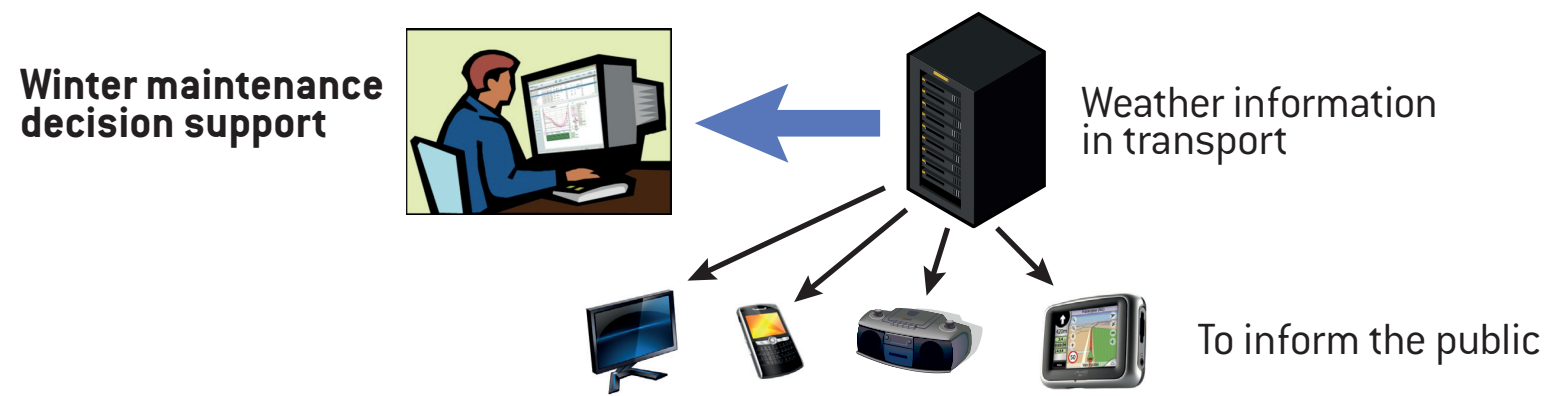
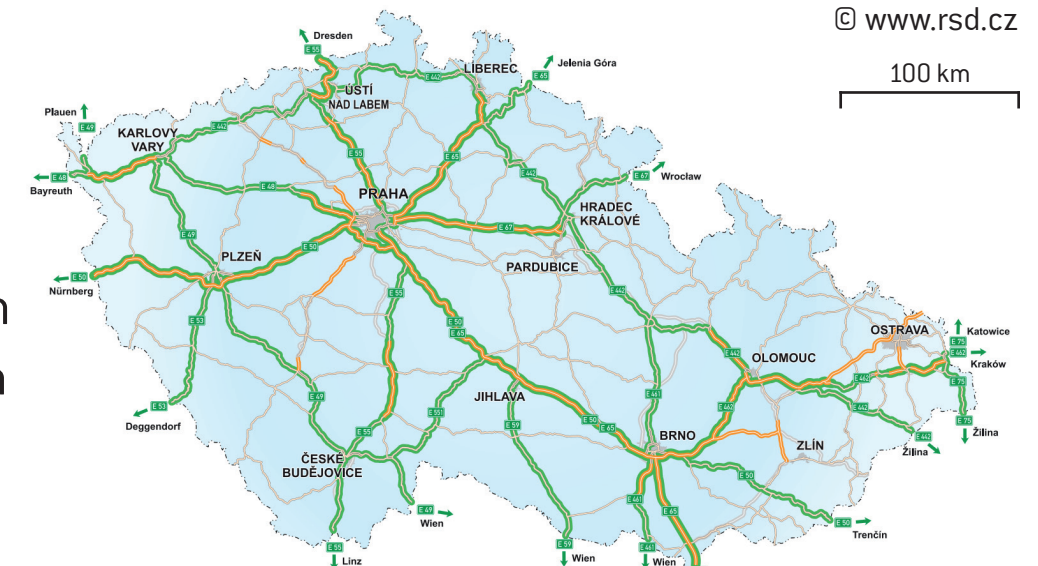


Weather information in transportation



Road network of Czechia

Highways	776 km
Expressways	442 km
Class I roads	5798 km
Class II roads	14558 km
Class III roads	34167 km
Road weather stations	420
Maintenance centres for highways	18
Maintenance centres for class I roads	97

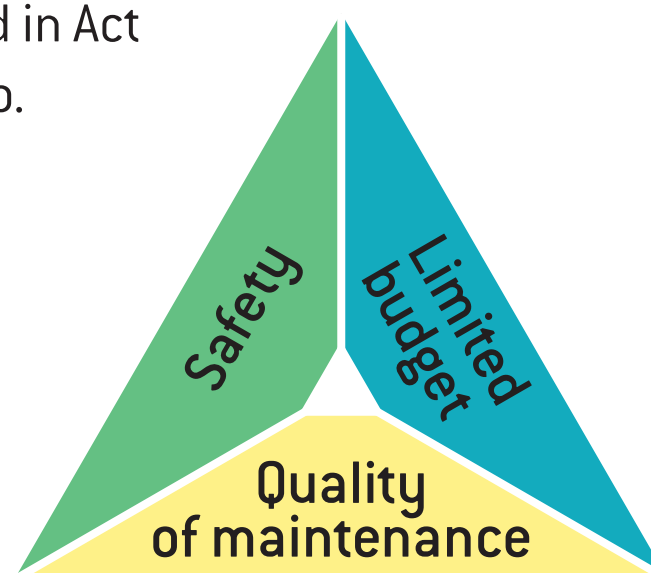


Standardization of winter maintenance

The legislative framework for winter road maintenance is stipulated in Act No. 13/1997 Coll., on roads, and the Ministry of Transport Decree No. 104/1997 Coll., implementing above stated Act on roads.

New financial model is tested:

Old model – 6 EUR per km
New model – monthly fee + 2 EUR per km



The operational plan is a fundamental document describing how the winter maintenance will look like in a specific area. It contains all the information about the dispatching centre, vehicles, key persons, the system of maintenance, available technologies, setting of maintenance circuits, etc.

Control measures to better know how the winter maintenance is done and who/where/when/why generates the deviations from standard.

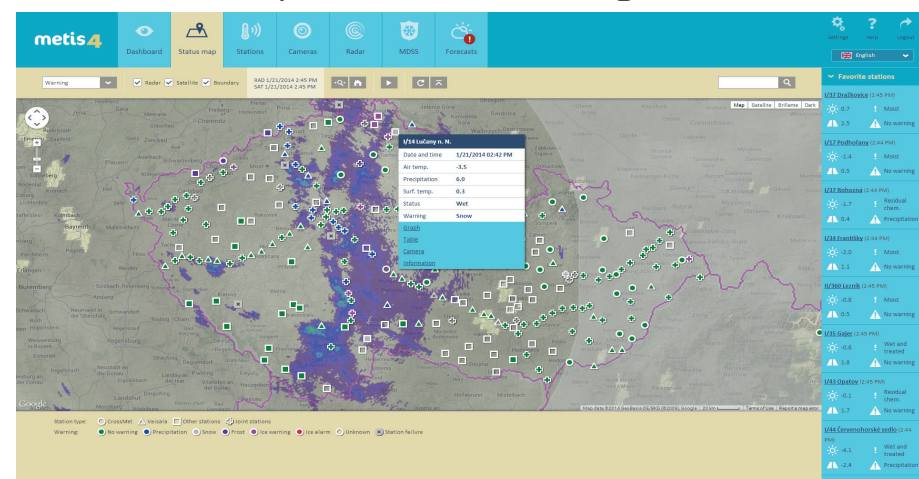
- GPS-based activity tracking of spreaders
- Weekly adequacy check using Winter maintenance index
- Occasional local inspections

Maintenance decision support

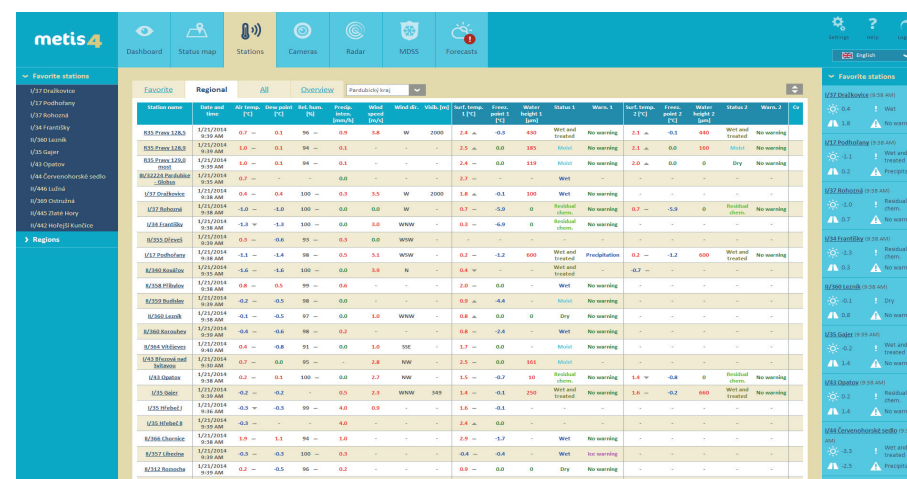
METIS is a nationwide road weather information system since 2003. It provides the dispatchers with the real time data from weather stations as well as with the road weather forecast (using SSWM model) and other weather information sources. In short future it will feature also a treatment recommendation module to fully support the decision making.



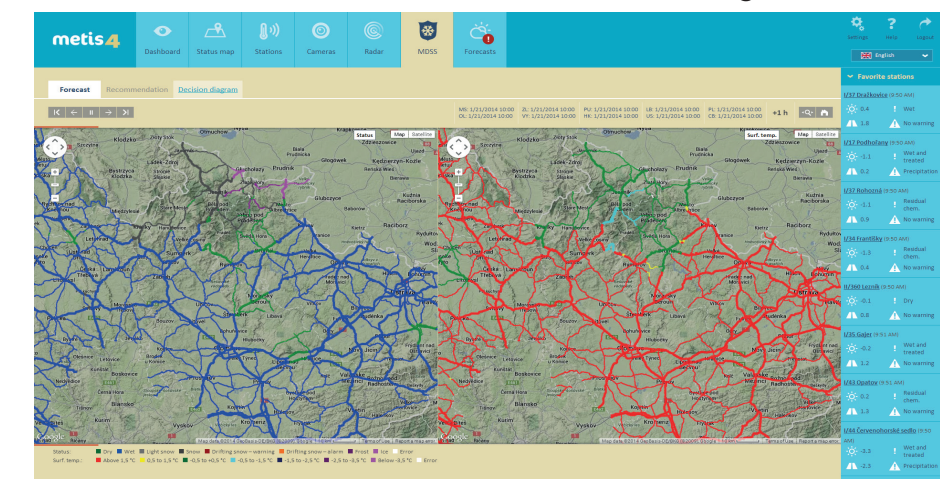
Interactive map of station warning



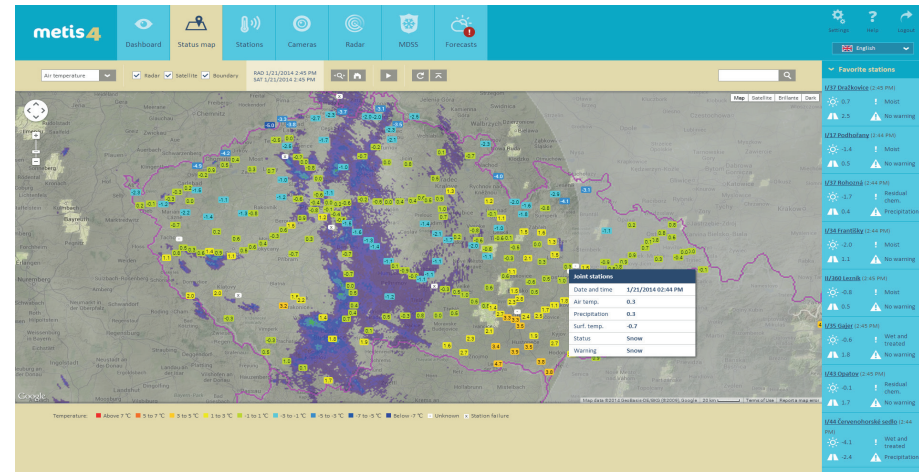
List of favourite road weather stations



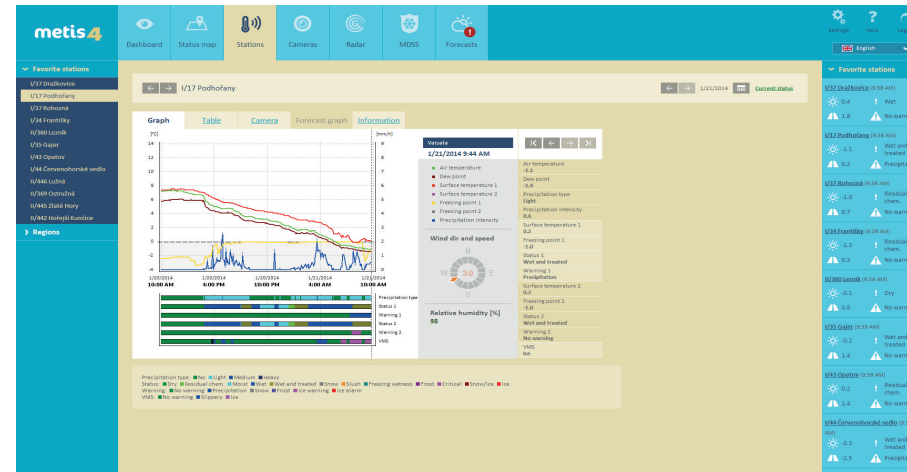
Road surface forecast with SSWM hour by hour



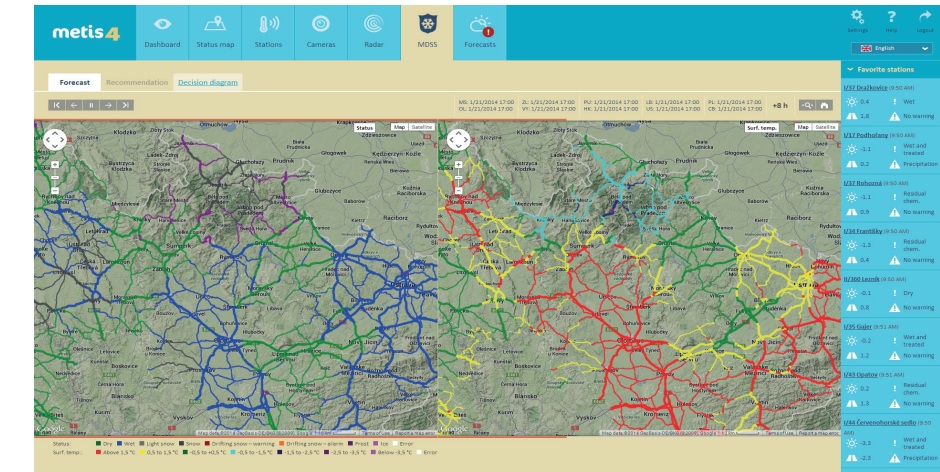
Interactive map of air temperature



Road weather station in detail



Road surface forecast with SSWM hour by hour

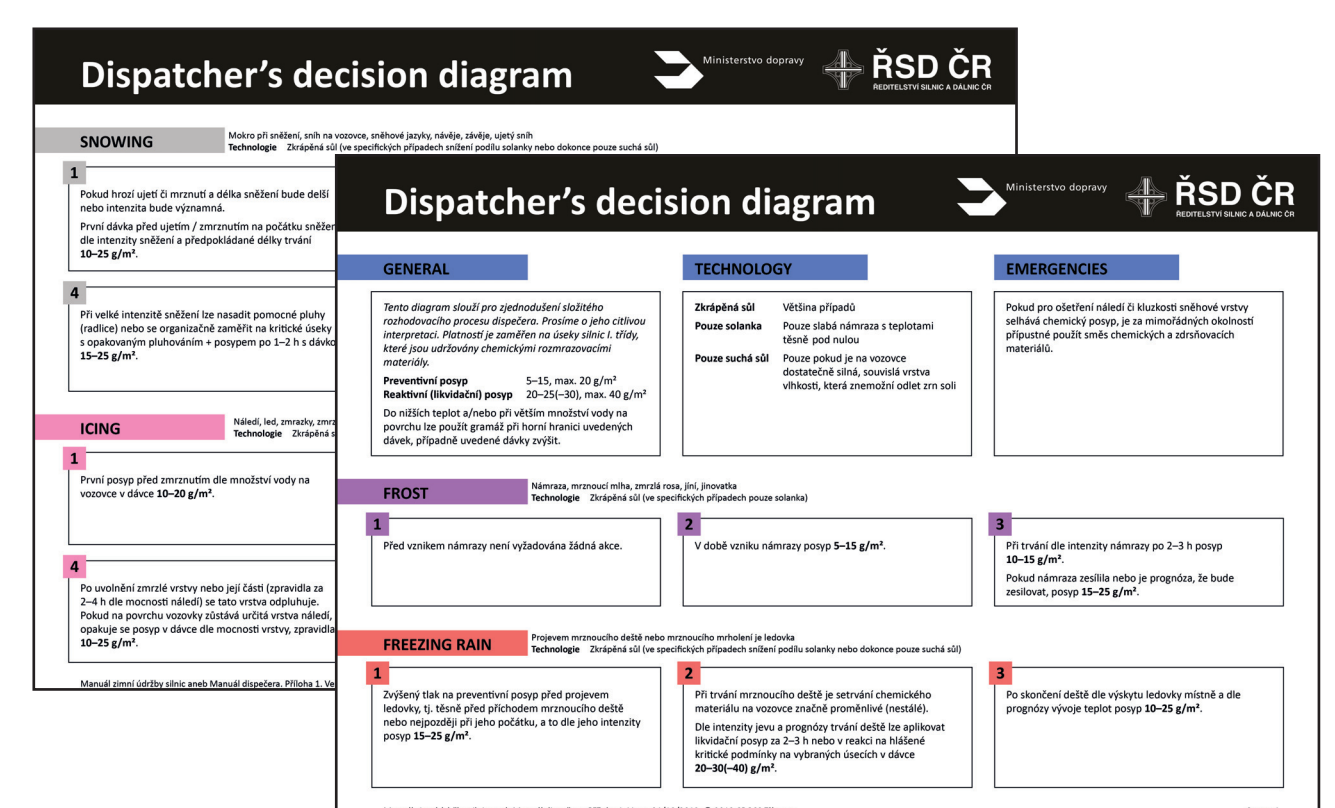


WM operators training

The dispatcher is a key person in the management of maintenance operations.

Annual training:

- Basics of road meteorology
- Hazardous weather phenomena for winter road maintenance
- Road weather stations and data interpretation
- Interpretation of other weather information sources
- Winter maintenance manual
- Best available technologies
- Dispatcher's decision diagram



About the company

CROSS Zlín is a joint-stock company based in the Czech Republic. CROSS is proud to be technology company, offering wide range of products, components and turn-key solutions for road traffic since 1994.

- Road Weather and Winter Maintenance
- Traffic Control and Data Fusion
- Weigh-in-Motion
- Traffic Detection
- Parking Systems
- Payment Systems

About the author

David KONEČNÝ has studied geoinformatics, cartography and geography at Palacký University in Olomouc and graduated in 2008. From this time, he works in CROSS Zlín as a software engineer and analyst. David is experienced in road weather and winter road maintenance decision support which is the main part of his work. For his versatility, he participates in hardware projects, software development and recently also in a standardization of the winter road maintenance on the countrywide level.



We believe that through the assessment of the adequacy and usage of RWIS and MDSS systems it is possible to optimize the winter maintenance and reduce its overall costs while maintaining quality.

Key players in WM decision support

Ministry of Transport of the Czech Republic, www.mdcr.cz
Road and Motorway Directorate of the Czech Republic, www.rsd.cz
Czech Hydrometeorological Institute, www.chmi.cz
CROSS Zlín, www.cross.cz
Klimator, www.klimator.se