and driving behavior such as over-speeding to influence safe driving behavior

Asset / Machine usage
Ensure effective usage of operational assets by monitoring asset usage patterns

Fuel efficiency management
Control fuel cost by monitoring fuel usage, vehicle idle time and detecting fuel siphoning incidents

Scheduled and preventive
Coordinate and manage vehicle maintenance needs by scheduling activities based on parameters such as miles driven, remote faults

ERP integration
Seamless integration of ERP systems with iTraMS platform

SFDE
OEM / Supplier gets to understand more about the usage patterns of the vehicle and components (system) as a real-time feedback from the vehicle which will help to design system better in focus with end-user

Security
Enhanced security architecture with SmartMX and secure boot

Over the Air update
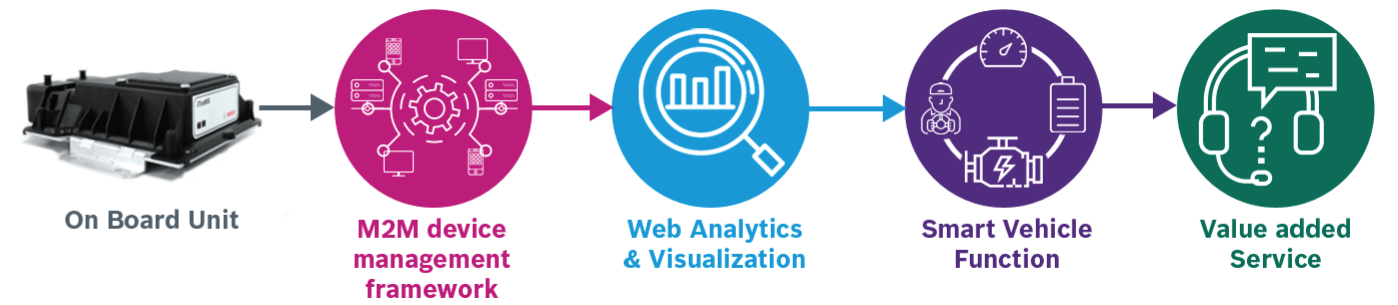Self update and End-ECU update

Solution Overview

Solution Application Areas

This solution can be deployed across all vehicle platforms – Commercial, Passenger, Construction as well as Farm equipment. iTraMS offers complete range of smart connectivity solutions for different domains.
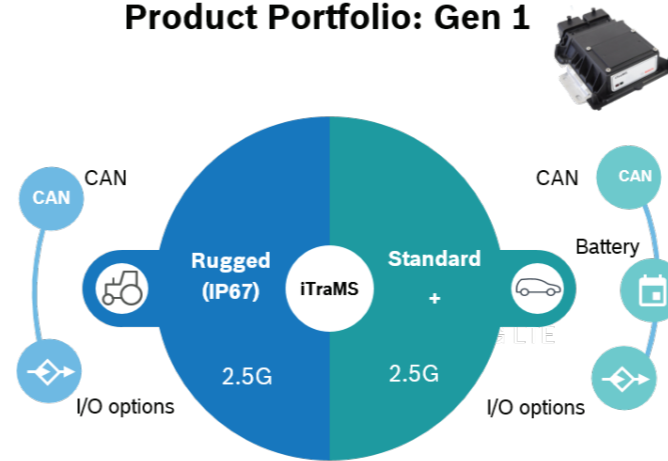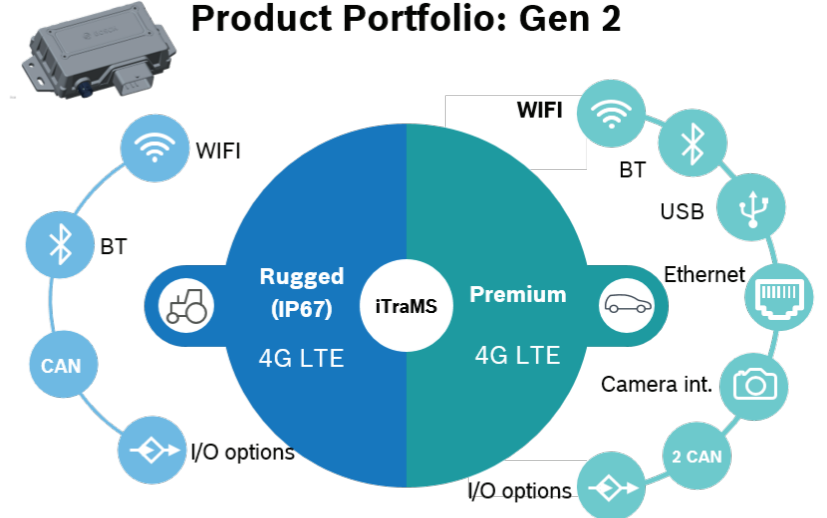

End-to-end Solution

On Board Unit → M2M device management framework → Web Analytics & Visualization → Smart Vehicle Function → Value added Service

Connectivity Control Unit

Product Portfolio: Gen 1

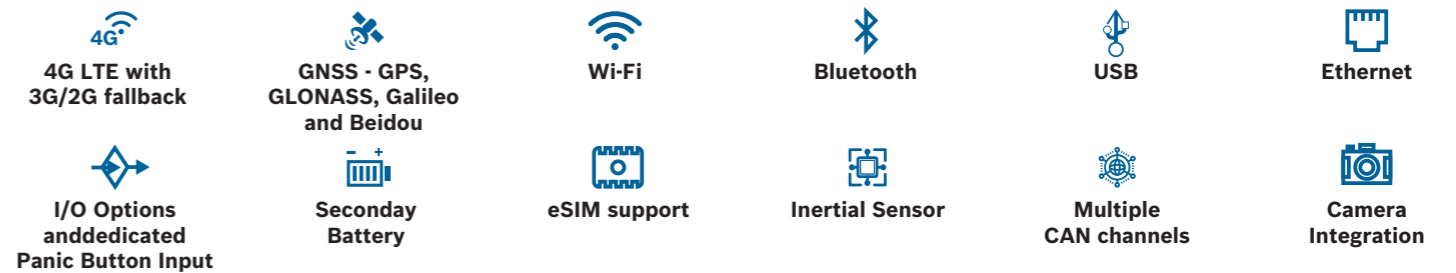CAN · CAN · CAN · Battery · Rugged (IP67) iTraMS Standard + · 2.5G · 2.5G · I/O options

- ▶ Product status: **In Series** (since May 2016)
- ▶ Key customers: OEM's in India
- ▶ Devices in field: 10000+ (Tractors, Construction, CV)

Product Portfolio: Gen 2

WIFI · WIFI · BT · USB · Ethernet · BT · CAN · Rugged (IP67) iTraMS Premium · 4G LTE · 4G LTE · Camera int. · 2 CAN · I/O options · I/O options

- ▶ Product status: Series Planned in Q1/Q2 2019
- ▶ Key customers in South Korea, EU and NA region

The feature highlights

4G LTE with 3G/2G fallback · **GNSS - GPS, GLONASS, Galileo and Beidou** · **Wi-Fi** · **Bluetooth** · **USB** · **Ethernet**

I/O Options and dedicated Panic Button Input · **Seconday Battery** · **eSIM support** · **Inertial Sensor** · **Multiple CAN channels** · **Camera Integration**

Product Compliances

No	Capability	Description
1	Manufacturing	TS16949 Certified
2	Certifications	Fully AEC qualified components & RoHS AIS 004, E-marking, CE Certification
3	EMI EMC	AIS 004, CE, ISO 11452, ISO 7637-2, CISPR 25, ISO 10605
4	Environmental standards	ISO 16750

Our Value Proposition

Automotive Grade Connectivity Control Unit
Automotive Grade Telematics connectivity HW, that shall meet all the relevant validations that are expected out of the system. This capability is also backed up by world-class in-house design house and validation experts.

Security
Bosch gives emphasis on security with a robust in- house security validation and clearance for every product. In line with the Product Engineering Process we also have clearly defined policy and framework for Security Engineering Process where risk, threats and data is scrutinized for any vulnerabilities that exists.

Machine/Engine function expertise
Bosch, being a premier automotive company brings its expertise in engine and Machine Management Systems into telematics domain. This helps in value add for features like remote diagnostics, FOTA (ECU Flashing over the Air) and preventive maintenance.