Fleet management systems represent a $27 billion industry globally

Less than Truck Load (LTL) shippers account for around 13.6 percent of America's trucking sector. Estimates of 15.5 million trucks operate in the U.S.. (Of this figure 2 million are tractor trailers)

Fleet management systems using GPS - 3.8 million units in 2015

US - fleet management systems are found in approximately 5.9 million commercial vehicles and Europe - 5.7 million units in 2016

A LOT OF TELEMATICS “BIG DATA”...!!

Sources: ABI Research, FleetLogik LLC, and Telematics.com
Security Architecture for Telematics Systems

Source: Federal Fleet Manager Cybersecurity Considerations for Telematics
Executive Order 13693: *Sustainability into the Next Decade*

**Telematics**

- The term “Telematics” refers to a *technology that combines telecommunication and information processing to send, receive, and store information related to remote objects, such as vehicles.*
  
  (Source: GAO 14-443, Federal Vehicle Fleets)

- **EO 13693: Sustainability into the Next Decade** (March 2015) Requirements
  - By 2017, all agencies should ensure that telematics collects the maximum vehicle diagnostics *(fuel consumption, emissions, maintenance, utilization, idling, speed, and location data)* at the asset level for acquisitions of new passenger, light duty and medium duty vehicles (where appropriate)

<table>
<thead>
<tr>
<th>Executive Order Reporting Requirement</th>
<th>GPS Tracking Only</th>
<th>GPS Tracking &amp; Vehicle Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Location data</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Idling</td>
<td>X</td>
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<tr>
<td>Utilization</td>
<td>X</td>
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<tr>
<td>Maintenance</td>
<td>X</td>
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<tr>
<td>Fuel consumption</td>
<td>X</td>
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</tr>
<tr>
<td>Emissions (varies by year, manufacturer, make &amp; model)</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Source: General Services Administration (GSA) Office of Fleet Management
**Government Fleet Management**

**Telematics and Risks**

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**Logical Architecture**

- Satellite
- Token Server Room
- Internet
- CDMA/GSM
- Telematics Data
- Fleet Manager

**Physical Architecture**

- Connected to an External Network
- Interfacing with a Public Network
- Accessible by Anyone Anywhere

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**Attack Surface Threats**

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Government Critical Mission Use

- **First responder and law enforcement vehicles** – fire, rescue, ambulance, police
  - Must be safe and reliable
- **Undercover vehicles** – mission critical
  - Must be safe and reliable
  - Blend in – not tracked or identified either by emanating too much or by not emanating at all
- **Government official / overseas embassy vehicles** (e.g., "Black SUV")
  - Must be safe and reliable but does not need to hide
- **Non-Tactical DoD Vehicles**
  - Commercial motor vehicles
- **General use government vehicles**
  - Vehicles that do not fall into above categories