

AVALANCHE RADAR COL DU POURTALET, PYRENEES



AVALANCHE RADAR



WEBCAM



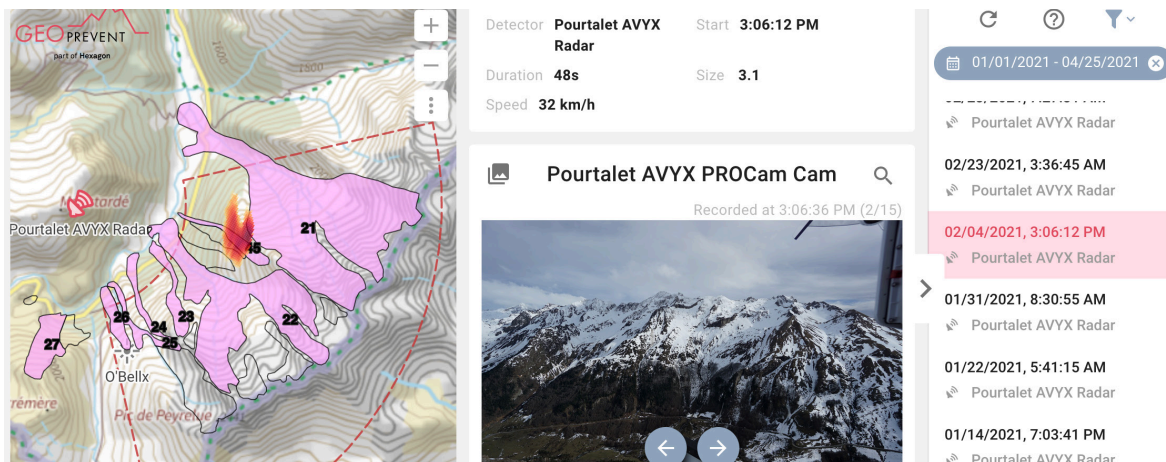
AUTONOMOUS OPERATION

Large scale monitoring of avalanche paths above the road linking France and Spain at the Col du Pourtalet.



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Title Page: The autonomous AVYX avalanche radar system in front of the avalanche tracks to be monitored above the D934.

Figure 1: Illustration of an avalanche event in the online Geoprevent data portal with event photos and avalanche characteristics.

SITUATION

The Col du Pourtalet, located at 1794 m a.s.l., connects the French department of Pyrénées-Atlantiques and the Spanish province of Huesca. On the Spanish side, Formigal and Panticosa form an important interregional tourist area. The ski area of Formigal is one of the largest ski areas in the Pyrenees and is only accessible from France by the D934 road. This road has to be closed for a few days in winter for safety reasons because of the avalanche danger on its last kilometers.

At four of eight avalanche paths on the last kilometers before the summit of the pass, galleries and protective forests preserve the road from avalanches and rock falls. The remaining avalanche paths regularly endanger the road and challenge the decisionmakers. An avalanche radar will help the team to assess the avalanche activity in the different avalanche paths and support avalanche control works. In fall 2020, a first O'BellX blasting system was installed in the Peyrelue couloir, L'Ourade Sud to trigger avalanches.



Figure 2: View from road D934 up to the avalanche radar system.

SOLUTION

We installed an AVYX avalanche radar on the opposite slope of the avalanche tracks, exposed on the Moustardés ridge. Since end of December 2020, the system has been monitoring six of the eight avalanche paths above the D934 pass road at a distance of up to 3.2 km. The AVYX Avalanche Radar allows automatic detection of spontaneous or artificially triggered avalanches over a large area, regardless of the weather conditions and time of day. In addition to photos of the event, a high-resolution camera regularly produces images that allow a visually assessment of the situation. All data is transmitted to our servers via the GSM network and authorized users can access it at any time via tablet, smartphone or computer in the online data portal.

A sophisticated control system optimizes energy consumption. The main energy source are solar cells, which are supported by a fuel cell during short winter days and long periods of bad weather.

During the first winter, 8 spontaneous avalanches were detected. For the second winter, it is planned to connect several traffic lights to the detection system, which will automatically close the road in case of spontaneous avalanches.



Figure 3: The avalanche radar enables wide-area coverage of the opposite avalanche slopes with a single device.