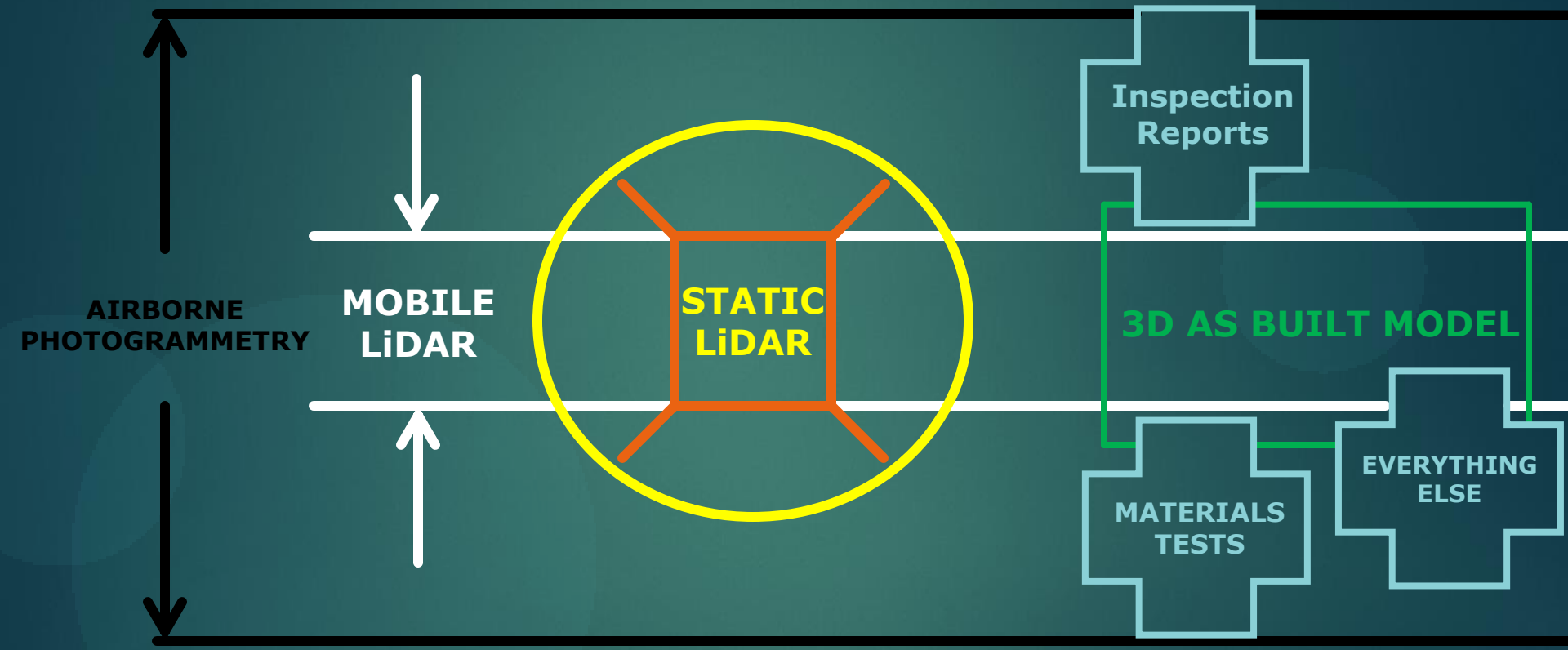
OREGON DOT's VIRTUAL CORRIDOR

Christopher Harris, P.E.
Construction Automation Engineer

CGSIC Meeting
September 25-26, 2017
Portland, OR

VIRTUAL CORRIDOR



Overlay/Link to Design & Construction Data

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The long and windy road to success

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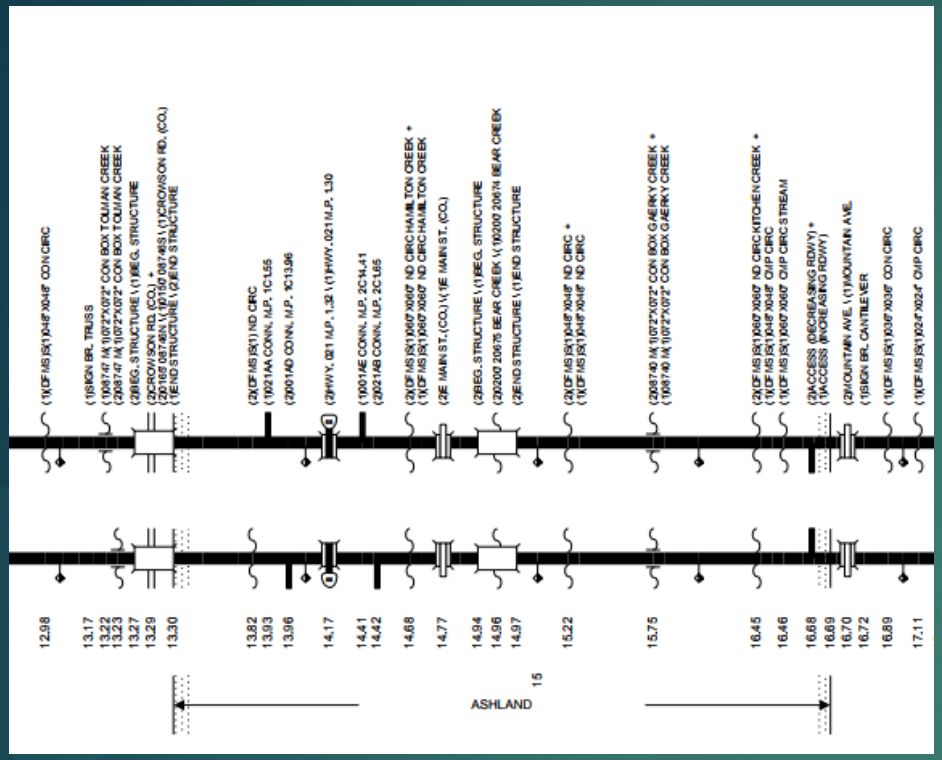
Linear Reference System



Geospatial Position

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Oregon Real-Time GNSS Network

ORGN Stations Legend

Ground Station Status

- GLONASS Station Active
- GLONASS Station Alert
- GLONASS Station Inactive
- GLONASS Station Planned
- Station Active
- Station Alert
- Station Inactive
- Station Planned

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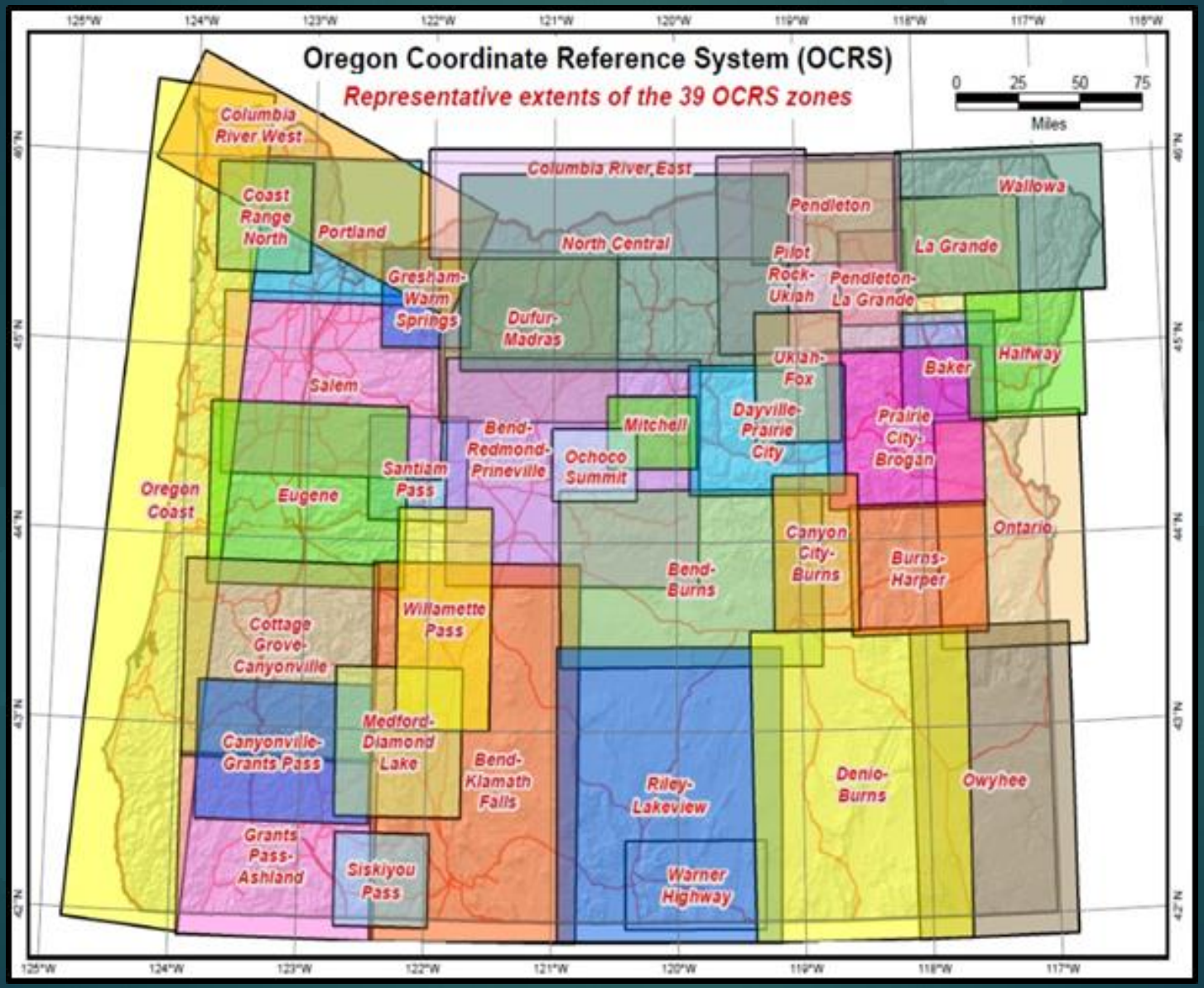
Oregon Coordinate Reference System



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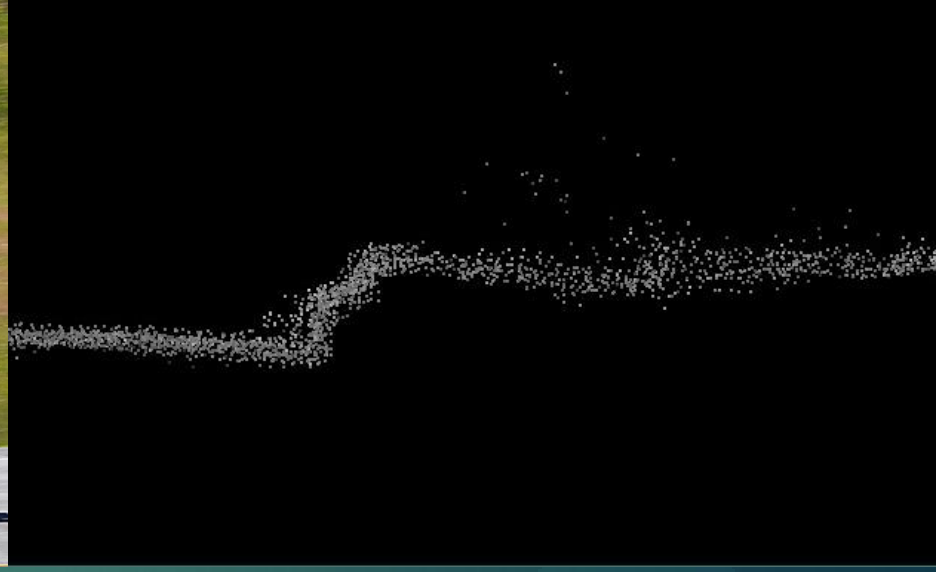
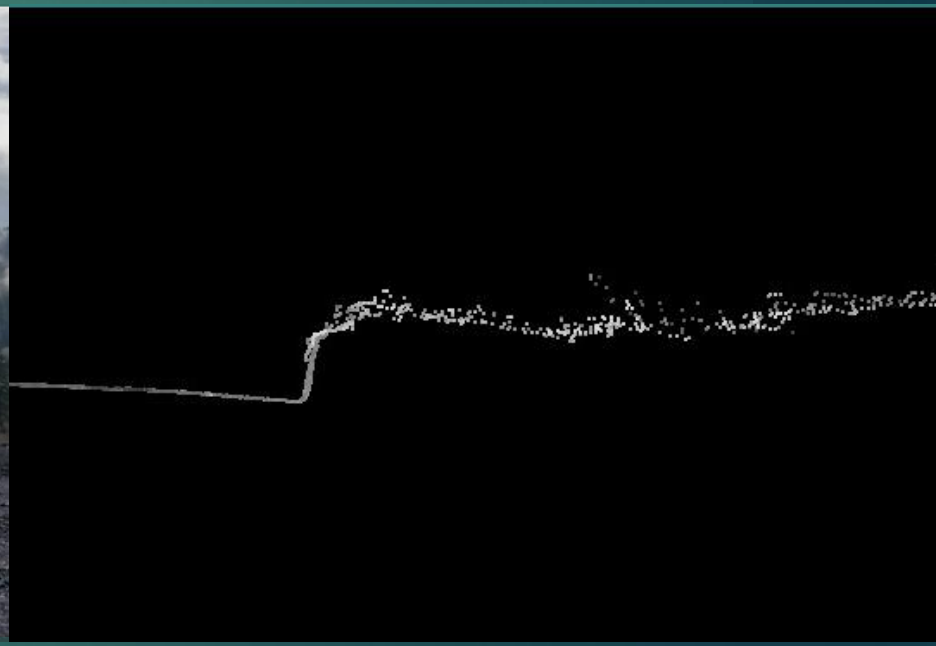
Topcon IP-S2



Leica Pegasus:Two



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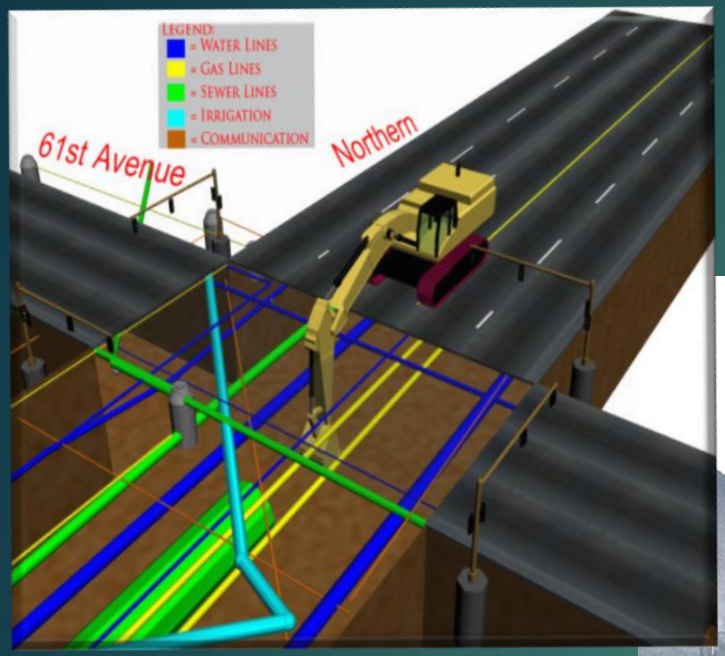
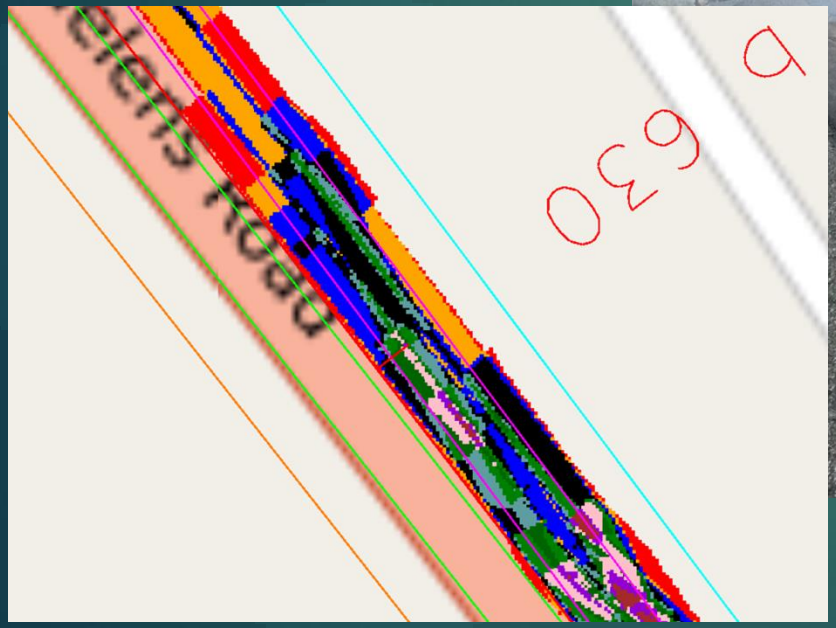
3D Design & SUE



eConstruction



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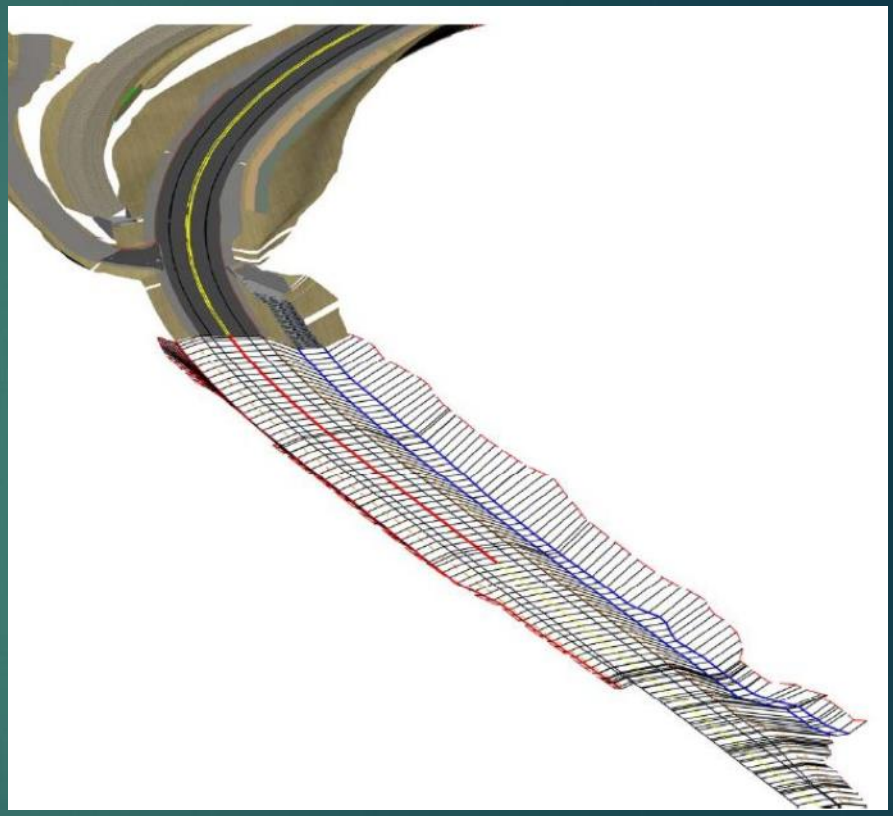
Intelligent Compaction

Point Cloud

3D Design



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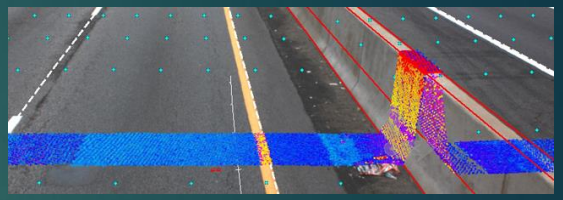
360° Images + Survey Grade 3D Point Cloud

Central Server

DTM & Asset Extraction in CAD



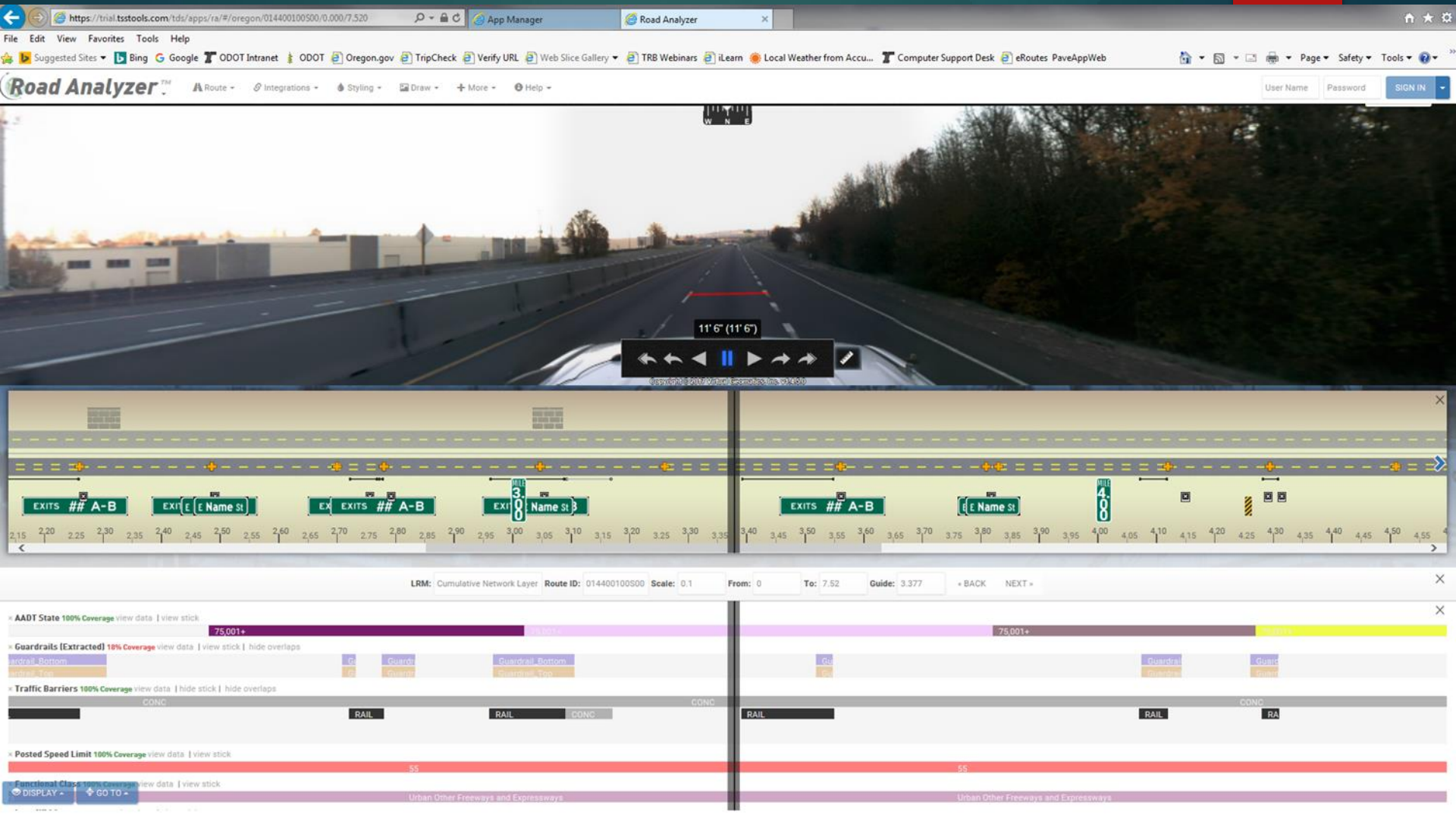
360° DVL + Accurate Measurement Tools

Highway Assets

Asset Databases

Virtual Highway

Proof of Concept



Transcend: Road Analyzer
Virtual Geomatics: Virtual Navigator

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AMG

Stakeless Inspection

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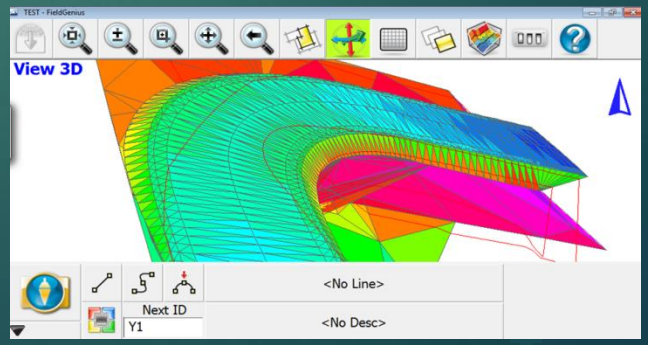
Inspector Positioning Tablet Hardware/Software Details

- DT Research DT391GS tablet
  - Hemisphere GNSS survey grade receiver
  - Windows 7 - Rugged
  - Internal cell modem - Camera
- MicroSurvey FieldGenius Software
  - Easy to use - Graphic interface
  - Connects to the Oregon Real Time Network
  - Import/Export options



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Inspector Positioning Tablet

- Rugged Tablet with built in GNSS antenna +/- 2cm accuracy
- Can be used "handheld" or with an external antenna and rod

- Software to display and use XML files for alignment, surface and design files

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http://www.oregon.gov/ODOT/ETA

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