Wyssen Reference Project

IDA® Infrasound Detection of Avalanches aids protection of important traffic routes in Norway

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IDA® Infrasound Detection of Avalanches aids protection of important traffic routes in Norway

Project:	IDA® Infrasound Detection of Avalanches on E8 through Lavangsdalen and Rv. 15 through Grasdalen
Place:	Lavangsdalen in Troms and Grasdalen in Vestland
Country:	Norway
Year:	2014 - 2020 R&D, since 2021 operational
Customer:	Statens vegvesen (Norwegian Public Roads Administration)
Protected Object:	Roads
Installed Systems:	- IDA® Infrasound Detection System - WAC.3® Cockpit
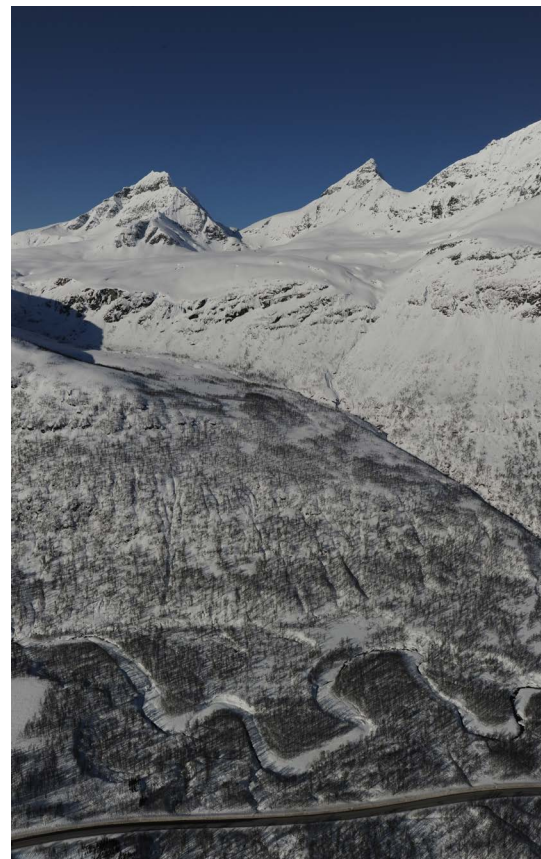
Initial Situation

In the period 2014 – 2020, Wyssen Avalanche Control and Norwegian Public Roads Administration (NPRA) tested infrasound technology for the detection of avalanches along several roads in Norway as a R&D project.

In 2020, NPRA decided to operationalize the technology for the roads E8 Lavangsdalen in Troms and rv. 15 Grasdalen in Vestland, and awarded Wyssen Avalanche Control the contract.

In Lavangsdalen, several cars have been caught in very large avalanches, but fortunately without fatal consequences. As the main road into the city of Tromsø, Lavangsdalen is crucial for emergency preparedness, commerce and passenger transport. Closures due to avalanches or the risk of avalanches has major consequences for society.

Grasdalen is an important east and west corridor in southern Norway. On average, 1-2 avalanches occur on the road each year, and the road is typically closed for many days in winter due to the risk of avalanches. A site specific avalanche warning is issued every day to ensure the safety and predictability of operating contractors and traffic.


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Our Solution

Wyssen Avalanche Control has provided a well tested infrasound detection system for the avalanche prone roads in Lavangsdalen and Grasdalen with a user-friendly interface on the WAC.3® platform.

The system automatically notifies decision makers in near real time that avalanches have occurred within a specific area. Detections are sent as an alert on SMS or email. The detection alert is also sent and automatic published to regobs.no, a tool that facilitates registering and sharing avalanche observations in Norway.

The avalanche detection systems in Lavangsdalen and Grasdalen are a powerful tool that provide information about local avalanche activity when visibility and darkness have made observations difficult.

This information contributes to more precise avalanche warnings, effective decision-making processes for road closure, opening, preventive avalanche control and other preparedness in Lavangsdalen and Grasdalen. The system is particularly strong in combination with a PTZ cameras at the sites, where release areas and runouts are assessed remotely after avalanche events.
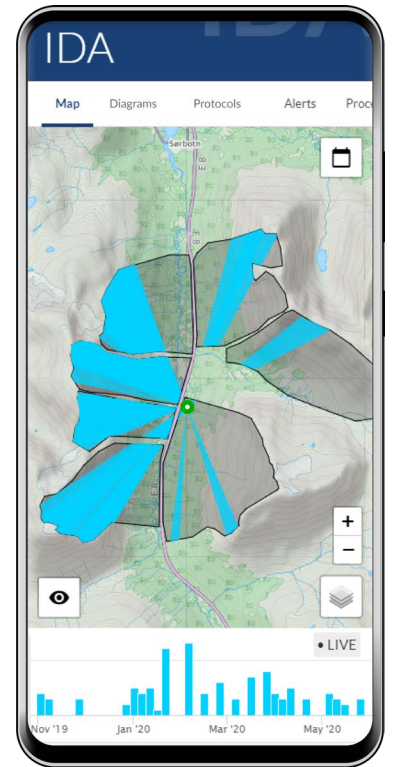
Storm in 2021

On the 6th of April 2021, a storm caused several large avalanches in Lavangsdalen. After a detection warning from the infrasound system, NPRA could see on their PTZ camera that one unusually large avalanche (categorized size 4) had reached the river in the valley bottom.

The department that is responsible for the residential area downstream the river was then warned in case of increasing slush flow danger, and a drone operator from NPRA immediately headed out to document the avalanche and to take a closer look at possible damming of the river. With the drone, NPRA could safely establish that the river was not dammed and that the river flowed past the avalanche deposits.

The automatic detection is documented at regobs.no/Registration/265818, with pictures uploaded in advance. The assessment to the drone operator is documented at regobs.no/registration/265916.

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