Overview of Telvent DTN
Transportation Industry Weather Capabilities

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Telvent Company Overview

- Agriculture
- Smart Grid
- Oil & Gas
- Global Services
- Trading
- Transportation
- Environment
Telvent DTN Company Overview

- **Telvent DTN** – Specialized, high accuracy weather solutions
  - Transportation
  - Energy
  - Aviation
  - Public Safety
  - Sports & Recreation

"Approximately 70% of US Energy companies use Telvent DTN load forecasts"
Clarus

- Telvent DTN is the largest operational user of Clarus data.
- We are actively engaged in evaluation of Clarus Quality Control checks and have provided operational feedback to the program.
## RWIS Error Reporting

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<th>Dew Point (°F)</th>
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<th>Vis (miles)</th>
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<th>Precip Intensity</th>
<th>Precipitation Type</th>
<th>Rate (in/hr)</th>
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Telvent DTN Forecast Process

Performance-based initial forecast

Meteorologist enhancement

WeatherSentry Online

- Human involvement adds expertise to forecast using GFE
- Focus where models do not perform well
Results - Precipitation Improvements

- Focus on areas where model does not perform well
- Forecaster-enhanced precipitation is 10-30% more accurate than raw model data
- Telvent DTN independently rated as producing the most accurate precipitation forecasts

Forecast Accuracy (%) vs. Event Duration (July - November 2009)

- Telvent DTN
- Model 1
Results – Pavement Forecast Improvements

- Multi year study across several states and provinces.
- Site specific algorithm resulted in 20% to 30% improvement in pavement forecast performance.
- Additional improvements shown in 2010-2011 winter season.
Forecast Performance – Alberta Transportation

- Performance-based contract driven by forecast accuracy (each increase in percentage equals $100K in maintenance savings)
- More stringent performance criteria near critical thresholds (0 degrees Celsius)
- Telvent DTN exceeded performance metrics set forth by customer for winter 2009-2010 and again in 2010-2011

**Forecast Accuracy (%)**

- November: 90.00%
- December: 80.00%
- January: 70.00%
- February: 90.00%
- March: 80.00%
- April: 60.00%
Impact Based Communications

- WeatherSentry Mobile
  - Weather where you are
- Meteorologist Consultation
  - Understanding of Regional Micro-Climates
  - Trends
  - Latest thinking
- Alerting
  - Online
  - Email
  - Text message

WINS Alert Detail

Message: For Home, latest observation from MINNEAPOLIS-LAKEVILLE shows rain in your area.

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<tr>
<th>Location</th>
<th>Event Type</th>
<th>Message Type</th>
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Google Maps Platform

“Open Platform”

- Hyper-local weather display
  - Atmospheric and pavement observations
  - State of the atmosphere for your area of interest
  - Street-level analysis

Lays the foundation for open systems, interoperability and global support.
Newest Version – Total View

RWIS
Troubleshoot and maintain RWIS network

Weather & Pavement Forecasts
Plan and position crews and materials to ensure proper level of service

Consultation
Make informed weather-critical decisions by asking your questions to a meteorologist

Cameras
Receive ground truth on pavement and traffic conditions

Traffic
More effectively dispatch crews to trouble spots and calculate performance and level of service metrics

Telvent Total View
A single source for integrated environmental decisions

Key Customer Benefit
Provides customer with single decision support system from which to make weather-critical decisions and save time, money and lives.
Contact

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Steve.draginis@telventdt.com
Thank You