

# Better products and services for winter maintenance and traffic safety

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VTT Technical Research Centre of Finland has participated as a research partner in a project in which Finnish companies have developed increasingly better road weather and winter maintenance services, and combined them into product and service packages. Consequently, information is available on wintry road conditions and changing weather that is more accurate, up-to-date and comprehensive than ever before. The new services are applicable in any country struggling with winter, including Northern Europe, North America and Russia.

Slipperiness is estimated to play a partial role in 20-25% of all road traffic accidents in Finland. The damage from such accidents is substantial, making investment in their prevention highly worthwhile. Investments in winter maintenance and road weather systems will pay for themselves many times over, once the systems are in place and the services distributed effectively.. Advanced services make it possible to both cut the number of accidents and optimise winter maintenance.

Finland's northern location with its challenging weather conditions has provided a needs-based foundation for robust knowhow regarding road weather and winter maintenance. The FIRWE project has developed new services for road weather, measurement technology, and winter maintenance that can be combined into a compatible, modular set of products and services. This includes road condition measurement solutions, integration of the data collection systems of road maintenance units with weather and road condition services, and new functionality of the decision-making system with regard to the winter maintenance of

roads.

Concrete results to date include a method for longer-term road weather forecasts developed during the project, an optimisation algorithm modelling the effects of different road conditions and maintenance activities, a reporting service for the utilisation of data automatically collected from road maintenance vehicles, and advanced user interfaces for presenting the road condition and friction data collected using mobile measurement devices. The technology and service components developed by the FIRWE project have been tested and utilised not only in Finland, but also in Russia, the UK and the USA as part of company-specific pilot projects.

More extensive piloting will be carried out in co-operation with Destia, another Finnish maintenance contractor. In the pilot, VTT is responsible for the impact and outcomes assessment of the new technologies, and tests the slipperiness detection method based on data automatically collected from vehicles, which it has developed.

Although the system as a whole focuses on supporting decision-making as regards winter maintenance, the new services will also enable the provision of more accurate [road](#) condition and forecast information directly to consumers.

Provided by VTT Technical Research Centre of Finland

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