Cost effective monitoring of RWIS

Communication and maintenance

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or

how we at the same time

- reduced the transmission costs with 55 %
- reduced data collection duration with 70 %
- improved reaction time on communication incidents
Overview

- Organization of RWIS
- Technical structure of RWIS
- Communication in RWIS
- Summary
- Future development
Organization of RWIS

- 320 measuring stations
  - 150 owned by municipalities
  - 150 owned by The Danish Road Directorate
  - 20 owned by other road authorities
Organization of RWIS

• 320 measuring stations
• 100 % Internet connections
• 1 system database with observations and prognoses
• 1 back-up database for observations
• 1 web/java based presentation software
Technical structure of RWIS

- **Observations and prognoses**
  - DMI (Danish Meteorological Institute)

- **RWIS stations**
  - Approx. 320

- **Internet**

- **Local RWIS user**

- **Backup server for RWIS station data (5 min.)**

- **Backup server for RWIS station data (5 min.)**

- **DMI collect data from all RWIS stations every 5 min.**

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Communication in RWIS

• Samples of installations
  – Wireless low power installation
Communication in RWIS

- Samples of installations
  - Redundant installation
Communication in RWIS

- Video at measuring stations
  - WEBCAM for snow observations
  - PTZ cam for traffic observations
Communication in RWIS

- Tools for service and maintenance
  - GateManager
  - Webcam monitoring
Summary

- Improved data collection duration
  - 7 minutes → 2 minutes for 320 stations
- Economic savings for transmission
  - 1850 € → 815 € per station per year
- Better tools for maintenance
  - Automatic information on events, e.g. e-mails to service center
Future development

• Next challenges
  – Proactive failure service of measuring stations via GateManager
  – Increase system up time by statistics on failure events