



Road Inspectorate for the Canton of Lucerne: Safely through the winter

The Road Inspectorate in the Canton of Lucerne is responsible for the traffic and maintenance on the roads there and, jointly with zentras, for the national road network in the central Swiss cantons Lucerne, Nidwalden, Obwalden and Zug. Its duties include snow and ice clearing services. Ergon's web-based management system WiMS helps winter service providers with planning, implementation and documentation of their actions.

As well as general forecasts by the Meteo Group, the Canton of Lucerne and zentras have for many years access to a network of almost 80 climate and weather stations. Via sensors built into the road surface, it is also possible to obtain information about the temperature at ground level and about the amount of salt remaining on the road. Along with other data, it allows thermal mapping, a graphical representation of road surface temperature.

This data is collected together in the WiMS and visualised so that risks such as black ice, freezing melt water or compacted snow can be accurately predicted and countermeasures put in place quickly and in good time. As well as this real-time weather data, images from cameras at more than 40 locations in the area also provide important information.

«The web solution developed by Ergon has met all our expectations. We now have a system for snow and ice clearing services which meets the highest standards and is extremely important for our day-to-day work. It has equipped us very well to deal with winter conditions.»

Markus Müller
Head of Road Inspectorate for the Canton of Lucerne

Operations management

Using WiMS, winter services managers are easily able to plan, initiate, monitor and control all the snow and ice clearing operations. Because WiMS offers ideal support, just two people at any one time are required to oversee a network of almost 60 gritting routes, even when the weather is bad. It is possible to mobilise any number of gritting vehicles with only a couple of clicks; all the relevant information is preconfigured or quickly updated and sent on by the operations manager who can see at a glance on the graphic where teams are deployed and can call up details on the status of each one.

Monitoring and reporting

Even after winter, WiMS provides an important service: at the touch of a button, the operations manager can obtain analyses from the system, such as the number of gritting runs, the quantity of grit used, distances travelled, the number of days and routes.

The network solution

The WiMS web solution which was introduced in 2017 is a replacement for the Java Rich Client which Ergon had developed years previously; at the same time, large parts of the back-end were updated and enhanced. The winter operations manager's work can now be carried out from a home office or any other browser. Furthermore, WiMS can easily be made available to any other organisation interested in gritting services (canton police force, canton authorities, ASTRA etc). Ergon's web application firewall Airlock can be used in addition to the safety measures required by the data processing services in Lucerne to protect the system on the web.

User-centred design

Before the new development work was undertaken, a detailed investigation was conducted with users on their premises in order to understand their work practices, their procedures and also any problems with the old system. For example, it revealed that the existing personalisation options were counter-productive. The winter services managers had set up different colours for weather parameters so that reference could not be made to the «yellow curve» (by default the air temperature, but not used by all the winter operations managers). This led to problems particularly when images were archived or accidents reported.

WiMS for other areas

The new architecture and the product-based thinking applied in developing WiMS now allows it to be used by other customers. Configuration is simple and where necessary specific development work can be undertaken. For example, from the winter season 2018/2019 WiMS will be deployed productively at the Office for the National Road Network in the canton of Uri.

In 2018 WiMS won a silver medal in the «Technology» category at the Best of Swiss Web Awards.

About Ergon

Ergon Informatik AG is a leading developer of bespoke software solutions and software products in Switzerland. We employ highly qualified IT specialists who are committed to creating value for the client, anticipating technological trends and designing solutions that generate competitive advantage. Our 280-strong company was founded in 1984.