Advanced Road Weather and Maintenance Information System in the Czech Republic

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Introducing METIS

- Modular full-featured RWIS (incl. MDSS) & MIS
  - Decision-making
  - Maintenance management
- Developed by CROSS Zlín and used in the Czech Republic since 2003
- Czech national RWIS
  - 600 road weather stations, 500 cameras
- Flexible and open platform
The main advantage

Concentrates all weather-related data and information into a single application so that the maintenance dispatcher has everything at fingertips.
Key modules

Systems for monitoring and predicting road weather and multi-level options for intelligent winter road maintenance management

CrossMet V4 datalogger

METIS road weather information system

SSWM maintenance decision support system

WMi maintenance evaluation and cost analysis
Road weather information system
**METIS CORE**

- Cloud solution with web-based access
- Interactive presentation using maps, images, animations, tables, and graphs
- SMS / e-mail warnings
- User settings
- Mobile app for Android and iOS
STATUS MAP

- Map based presentation of weather station network
- Visualization in layers – warning, road condition, road temperature, cameras etc.
- Radar and satellite images
STATIONS

- List of stations and their measured data
- Custom definition of favourite stations
- Tables, graphs
- History and forecast graphs
- Camera images
- Metadata
CAMERAS

- Real view of the road and current condition
- Custom definition of favourite cameras
- Hourly image previews
- Access to image history
RADAR

- Radar (precipitation) images
- Satellite (cloud cover) images
- Interactive animations
- Unique forecast radar
- Weather prediction model
FORECASTS

- General and regional
- Short-term and middle-term
- Special forecasts for winter maintenance
Maintenance decision support system
ROAD SURFACE FORECAST

- Based on SSWM model by CROSS and Klimator
- Using ALADIN prediction model in CZE
- Using thermal mapping
- Spatial modelling for 1km segments
- RST and road condition for next 12 hours
- Enabling selective maintenance
TREATMENT RECOMMENDATION

- Based on SSWM line forecast
- Aggregated for maintenance areas
- Chemical treatment (incl. salt dosage) and ploughing for next 12 hours
- Meteogram
- Road condition diagram
MIDDLE-TERM FORECAST

- Middle-term forecast of possible winter maintenance activity
- Degree of readiness
- Planning number of dispatchers and staff
Maintenance information system

Including vehicle tracking
VEHICLE TRACKING

- GPS tracking of location and activity
- Spreading trucks, inspection cars
- Central database
- Map application – tool for decision-making and for supervision
- Base for maintenance reporting
REPORTING AND INVOICING

- Manual and automatic based on GPS data
- Automatic validation
- Corrections and closing of records
- Automatic invoicing module
MAINTENANCE EVALUATION

- Evaluation of maintenance adequacy using Winter Maintenance Index by CROSS and CHMI
- Analysing recorded weather conditions (evaluating winter severity)
- Defining expected (standard) level of maintenance
- Detecting deviations from standard
- Correction tool for invoicing
Conclusion

- Complex, yet easy to use with very positive feedback
- Developed in CZE, but open to the world
- Ready to show live on our stand

Support the right decisions
Increase safety on roads
Optimize maintenance costs
THE WEATHER CANNOT STOP YOU