# Presentation to AMSA

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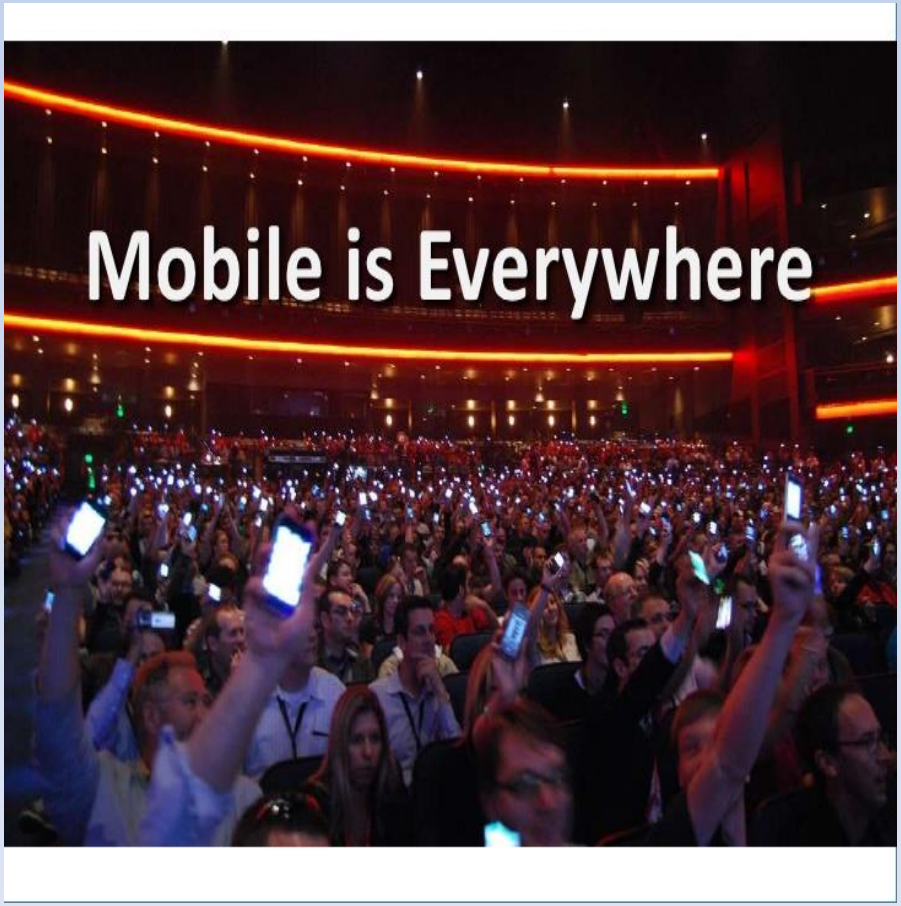
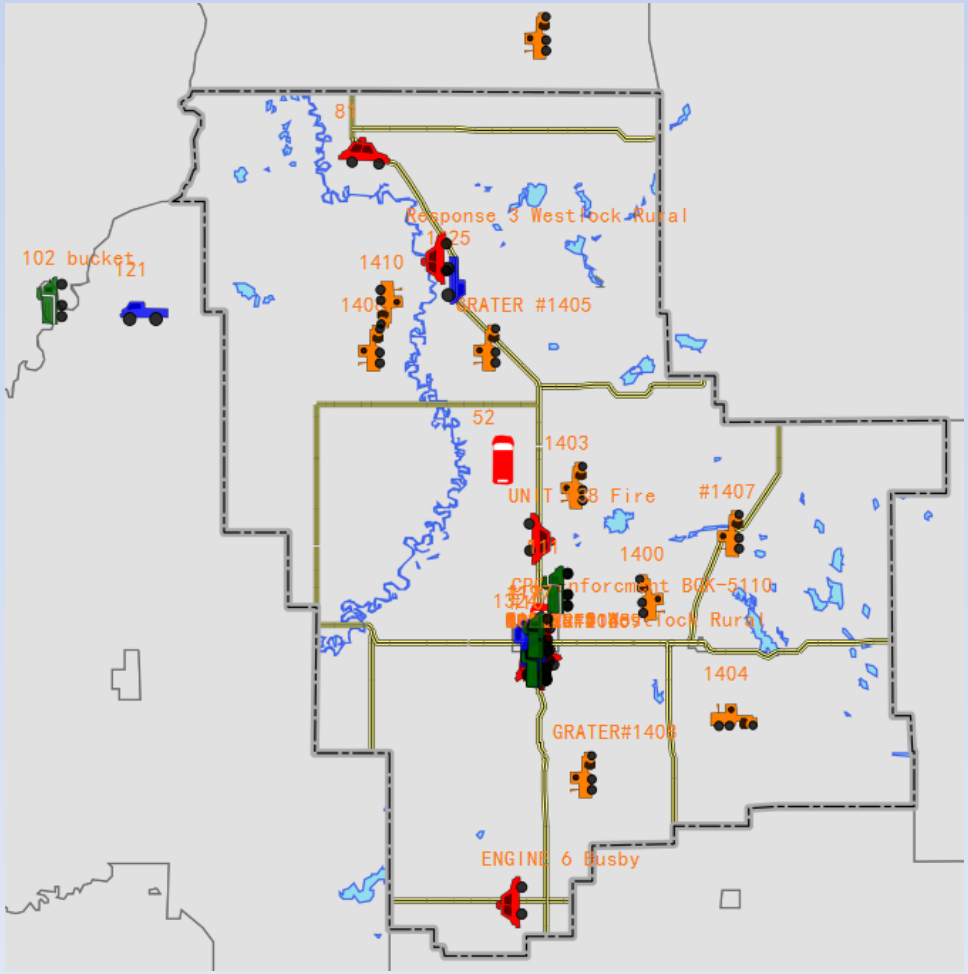
# General IT Trend

- **Cloud** is becoming more and more popular.
- **Mobile is Everywhere**.
- **GIS** is going to be the "Meeting Place" for your enterprise systems (AVL, Asset Management, Document Management, Planning, Taxation, etc.).
- **IoT** -> Sensors



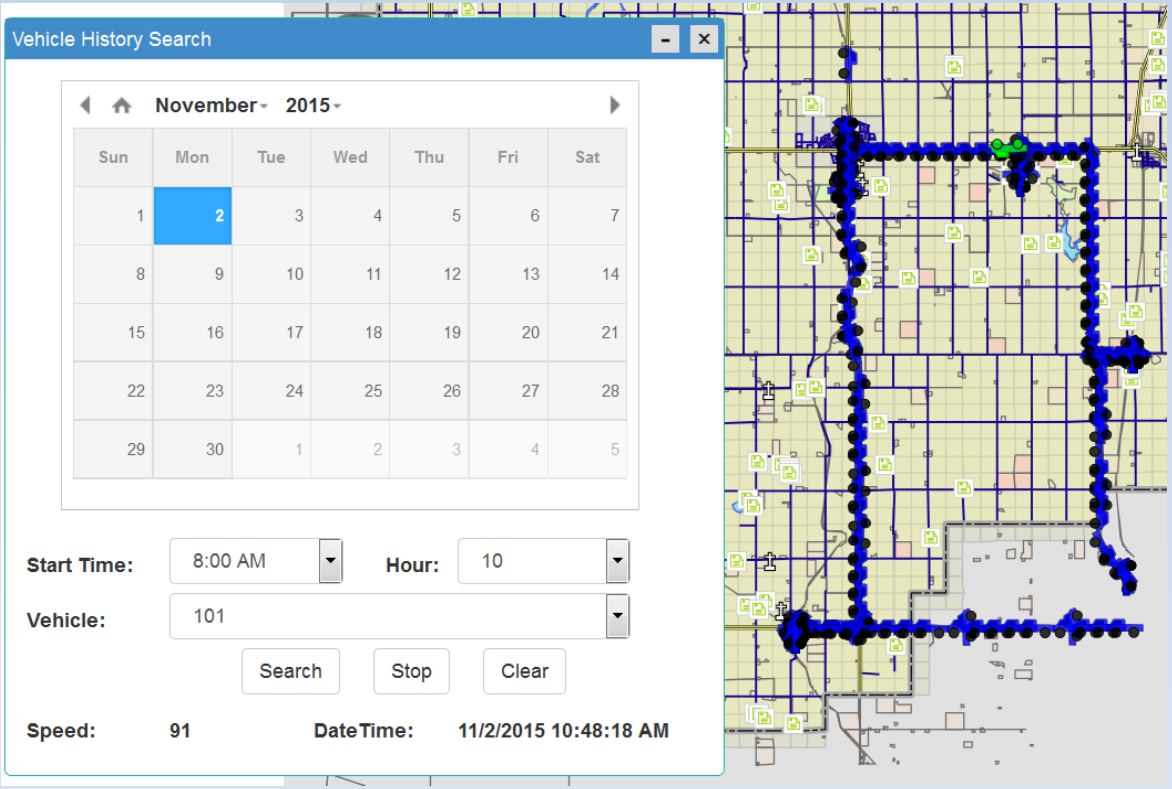
# AVL + GIS

- View GPS: authorized users can view GPS locations of vehicles on map in real time.



# Vehicle History Search

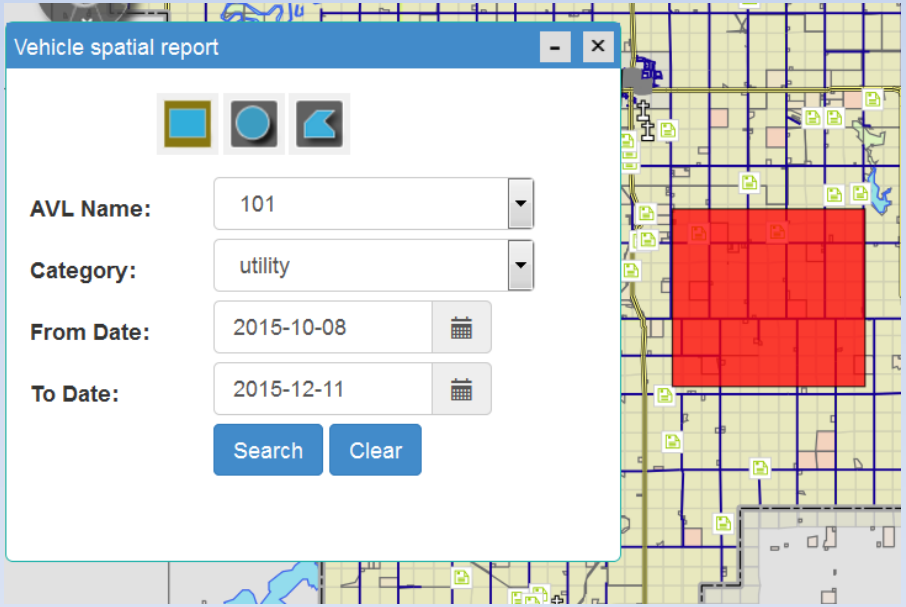
- Vehicle History Search

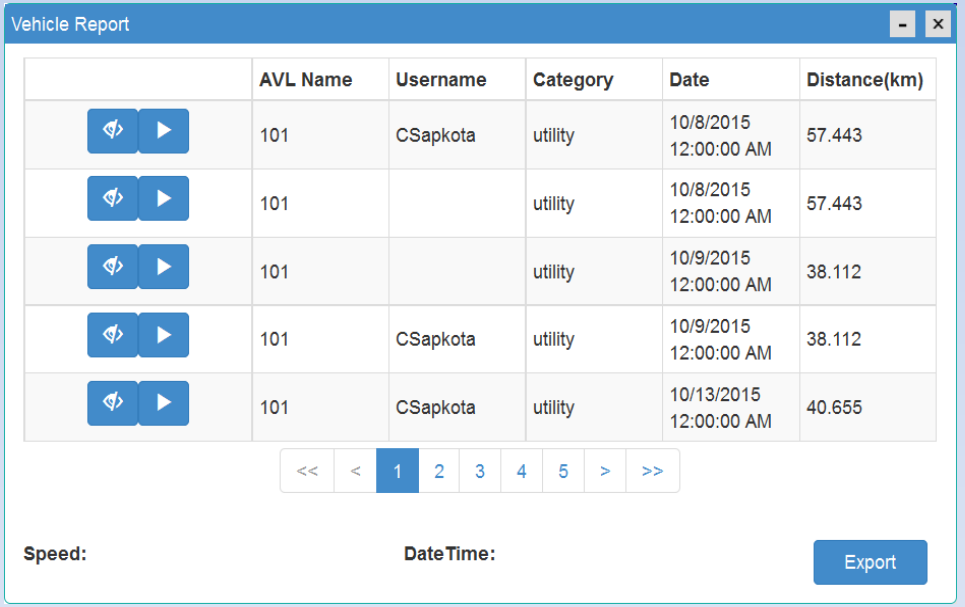



"Playback": green vehicle symbol represents the historical location of the vehicle during the selected timeframe. The vehicle speed and timestamp are displayed at the bottom of the window.

# Vehicle Spatial Report

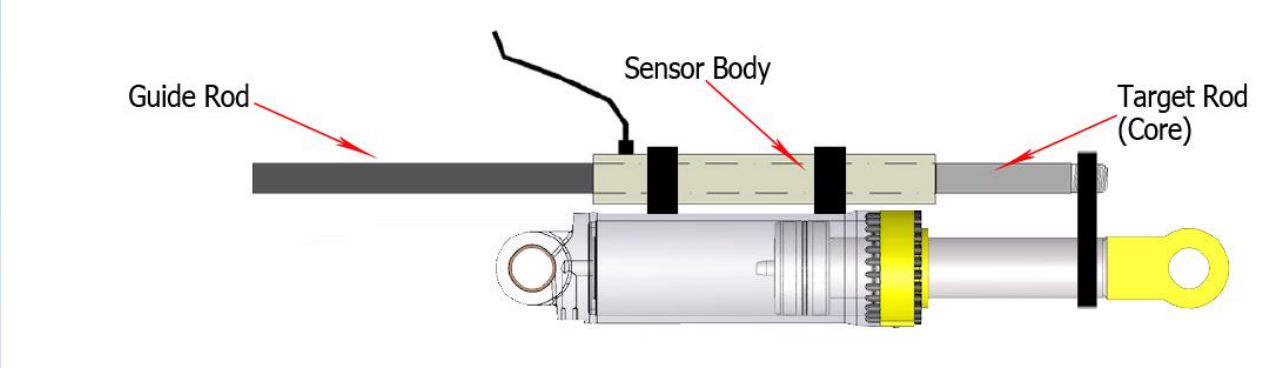
- Vehicle Spatial Report



# Grader Blade Up/Down Sensor

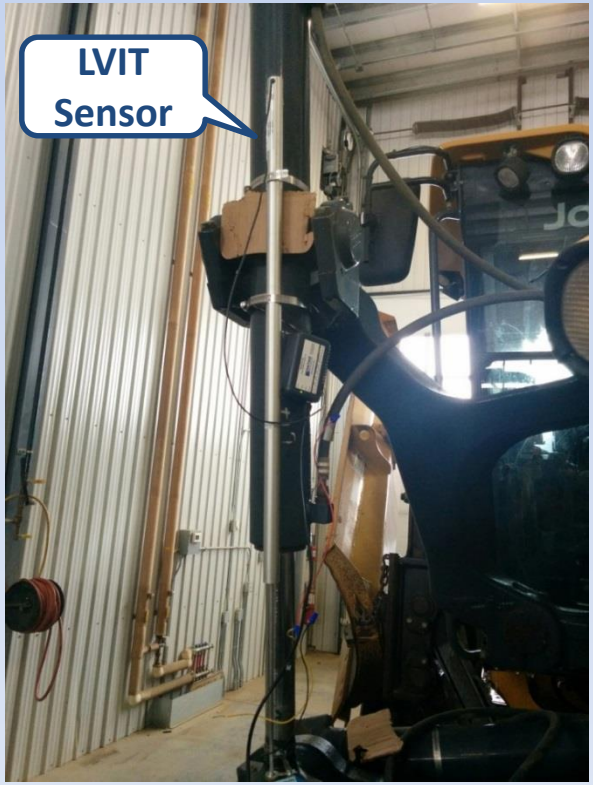
MRF proposes to use LZ-33 LVIT position sensor for graders. The following figure shows the mounting of LVIT position sensor.




| | |
|---|---|
| Movement range: up to 2 meters. | Measuring range: up to 600mm. |
| Linearity Error: +/- 0.15%. **1.5 mm for 1 meter range** | Operating temperature range: -40C to 105C. |
| Humidity: 95% RH non-condensing. | Shock: 1000 g, 11 msec. |

# Installation

- MRF did the implementation testing at MD of Provost.
- MRF proposes to use steel strap with saddle clamps to attach the LVIT sensor to the hydraulic cylinder and use rod ends to attach the sensor rod.




- The sensor will take 24V DC input, and the output Voltage will change when the distance changes. The output voltage will be connected into an AtoD convertor, then connected to the onboard computer via USB port.

# Cost of Grader Up/Down Sensor

- About $2,500 each
  - Grader Up/Down LVIT Sensor
  - **Onboard computer**
  - Installation
  - Travel cost extra

# Emergency Notification Solution

- Integrate an autodialing system into GIS
- Simply drawing a polygon on the map and the system will send mass notification through
  - Short Message Service
  - Voice Call
  - **5000 calls/min**
  - **9 cents per call**