



Managing Equipment by Using Technology

CHRIS VOLKERT

FLEET MANAGER, COLORADO DEPARTMENT OF TRANSPORTATION

CDOT's Technology in Equipment

Heavy Fleet (Plows)

AVL System – Zonar

MDSS – Iteris

Hydraulic Controller –
Certified Cirus

Testing - CradlePoint
WiFi system

Testing – mobile
friction sensors and
Panasonic V2X
systems

Light Fleet (Admin Vehicles) and Non- CDL Equipment

AVL – Verizon Network
Fleet

Testing – mobile
friction sensors and
Panasonic V2X
systems

Fuel Management

Fuel Master

Automatic Tank
Gaging

SharePoint (for Fuel
and Safety Reports)

Maintenance

- ▶ AVL Systems can provide
 - ▶ Recall Alerts
 - ▶ Alerts for operation outside normal parameters (temperature, pressure, etc)
 - ▶ Notifies mechanic / supervisor
 - ▶ Aid in tracking utilization data

Inspection

- ▶ CDOT uses Zonar's Electronic Vehicle Inspection Record (EVIR) for all equipment requiring a CDL to operate
- ▶ EVIR uses zone tags / "pucks" to communicate operator's and tablet's presence in the inspection zone
- ▶ Tablet programmed to guide operator through inspection process, depending on type of equipment
- ▶ Operator can enter faults, and take up to 5 photos per inspection
- ▶ Mechanics is notified of faults; clears faults after repaired
- ▶ A record of the inspection and corrective actions is maintained on the tablet
- ▶ Records can be accessed through Ground Traffic Control (GTC) webpage

Safety

- ▶ All AVL systems provide safety reports
- ▶ CDOT currently uses:
 - ▶ Speed reports
 - ▶ Geofences
 - ▶ Location data
 - ▶ Other driver behavior information on a case-by-case basis
 - ▶ Pre-Trip Inspection performance data
- ▶ Benefits:
 - ▶ Reduced fuel consumption, speeding violations, accidents, inappropriate use of government resources
 - ▶ Can prove innocence when false claims are made against agency
 - ▶ Constant awareness of equipment and operator location

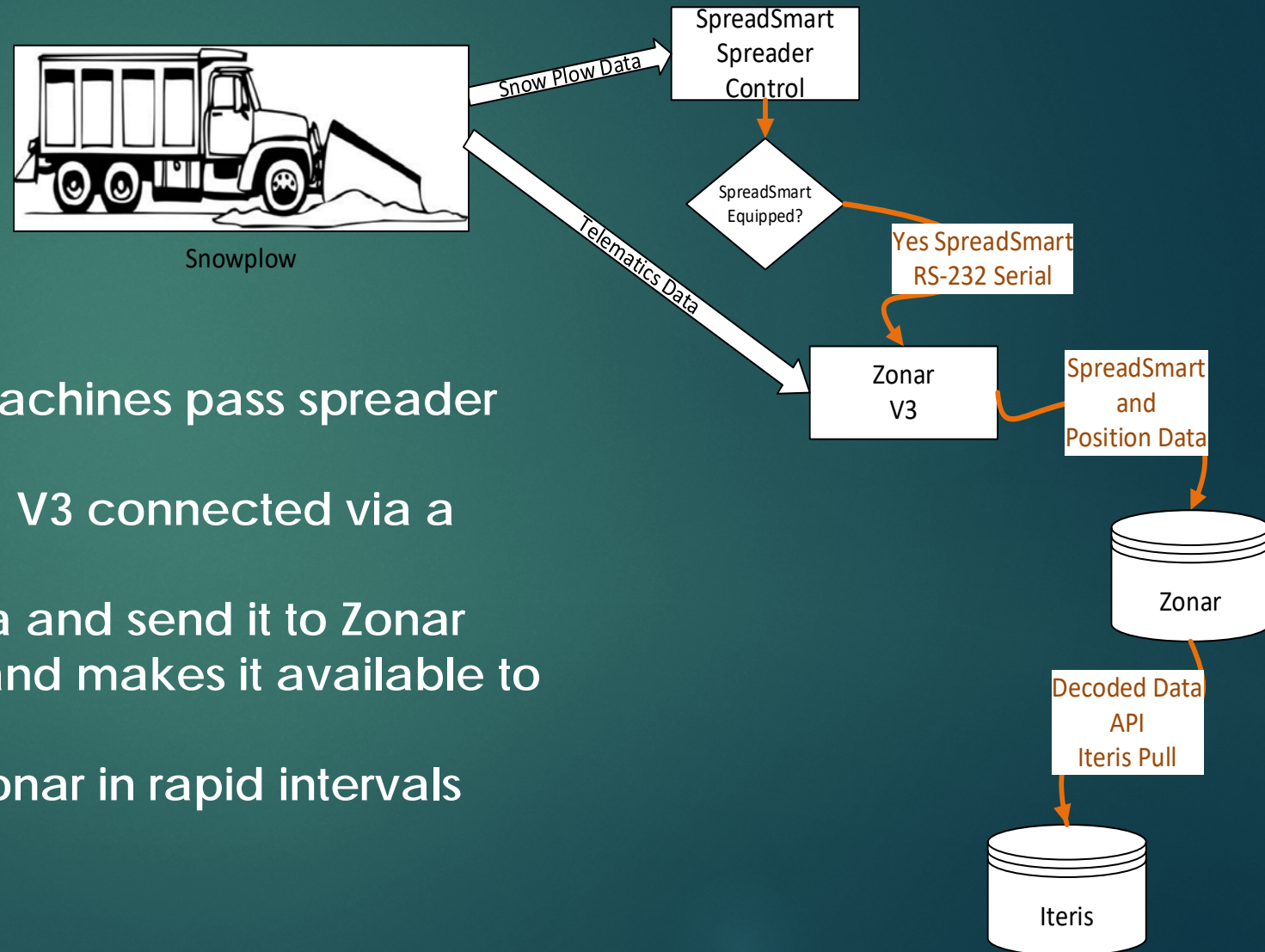
Performance

- ▶ AVL, in combination with other systems, has the potential to assist an organization with:
 - ▶ Optimization of maintenance
 - ▶ Early detection of potential mechanical problems
 - ▶ Route optimization
 - ▶ Situational awareness of entire geographic area
 - ▶ Materials optimization (anti-icing / de-icing)
 - ▶ Increased safe driving behaviors
 - ▶ Reduced payouts for false damage claims
 - ▶ Meeting “greening initiatives” (reduction in emissions, fuel)

Fuel Management

- ▶ Technology we use to track fuel purchases:
 - ▶ Fuel Card assigned to each vehicle
 - ▶ Each driver has individual PIN for fuel card
 - ▶ Each driver identified to vehicle (Key fob or RFID card)
 - ▶ AVL provides time and location data of vehicle
 - ▶ Fuel card vendor provides time and location of transaction
- ▶ Any anomalies create an “exception report” in SharePoint system
- ▶ Also works with FuelMaster units at bulk fuel sites
- ▶ Eliminates need for paper logs and receipts

CDOT's Connected Snowplow



- SpreadSmart equipped machines pass spreader data automatically.
- The SpreadSmart CPU and V3 connected via a serial cable
- The V3 packages the data and send it to Zonar
- Zonar decodes the data and makes it available to Iteris
- Iteris gets the data from Zonar in rapid intervals