Road Weather Decision Support Systems

Leveraging the Federal Prototype MDSS and *Clarus*

Kevin R. Petty, Ph.D.
Offering Manager – Roads – Decision Support Systems
Vaisala in Brief

- Net Sales of over $350M in over 120 countries
- Roughly $35M/year invested in R&D
Vaisala in Brief

- Solutions for environmentally critical operations
  - Aviation solutions
  - Traffic solutions
  - Defense
  - Wind Energy
  - Meteorological and hydrological solutions
July ‘09 Announcement Concerning Decision Support Systems (DSS)

- Vaisala to launch Road Weather Decision Support System technologies

  “Vaisala is investing in the next innovation of the Maintenance Decision Support System (MDSS) and expanding its portfolio in the surface transportation market by adding Road Weather Decision Support Systems (RWDSS)”

  “Vaisala is leveraging the Federal Prototype MDSS, which was developed with support from the United States Federal Highway Administration’s (FHWA) Road Weather Management Program.”

- Full Service Road Weather Provider
  - Sensing Platform and Instruments
  - Data Management
    - Data Acquisition, Storage, Quality Control, Access
  - Decision Support Systems
    - Real Time Data, Forecasting, Industry Practices, Unique Models
  - Consulting Services
  - Field Services
Vaisala RWDSS

Inputs
- Publicly Available Data and Products
- Vaisala Data and Products
- Clarus Data*
- Agency/Operation-specific Data (e.g., Highway Authority)

Pre-Processing
- Vaisala Central Data Processor Server System

Application Processing
- Winter Maintenance
- Non-winter Maintenance DSS
- Traffic Management
- Other

Distribution
- Central Operations
- Field Operations
- Handheld Devices
- In-vehicle Systems
- Integration with Existing Systems (e.g., Advanced Traveler Information Systems)
Vaisala Roads DSS Strategy

- Federal Prototype MDSS
- Vaisala-specific technologies
- Partnerships with key customers
- Novel Visualization Approaches
Next Generation Roads DSS
(Federal Prototype MDSS)

- Operational DSS based on the FP MDSS
- Gap analysis
- Lessons learned
- Theories and strategies
- Utilization of key FP MDSS algorithms
Next Generation Roads DSS
(Vaisala-specific technologies)

- Instrumentation
  - Conventional RWIS sensors
  - Emerging non-invasive sensors
- Road Temperature/Condition Modeling
- IceMan
- Thermal Mapping
- Route Optimization
- Lightning detection
- Weather Critical Operations advancements (e.g., Airports, Defense, Wind, etc.)
Next Generation Roads DSS (Partnerships)

- During the next year Vaisala will be partnering with a limited number of roadway management organizations
- Global partners
- Facilitate focused development
- Facilitate regional knowledge and technology transfer