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Guidance for Small Fleets in Selecting a Telematics System

Vehicle telematics is a general term that involves capturing vehicle, driver and/or cargo information and utilizing that information to manage operations, safety, and maintenance.

Telematic systems vary greatly in:

- How they capture data: through a dongle, a smart phone, another device, or a combination of devices.

- What data is captured: not all systems can collect engine data or detect distracted driving, for example.

- How often vehicle location is updated: every minute, every two minutes, when a trip has ended.

- How the data is portrayed/analyzed/displayed, and how it is made available for use by management and the driver.

When considering a telematics system an organization should:

- Determine which functions and features are critical to their needs.

- Network with others in their industry to obtain feedback on common vendors used.

- Evaluate several vendors whose product meets those needs.

- Test/trial each system with multiple vehicles before committing to a contract.

The purpose of this guide is to assist you with identifying common telematic systems and functions that are important to your organization. It can also be used to document capabilities of systems you are considering. This guide is geared towards small fleets with light to medium class vehicles. For larger fleets, please refer to our Telematics Selection Guide — Advanced.

Common System Configurations.

The following is a generalization of the three most common systems used for light and medium vehicles. While these systems may function for larger vehicles, some additional hardware may be required, and some features may not work. The estimated costs are for core features most organizations would require.

Dongle-based telematic systems.

These systems have been around the longest. A dongle, also known as a data logger, is plugged into the engine control module through an OBD-II for small and medium vehicles or a 6- or 9-pin port for larger vehicles. The dongle collects engine data such as speed, braking, and maintenance information. Dongles have a built-in Global Positioning Systems (GPS) and often have integrated accelerometers and gyroscopes which help to collect location, speed, braking, cornering and acceleration information. They also have a built-in cellular card to transmit data.

ADVANTAGES OF DONGLE-BASED SYSTEMS

- Because they are installed in the vehicle, they track the vehicle's location at all times, no matter who is driving.

- Because they are plugged into the vehicle's engine control module, they can collect maintenance-related information such as diagnostic trouble codes (DTC).

Questions? Contact Nationwide Loss Control Services: 1-866-808-2101 or LCS@nationwide.com.

DISADVANTAGES OF DONGLE-BASED SYSTEMS

- You do not know who is driving.

- They are generally more expensive because each dongle has it's own cellular data card and data fees.

- They generally do not monitor or track cell phone-related distracted driving.

- They do not provide post-trip driver feedback.

Costs: Service has an annual fee of $250-$350 per vehicle. Dongles are a one-time cost of $75-$125 and may be built into the annual fee. Vehicles without OBD-II ports require a J-bus connector that comes with a one-time cost of $15-$135.

Cell phone/tablet application (app)-based telematics systems.

These systems are becoming very popular. They use the GPS and built-in accelerometer/gyroscope from the phone or tablet to collect positional, speed, braking, acceleration and cornering information. They may also have a tag or other device permanently installed in the vehicle which connects to the app via Bluetooth®.

ADVANTAGES OF APP-BASED SYSTEMS

- You know who is driving because it is tied to a specific phone or tablet

- Generally less expensive as data is transmitted through the driver's phone/tablet, utilizing that device's data plan. Tags used in the system are substantially less expensive than a dongle.

- They often track cell phone use, including talking, texting, swiping and/or cell phone movement. They may also lock out any cell phone use. Keep in mind that if you provide a driver with a locked-down company cell phone, they may still use their personal phone while driving.

- Driver apps typically provide a driver with immediate post-trip feedback regarding their driving habits: speeding, hard brakes, acceleration, etc. Many include a driver safety score and gamification features such as safe driving streaks, teammate rankings, etc.

DISADVANTAGES OF APP-BASED SYSTEMS

- Because there is no connection to the Engine Control Module (ECM), engine information such as DTC are not available.

- If the vehicle is driven by someone without a functioning app, the vehicle location will not be tracked.

- You are relying on a phone. Did the driver remember the phone? Is it on? is the app on — if required?

- A smart phone is required. The system will not work with basic flip phones. Are drivers provided a cell phone? If not, is the organization comfortable requiring drivers to use their personal cell phone? Will the driver be reimbursed for data used, which is usually very minimal?

Costs: Service has an annual fee of $80-$150 per vehicle. Tags or other required devices are $30-$80 one-time cost and may be built into annual fee. Cell phone data usage is minimal. On average, data used during 8 hours of driving is similar to the data used when downloading an MP3 song.

Hybrid systems.

These systems use both a dongle and a smartphone app, incorporating the advantages of both systems.

Connectivity.

Mobile connectivity is a consideration when selecting a telematics system.

- Does the network provider have good coverage in the area your vehicles operate? Are there any roaming fees, etc.?

- If you operate along the Canadian or Mexican border, you should discuss with providers how the network works when the devices pick-up a Canadian or Mexican network. Will you lose tracking during that time?

- 4G networks/systems are standard now for phones but many telematics systems are operating on 2G or 3G platforms. Before selecting a telematics provider, you should investigate what platform they are using and their plans for upgrades. If they upgrade, will you be required to purchase new equipment, like dongles?

Telematics System Evaluation Guide — Basic

Vendor: _____   Mobile network: _____   2G   3G   4G   5G

System type (check all that apply): ☐ Dongle ☐ Tablet app ☐ Cell phone app ☐ Other: _____

Costs & contract length: _____

Can the unit be self-installed: ☐ Yes ☐ No   Installation cost per unit: _____

Vehicle Applicability

Y   N   Will the system work for all vehicles the organization operates?

Y   N   Are additional adapters, cords, etc. needed?   Cost: _____

Y   N   Will the algorithms for determining critical events (accidents, hard braking, acceleration, cornering) work equally well for all vehicle types? Are you able to adjust thresholds for different vehicle types, if needed?

Location/Tracking Related Features

Driver Identification:

Y   N   Can the system tell who is driving the vehicle? This is important if vehicles are driven by multiple drivers.

Vehicle Tracking:

How often is a vehicle's location updated? _____

Y   N   Special map views? Check all that apply:

☐ Satellite ☐ Traffic (congestion) ☐ Weather

Y   N   For smartphone apps, will the location be tracked even if the driver does not have the app or if the app is not turned on?

Trip History:

Y   N   Can past trips (history) be viewed? How far back can they be viewed? _____

Y   N   Does trip history include start/stop times, mileage, and alerts such as speeding or hard brakes?

Y   N   Geofencing: Are alerts/reports generated when a vehicle moves into or out of specific geographical areas?

Y   N   Unauthorized Usage: Are alerts/reports generated when a vehicle moves outside set hours?

Vehicle Maintenance and Accidents

Y   N   Does the system alert/report engine Diagnostic Trouble Codes (DTC)?

Y   N   Does the system alert/report for excess idle time?

Y   N   Does the system have vehicle maintenance scheduling/tracking?

Y   N   Does the system have a pre- or post- trip inspection feature?

Driver Behavior

Y   N   Does the system identify unsafe driving behavior/critical events? (Check all that apply)

☐ Speeding: Top-end   ☐ Speeding: Above PSL   ☐ Lateral force/cornering

☐ Hard braking or hard/sudden acceleration   ☐ Cell phone use   ☐ Seatbelt use

Y   N   Does the system develop an overall driver safety score?

Y   N   Does the system develop specific scores for each behavior/critical event listed above?

Y   N   Driver App: Does the system have a driver app so the driver can review their own scores, past trips, etc.?

Management Portal/Tools

Y   N   Teams: Can the system group drivers by teams based on location, manager, duties, vehicle type, etc.?

Y   N   Smartphone: Is there a management smartphone app or has the portal been optimized for viewing from a phone?

Y   N   Displays and Reporting: Can problem drivers be easily identified? Is there easy printing and exporting of reports, data, etc.?

Y   N   Alerts: Can the system generate email or text alerts to supervisors when unsafe driving events are identified?

Y   N   Rewards: Is there any process for rewarding drivers for good scores or improvement?

Y   N   Coaching: Is there any guidance for managers to coach drivers with problem behavior?

Are there additional features that would be needed (Dash cam, ELDs, time cards, non-vehicle asset tracking, etc.):

_____

_____

_____

Key advantages of this system:

_____

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Key disadvantages of this system:

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