

What is Advanced Telematics?

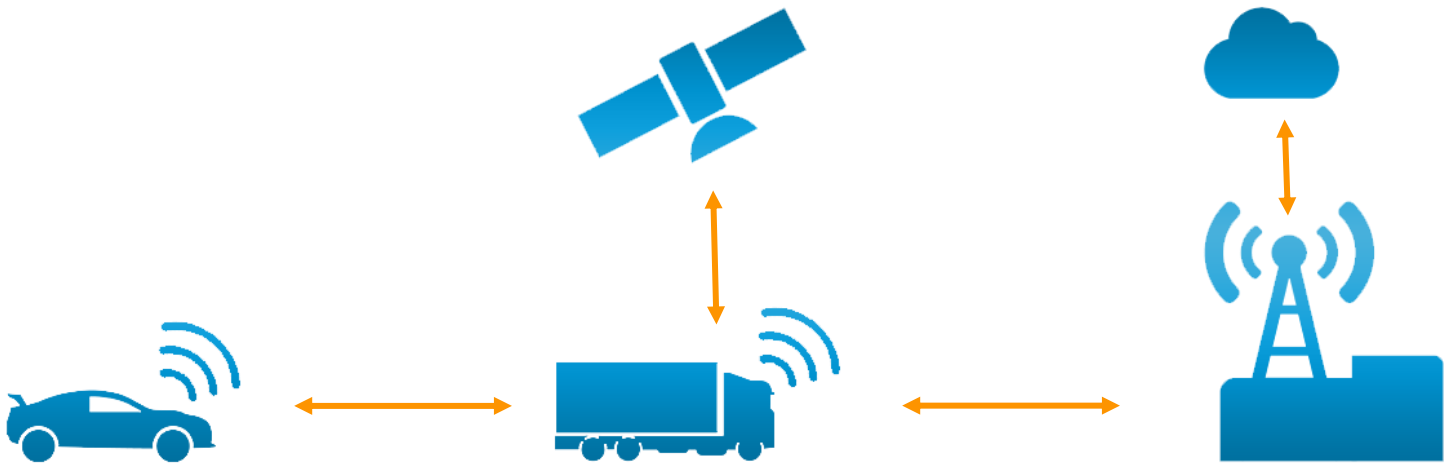


Telematics is the technology used to collect a vehicle's location data and maintenance requirements using GNSS (Global Navigation Satellite System) and onboard diagnostics (OBD) technology. Most are familiar with the basic functionality of traditional telematics systems that include asset tracking and remote diagnostics. However, today's advanced telematics systems use 5G and Wi-Fi 6E wireless communication technology and in-cab video cameras to capture massive amounts of data to enhance telematics capabilities. Advanced telematics is an essential management tool for commercial industries and government agencies that operate vehicle fleets. These organizations rely on telematics for improving fuel usage, route optimization, regulatory compliance, reduce operating costs and safety.

Here are just a few **Industries Using Advanced Telematics:**

- Government agencies
- Construction companies
- Food and beverage companies
- Oil, gas, and mining industries
- Police, first responders, and other public agencies
- Landscaping companies
- Waste management fleets
- Car rental and leasing companies
- Delivery companies
- Towing companies
- Trucking companies

Advanced telematics systems consist of in-vehicle devices, fleet management software and a 5G vehicle router. The systems connect to a 5G/Wi-Fi 6E/GNSS multiband antenna mounted to the roof of a vehicle. Other devices such as laptops and in-cab video cameras also connect to the vehicle router. The telematics system sends the vehicle data to a private cellular network that transmits data back to servers hosted by the provider or a third-party cloud server. This data stored in the cloud is available for fleet managers to access from any device with an internet connection.



Advanced telematics creates safer and more efficient routes for drivers to reduce delivery times and fuel usage. The focus of any fleet manager is the safety of its drivers. Telematics provides real-time feedback to drivers and fleet managers regarding speeding and braking. This data is then used to adjust driving behavior. Fleet managers can use the data to create training programs to improve driving habits and the fleet's safety. This data enables fleet managers to modify driver acceleration, speed, and braking behavior.

5G cellular networks offer ultra-high-speed and ultra-low latency that enables Advanced Driver Assistance (ADAS). ADAS monitors fuel consumption, real-time navigation, communication, in-cab video camera, speed, and cruise control to better manage fleets. 5G will also enable Driver Monitoring System (DMS). DMS uses Artificial Intelligence (AI) and sensors to detect unsafe behavior inside vehicles like distracted driving and falling asleep while driving.

Other systems used by advanced telematics systems include Engine Control Modules (ECM) and Electronic Logging Devices (ELD). ECM and ELD systems assist with regulatory compliance requirements such as IFTA reporting and vehicle inspections. ECM modules monitor speed, odometer, brake use, engine temp, oil pressure, diagnostic codes, and other informatic

devices in the engine. ELD systems monitor and report on the date, time and monitor driver behavior in real-time.

As advanced telematics continues to gain momentum, it will continue to evolve. Up-and-coming vehicle technologies such as battery-electric vehicles, autonomous vehicles, Big Data, and AI will be integrated into advanced telematics. The information provided by these technologies such as battery life and vehicle range, will further enhance vehicle telematics.

Advanced telematics is now becoming the basis for every fleet management system. Without devices in the vehicles transmitting data, it would be impossible to monitor fleets with the same level of accuracy. Advanced telematics provides fleet managers valuable information on improvements in fuel usage, driver behavior, route optimization, regulatory compliance, reduced operating cost, and safety. Advanced telematics is an essential component of fleet management. Most commercial industries and government agencies experience that it pays for itself by improvements in efficiency, productivity, and safety. Advanced telematics will continue to grow with GNSS technology and the increased use of mobile devices.



Author:
Jaime Duran
Product Manager

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