

Risk synergy

# Fleet telematics



**Environmental**



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## About Markel's Risk Solution Services team

**Risk Solution Services** provides technical insight related to existing and potential insured risk at Markel. The team partners with our customers, claims, and underwriters to educate on both current and future risk trends and supports our clients with a comprehensive offering of risk management solutions.

We do this by engaging with clients, underwriting, and claims teams.

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## What is a telematic?

A telematic (aka telematic) or connected fleet is one which utilizes the science and technology of automatic measurement and transmission of data by wire, radio, or other means from remote sources such as vehicles to receiving stations for recording and analysis in “real time.” It is a term coined by the combination of the terms telecommunications and informatics. The global “commercial” telematics market is expected to reach \$49.12b by 2020 at an estimated CAGR of 18.4% while the total global telematics market is expected to reach \$140b by 2022 for all and multiple use growing at a CAGR of 28.5%. The advantages of telematics in vehicles to the insurance sector is it allows estimation of accident damages more accurately, reduce fraud claims, attract low-risk drivers, and reduces cost of claims.

Telematics has the following general operational constituents:

- GPS satellite
- Connected vehicle
- Cellular network
- Telematics service provider (TSP)
- Customer/insured/fleet



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## How telematics work

- The GPS satellite obtains the location information.
- The connected vehicle transmits time, location and vehicle information using cellular technology.
- The cellular network connects the connected vehicle to the telematics service provider.
- The telematics service provider gathers and stores the vehicle information to create telematics-based services.
- The customer/insured/fleet utilizes software (usually in a regional or central operations center) to manage the fleet for productivity, savings, and safety gains.

The internet has made connectivity applicable to any vehicle. Various technology platforms may be utilized for telematics and can include smart phone apps, apps tethered to on-board diagnostics, self-installed on-board diagnostics devices, aftermarket hardwired professionally-installed devices and currently more often original equipment manufacturer (OEM) built-in solutions. Basically, however, telematics is segmented into OEMs and aftermarket. Aftermarket presently controls the majority of the market but is expected to be overtaken in 2019 or 2020 by OEMs. The types of commercial telematics by market for OEMs are embedded and hybrid; for aftermarket embedded and portable. Leading end-users are still transportation and logistics operations. Key telematics organizations include: Verizon, Harman, TomTom, AT&T, Vodafone Group, Ford, BMW, Telefonica, MiX Telematics, and Trimble Navigation Ltd.



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## Mobility management

Most industries have adopted or are currently adopting telematics to some extent including delivery, construction, government, utilities, and service. However, for the most part the larger the fleet the more receptive management is to adoption of telematics. With respect to fleet, transportation and service; companies are looking at “connected fleet” strategies that utilize multiple mobility types. Data is pulled from vehicles, from people (drivers and support staff), as well as other technical assets and software. Using sophisticated analytical software, better control, planning, and efficiency are starting to define new business models, scheduling, routing, and safer operations.

Management of fleets or “mobility management” then becomes a means of assessing the use of a fleet of vehicles in a safe, efficient way to maximize quality, efficiency, and profitability while reducing the potential for losses and injuries. Oftentimes with proper mobility management, transportation and logistics entities have found greater efficiency and areas of expansion to generate additional business opportunities.



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## Benefits of mobility management

While mobility management can greatly assist in fleet efficiencies and loss prevention, it also serves to help educate operations and support staffs on what options are available and strategize on what are the best business and operational approaches for their respective fleets. Typically, a customer places a high degree of importance on materials arriving on time especially in just in time (JIT)-type scenarios as planning and knowing where materials are during the transportation phase directly affect operations, productivity, and profits. A fleet operation being able to effectively plan for shipments based on mobility management can accurately schedule fleet operations, and in doing so, drivers and operations feel less stressed, less fatigued, and are able to provide quality service with a high level of safety and associated reduction in losses.

Mobility management uses real time tools to effectively analyze ahead of time efficient transportation scheduling for location, typical traffic at different times of the day (school buses on a school day, etc.) to facilitate on-time delivery of goods and services without the need to “push” drivers beyond safe operating parameters.



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## Telematics data

Utilization of telematics generally falls into the following categories. All or some portions may be found in most telematics systems.

- Fleet management
- Driver performance
- Fuel utilization
- Location of vehicles
- Security of vehicles
- Aggressive events

Telematics data helps mobility management develop into the “connected fleet.” To be successful, there are requirements to make mobility management (transportation exposure) a success:

- All employees regardless of department need to be trained on how to use the various telematic tools.
- Telematics training needs to include how these tools benefit the organization and its employees.
- All employees and management who will use the data must understand the appropriate manipulation of the data into “information” and be appropriately trained to this end.
- The concepts and ideas behind telematics are what has led to advancements in creating the “connected fleet.” It is not atypical for management to meet a driver face-to-face every day. Long haul drivers may not be seen for weeks if at all. However, now with the connected fleet, management can use sophisticated management software to effectively ride with a driver and monitor performance.

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## Regulation

- To enhance and ensure vehicle safety, governments internationally, especially in North America and Europe, are promoting the use of vehicle telematics. The federal government's Executive Order 13693 calls for improving agency fleet and vehicle efficiency and reducing greenhouse gas emissions through deployment of vehicle telematics.
- In December 2015 the Federal Motor Carrier Safety Regulation passed a rule which requires installing electronic logging devices (ELD) (to be installed by December 2017) to enhance convenience, tracing, management, and sharing of records, thereby improving compliance with the HOS rules.
- In the European Union, an initiative--eCall--to bring rapid assistance in case of a collision, was proposed and approved by the European Parliament in 2013.
- In 2015, an EU regulation was voted in favor of all new cars to be equipped with eCall technology from April 2018.
- In the UK, the government is promoting the use of telematics technology to help organizations manage their fleets more effectively, thereby improving safety and efficiency. It was estimated that the benefits offered by telematics technology would be able to save on a ratio of 3 to 1 for anything spent on telematics.



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## Issues for underwriters to consider

### Issues for underwriters to consider include:

- Telematics includes use by light, medium, and heavy commercial vehicles. All major manufacturers are now concentrating on telematics in their vehicles.
- The availability and range of what is available in the field of telematics continues to grow exponentially.
- Good analytical software is an absolute necessity of telematics functioning correctly and optimally.
- The company that uses and enforces telematics changes its culture; and quality and safety become the way they do business. They are able to gain insight and move forward rather than the everyday routine of “putting out fires.”
- GPS tracking enables management to monitor each vehicle’s location and speed in real time 24/7.
- The vehicle’s engine data through telematics allows analysis of the vehicle, as well as the driver’s performance. Speed, acceleration, hard braking and other key data become readily apparent.
- Software can be programmed to provide real time alerts for speeding, prolonged idling, and many other factors.
- Recent federal legislation has required ELDs (electronic logging devices) in larger trucks. These devices replace paper logs and greatly control drivers who try to push beyond safe driving hours, as well as over anxious dispatchers who try to “push” a driver to drive illegally.
- As part of a connected fleet, operations and dispatch can now monitor hours of service in real time and anticipate future loads a driver can handle without becoming fatigued. **Driver fatigue is a major cause of serious crashes and large losses. Eliminating unnecessary driver fatigue lessens crashes and losses.**
- A connected fleet has the advantage of monitoring vehicle performance and detecting maintenance problems as they begin rather than after the fact.
- Early maintenance problem detection allows for the problem to be addressed as a preventative maintenance or repair scheduling as opposed to an on the road breakdown. **Breakdowns on the road cost more for repairs, can place the driver and vehicle in harm’s way, or even cause a crash.**
- Many newer large vehicles now have crash avoidance sensor technology available. This too can be connected and provide management with insight into driver behavior when warnings are recorded and sent to management for behavior such as following too close, speeding, panic braking, etc.

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- Many fleets are adding a forward-looking, dash-mounted camera that also has a camera focused on the driver. **Data reporting a panic stop for instance, can now be reviewed prior to and during the incident to check the traffic in front, the driver's speed and performance, and what the driver was doing.**
- In the connected fleet, the vehicle and telematics are producing data every second. Vehicle movements and stops are tracked and recorded.
- Vehicle performance is tracked as well as mileage, and analytic software automatically schedules preventative maintenance as well as repair maintenance.
- Analytical software tracks hours of service, available driver drive time for the day and week, and helps make operational decisions on equipment and driver availability to match with loads that can efficiently be hauled keeping the customer base happy as well as maximizing profitability.



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## Questions to be asked by underwriters

- For underwriting purposes, the following questions should be asked:
- Is there a formal written telematics operations manual?
- Who are the contracted parties to the insured telematics program?
- How long has the telematics program been in operation?
- Does the operations staff (who dispatch), safety, and maintenance meet in an operations center or site, on at least a daily basis?
- Does the operations center utilize and record screens and data portraying different telematic data in real time, and with immediate past history?
- Is vehicle progress noted by using telematic data in a systematic way?
- Are hours of service monitored and suggested available backhauls automatically generated?
- Is each vehicle's performance noted and are vehicles currently being serviced monitored for repair progress prior to return to service?
- Is each driver briefly interviewed, reviewed, and any abnormalities noted each day?
- Does the telematic data show which drivers are waiting for a product to be loaded or unloaded? Various customers pay for documented delay time. Telematic data clearly shows and bills delay time, something that is often overlooked in a non-connected fleet.
- Do operational staffs match drivers with loads in the future saving time, money, providing drivers with adequate rest time, while keeping customer mandates?
- Is telematics not just a tool, but has it become a management system and company culture? What proof is there of this?
- Are all staff aware of the total operation and decisions and actions based on telematic data? How is this accomplished?
- What evidence is there that the company does business based on quality of service and safe operations? Prominent customers pick up on the efficiency of the operation and unstressed drivers, and rely on a company not to be involved in crashes and breakdowns.
- Do crash rates continue to trend lower and profitability continue to increase? What evidence is there of these trends?
- Is there management and executive support for using telematics to foster a positive company culture that operates efficiently, safely, and proudly? Generally there is an executive letter to employees to this topic signed by employees.

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- When considering a fleet to underwrite, consider how connected that fleet is. A connected fleet driver no longer is just “seen” when they arrive at the terminal. That driver can now be viewed every second they are on the job.
- Poor driving behavior can now be corrected by analyzing data instead of waiting for a loss to occur.
- Does management function to insightfully plan utilizing access to immediate data on driver and vehicle performance?
- A digital workflow enhances efficiency and profitability. Monitoring driver performance provides early warning signs that a driver has broken stride with their normal trend. Are these types of scenarios addressed in the telematics program, and does management reach out to find out if a driver is ill, has personal problems, etc., and offer assistance while problems are manageable.
- A connected fleet also finds itself with improved
- USDOT compliance and reduced roadside violations. Most notably, the connected fleet is less prone to crashes and losses. What is the current and past loss history and USDOT compliance record for the insured under consideration.

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