Civil GPS Service Interface Committee

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U.S. State and Local Government Subcommittee

Ms. Karen Van Dyke on behalf of
Mr. James Arnold, U.S. Department of Transportation

25 September 2017

U.S. State and Local Government Subcommittee

09:00 **Introduction** – *Mr. James Arnold*
U.S. Department of Transportation

09:10 **Oregon Department of Transportation's Virtual Corridor** –
*Mr. Chris Harris, Engineering Technology Advancement
Group Oregon Department of Transportation*

09:30 **Boeing's Experimental Landing System at Moses Lake** –
*Mr. Roger Friedman, Senior Engineer
Boeing Company*

10:20 **Use of Precision GNSS in Large Scale Asset Management** –
*Mr. Mark Congdon, Regional Manager
Western Region, Hydromax USA*

10:20 **Break**

U.S. State and Local Government Subcommittee

10:50 **Standardization of GNSS Threat Reporting and Receiver Testing (STRIKE3 Project) –** *Mr. Mark Dumville*
General Manager, NSL

11:10 **Using GPS to Generate Forest Management Maps**
Mr. Jon Aschenbach
Summerlake Enterprises

11:30 **Group Discussion**

12:00 **Session End**

Oregon Department of Transportation's Virtual Corridor

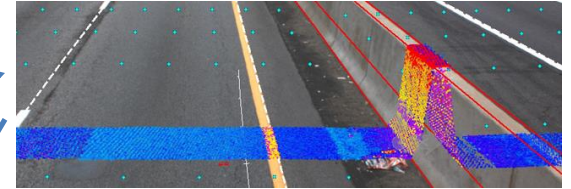360° Images + Survey Grade 3D Point Cloud

Central Server

DTM & Asset Extraction in CAD
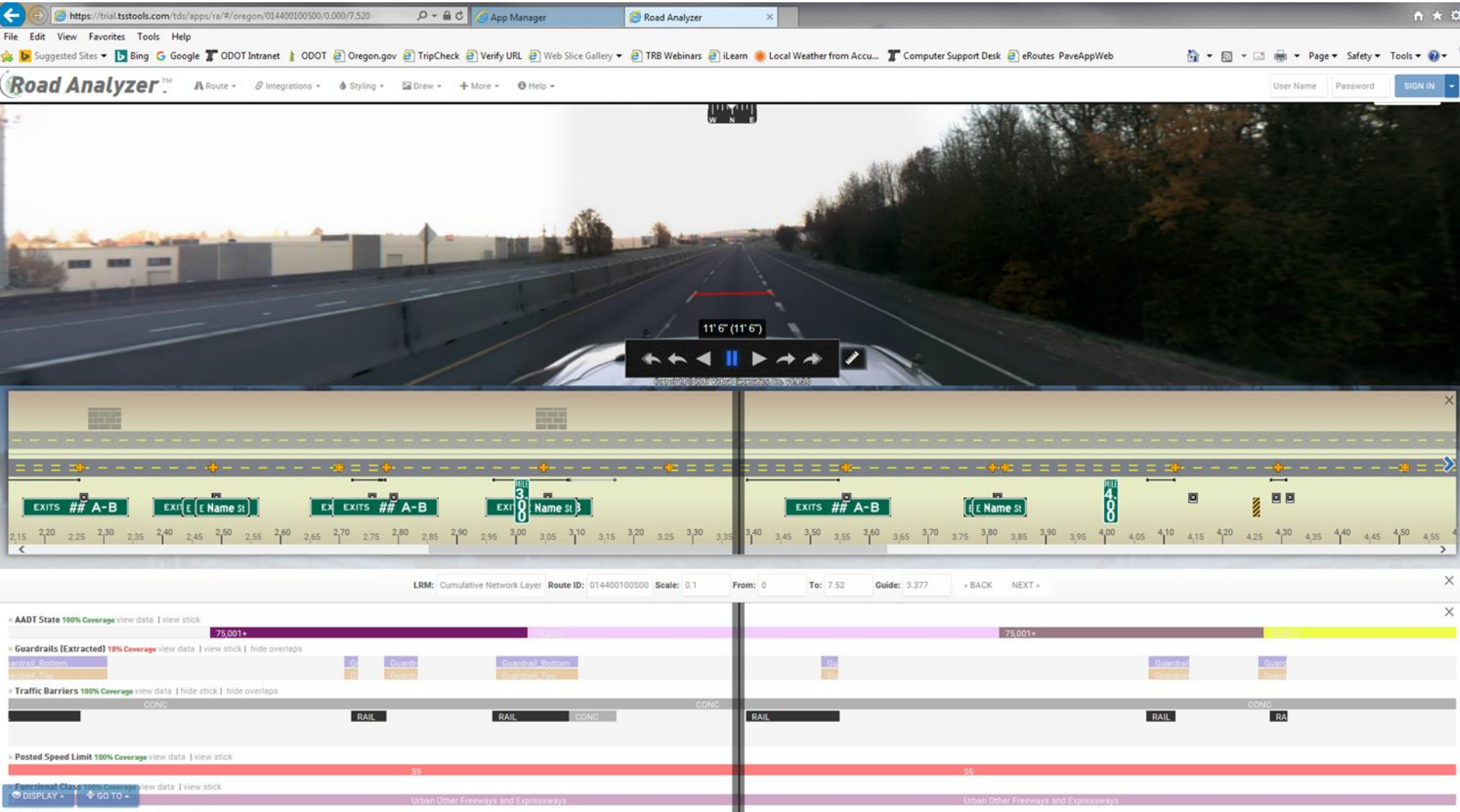

360° DVL + Accurate Measurement Tools

Highway Assets

Asset Databases

Virtual Highway

Proof of Concept

Transcend: Road Analyzer
Virtual Geomatics: Virtual Navigator

Runway 08 BJNU:
4 deg G/S 1000' Displaced Threshold

tower 584'

Problem #1: MISS Pedersen Hill!

Elevations enhanced x3

Image © 2008 TerraMetrics

STRIKE3 Global Monitoring Network

30+ monitoring sites

At a range of infrastructures

- Major City Centres
- City-ring roads
- National timing labs
- Motorways/Road network
- Airports
- GNSS infrastructures
- Power stations
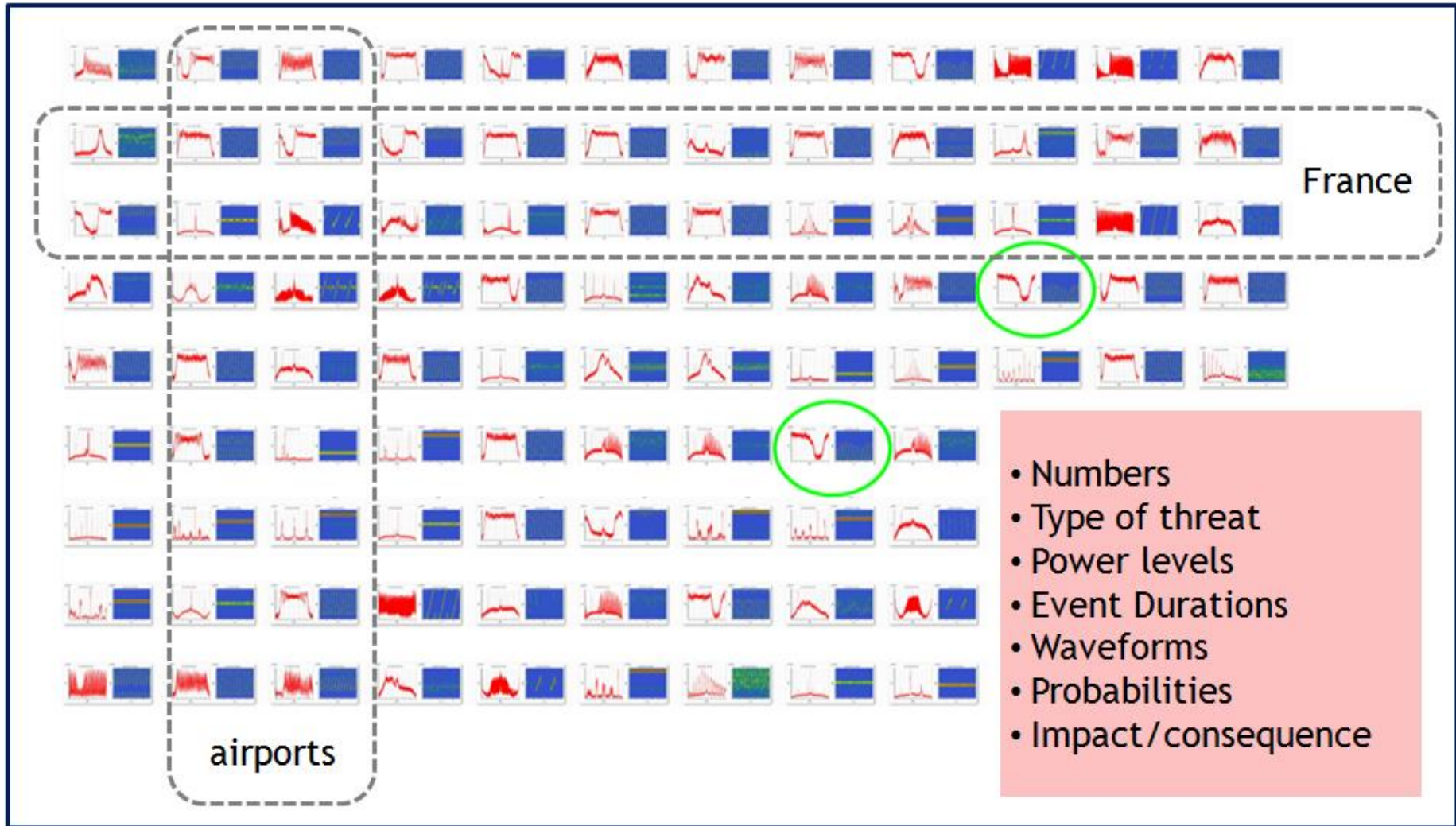- Railway
- EU Borders
- Ports

At a range of locations

- United Kingdom
- Sweden
- Finland
- Germany
- France
- Poland
- Czech Republic
- Spain
- Slovakia
- Slovenia
- Netherlands

- Belgium
- Croatia
- Latvia
- India
- Vietnam
- Thailand
- Malaysia
- New Zealand
- Canada
- Singapore (pending)

STRIKE3 "Database" [215,000 events]

France

airports

- Numbers
- Type of threat
- Power levels
- Event Durations
- Waveforms
- Probabilities
- Impact/consequence
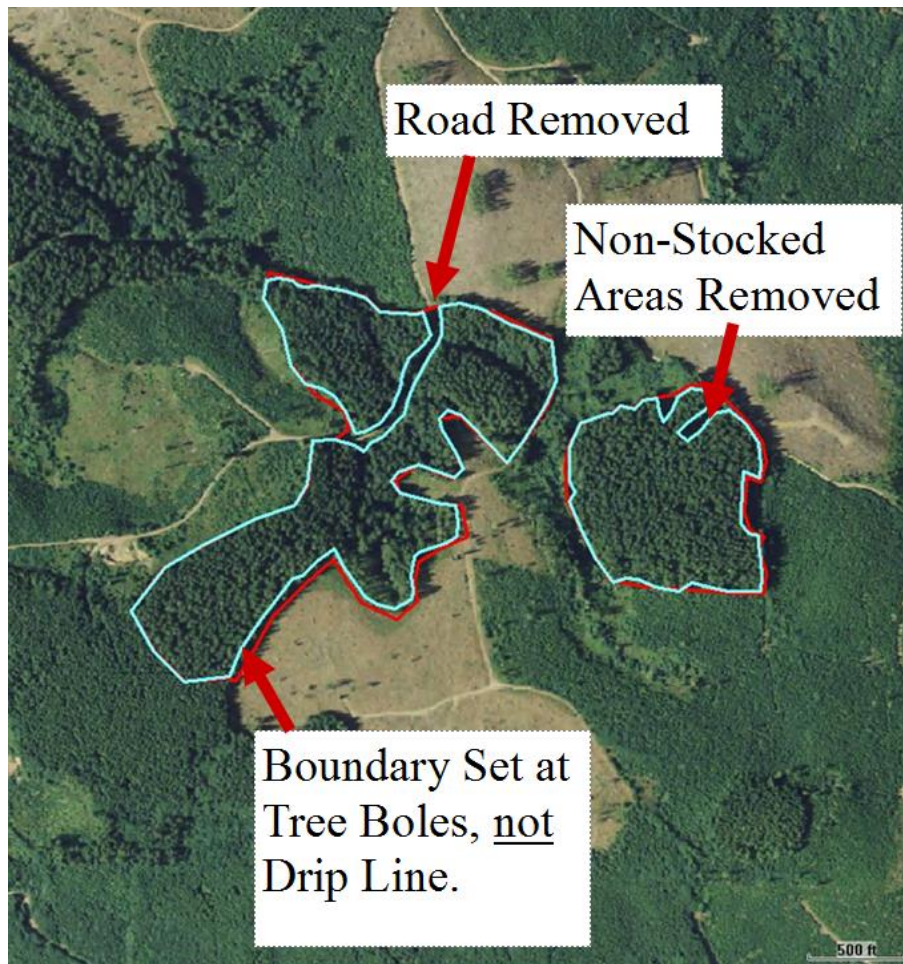
Start of project until 31/03/2017

Using GPS to Generate Forest Management Maps
Why Collecting GPS Data Is Hard:

- Tall trees (100' to 160') provide dense canopy cover

- Best timber grows in Canyon Bottoms (steep mountains)

- Brush and lower stand vegetation can block satellite signals

- Bid due date usually only 20 to 30 days out

- It is frequently raining (sometimes very hard)

- Limited Cell Phone Coverage precludes Real Time Corrections except for WAAS

Sellers Polygon - Buyers Polygon

Road Removed

Non-Stocked Areas Removed

Boundary Set at Tree Boles, not Drip Line.

Thank You