

# Getting through the winter safely

The Canton of Lucerne's Road Inspection Office looks after the operation and maintenance of the canton's roads and streets, and has joint responsibility with zentras for national highways in the Central Switzerland cantons of Lucerne, Nidwalden, Obwalden and Zug – including during the snowy winter months. Ergon's WiMS management system supports those charged with coordinating the winter road-clearing services in planning, implementing and documenting the measures undertaken.

## Information gathering

In addition to the general weather forecasts supplied by Meteogroup, the Canton of Lucerne/zentras have also had a network of weather and climate stations of their own for a number of years now. These supply data about weather parameters such as temperature, humidity, precipitation, visibility and wind, while measurement sensors built directly into the road coating are also able to deliver data indicating road surface temperature and salt residues. These are combined with other data to enable "thermal mapping", a graphical display of the roads and streets' surface temperature. The data are collated and visualised in the WiMS system, ensuring that risks such as black ice, meltwater or frost accumulation can be precisely predicted and rapidly mitigated.

## Operations management

WiMS allows operations managers to plan, execute, monitor and control all activity efficiently. He or she can see all the tasks currently underway at a glance and retrieve details of the status of each individual job. Communications between drivers and managers are also routed via the system: if there are any queries about the task in hand, the driver will be connected directly to the appropriate operations manager. Automated job resolution simplifies quality control and requires the operations manager to step in only when the time or resource parameters allotted to the job (e.g. distance driven or the amount of salt used) are excessive; the task is otherwise automatically checked off as successfully completed.

## Controlling and reporting

WiMS also provides crucial services once a job has been concluded. At the touch of a button, the operations manager can call up job evaluations from the system (e.g. number of operations, quantities of grit and salt used, distance travelled, number of days and roads, etc.) This ensures that the official responsible has quick and easy access to the data required for their own report-writing or for third parties, and can pass on mandatory data to the

Federal Roads Office (ASTRA). If enquiries about accident reports arise or a complaint is made to the winter services team, here too, the data captured can be easily used to check what actually occurred.

## The solution can be shared

The options available to modern technology mean that WiMS can be further developed as a web solution, and this simplifies the job of winter services managers still further – they can use a browser to access the system from the road or their home office. WiMS can thus also be made available to other winter road maintenance services.

To ensure that the security of the system is maintained even on the web, Ergon's Airlock firewall web app is used in addition to the security measures specified by Lucerne's IT services department.



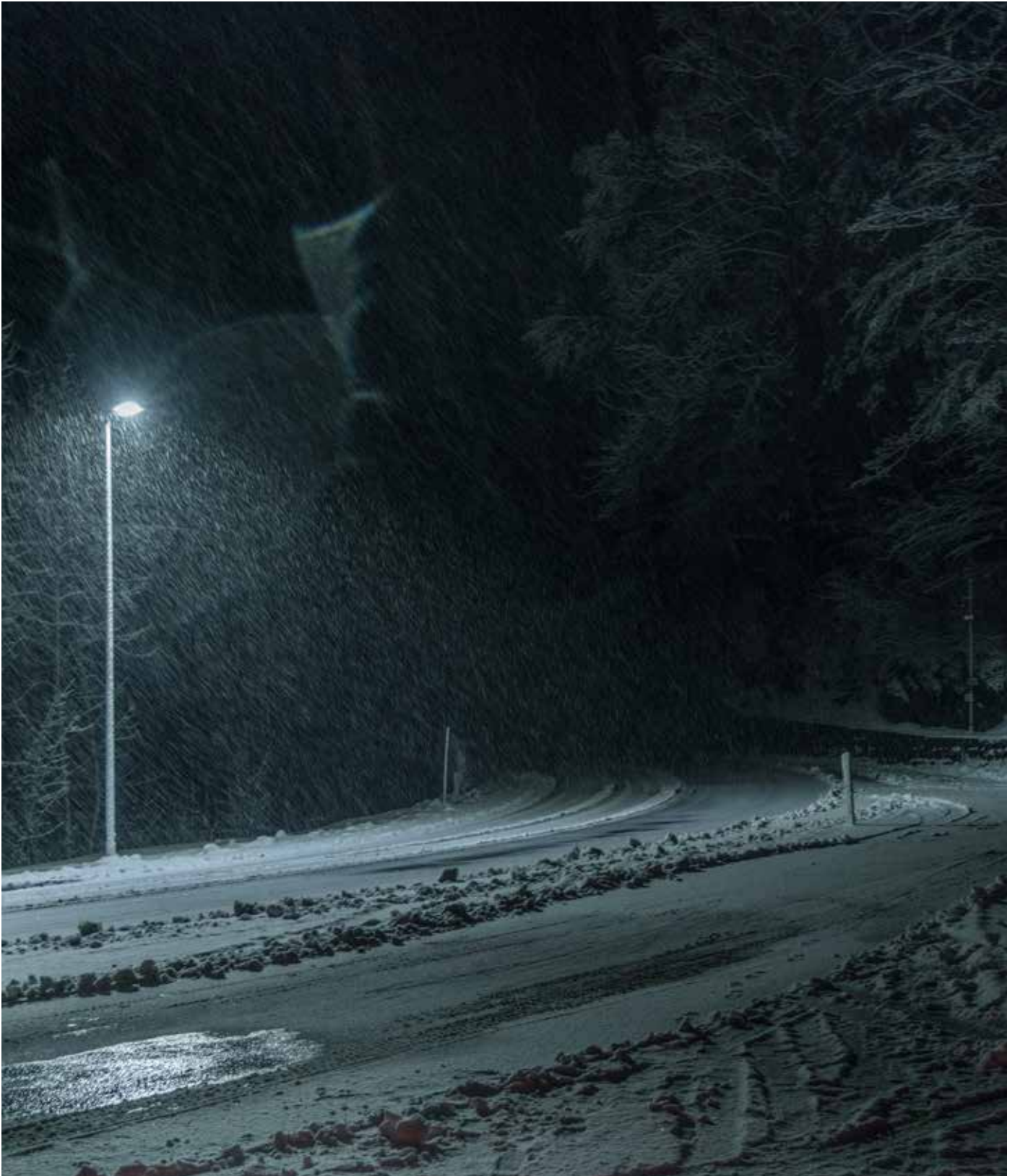




Ivo Häfliger at the headquarters of the Canton of Lucerne's winter road-clearing service in Emmenbrücke

**ON THE SCREENS (from left)**

WiMS workstation graph showing variables (red: surface temperature, yellow: air temperature, light blue: dew point, white: freezing temperature, dark blue: precipitation intensity), camera feed from the Brünig meteorological station, Meteogroup precipitation radar (bottom), the Lucerne police's high-level managementsystem (ÜLS) with camera images from all the tunnels in the centre of the city



The bend at the Schwingplatz wrestling arena (famous for the Brünigschwinget wrestling competition) is blanketed in snow. Roads in such a condition are ploughed and strewn with salt.

**PICTURE SPREAD**  
Roland Tännler, a photographer from Zurich, rode along with winter services manager Ivo Häfliger as he worked on clearing the road through the Brünig Pass at the beginning of March.