

Planning, development and implementation of a Mobile Winter Maintenance Centre

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Overview

- Winter maintenance in City of Copenhagen
- Advantages from a mobile winter maintenance centre
- Available functions in the mobile centre
- Implementation plan

Winter maintenance in City of Copenhagen

- 550 km of streets
- 350 km of cycle lanes
- Winter Maintenance centre
- Tools
 - VejVejr (Road Weather)
 - Vinterman
 - Manual observations
- Limitations
 - Quality control
 - Physical flexibility



Purpose of the Mobile Winter Maintenance Centre

- The maintenance operator can be on the spot in critical situations, and make decisions based on objective measurements
- Repeated logging of pavement surface condition from specific salting routes will give indication of how decomposition of de-icing material is progressing
- Documentation for the surface state is created automatically

Design criteria's for mobile winter maintenance centre

- Same tools available as in existing maintenance centre
- Capability of measuring pavement surface state
- Perform quality control of winter maintenance

Software tools in the Mobile Winter Maintenance Centre

- VejVejr
- Vinterman
- Software for immediate presentation of pavements surface condition
- Software for transmission of surface condition data to Vinterman

Measuring system

- The measuring system shall be able to measure
 - Surface temperature
 - Surface condition
 - Surface grip data
 - Position for measured values.
- All measured data shall continuously be transmitted to Vinterman

Measuring system

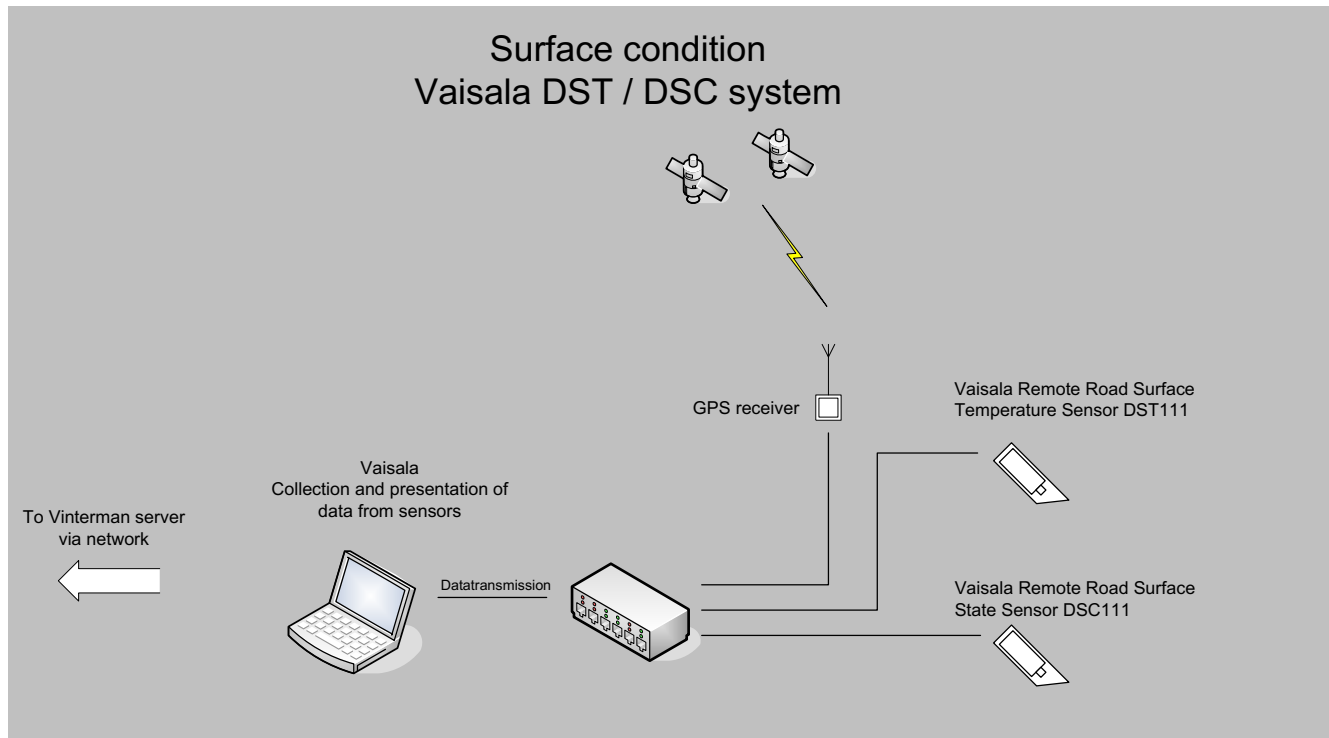
Initial choice for the measuring system is

Vaisala surface state kit including DSC111 and DST111

and

A dedicated communication program for delivering surface data to the Vinterman server

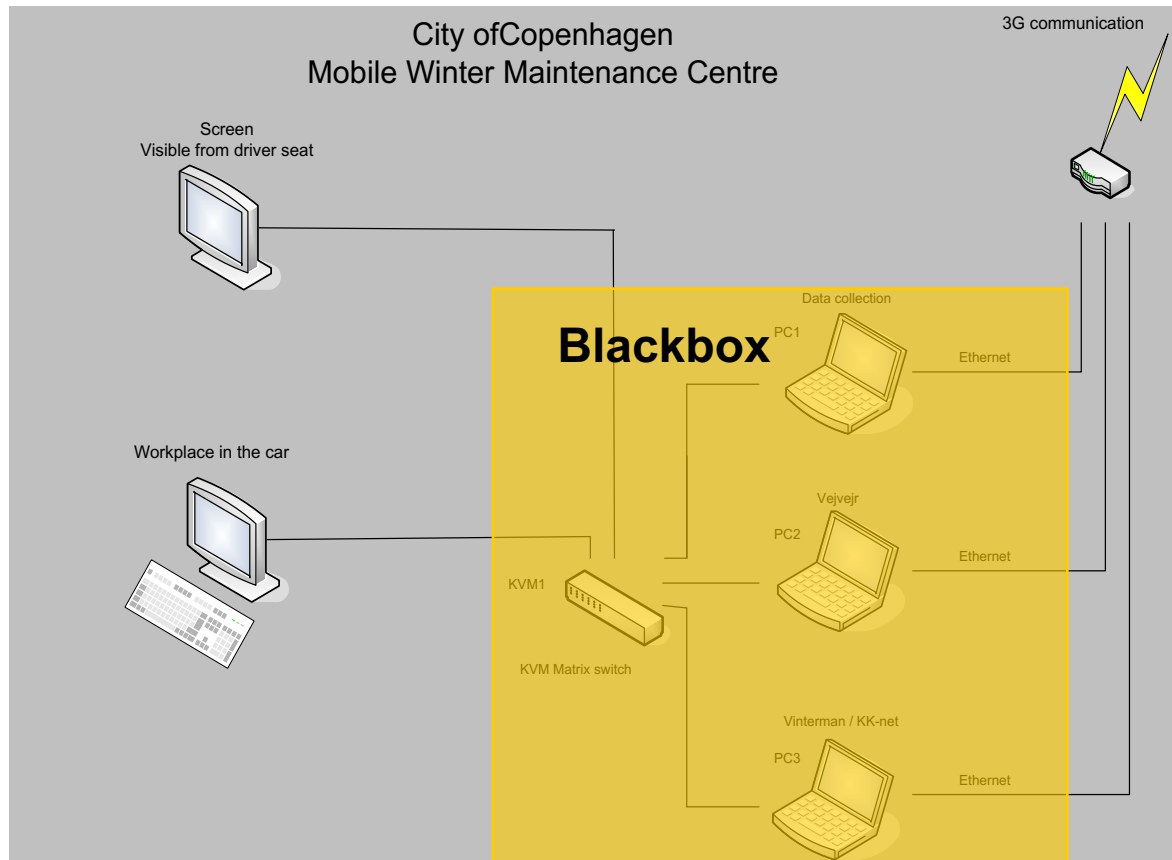
Measuring system



Communication system

- It shall be possible to receive observations and forecasts in VejVejr
- It shall be possible to receive and transmit management information in Vinterman
- It shall be possible to transmit surface state data to Vinterman server

Communication system



Benefits

- The maintenance operator can be on the spot in critical situations, and make decisions based on objective measurements
- Repeated logging of grip data from specific salting routes will give indication of how decomposition of de-icing material is progressing
- Documentation for the surface state is created automatically in Vinterman

Implementation plan

- At this moment City of Copenhagen are making a decision about type and manufacturer of the vehicle
- It is planned that installation of sensors and PC-equipment shall take place before summer holidays this year
- Training and reference measurements shall take place until 1. of October
- The Mobile Winter Management Centre shall be in regular service from start of winter 2010-2011