

## **An integral avalanche safety concept for Goms region, Valais, Switzerland.**

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### **ABSTRACT**

The Goms region, situated in the north-west of canton Valais, is one of the most avalanche affected regions of Switzerland. 68 avalanche paths endanger transportation corridors (road and train) as well as villages. Its documented history of catastrophic avalanche events reaches back to the 16<sup>th</sup> century, with one of the largest events in Alps being the Bächli avalanche 1970 with 30 fatalities. This well documented history allowed for diverse avalanche mitigation projects to be undertaken: Dams, galleries, tunnels and avalanche barriers have been constructed in the past, and more recently avalanche release, detection and warning systems have been employed.

All these mitigation measures must be considered in the safety concept of the valley. To achieve this, and to maintain a manageable level of complexity for the daily use, a specifically tailored, integral safety concept was developed. It incorporates all relevant information, starting from weather station data to detection systems, as well as avalanche path specific information on historical events and protection measures. All this information is finally merged together into a digital decision scheme to support the local warning service.

We will present a detailed overview of the safety concept and how it could be applied to other regions, as well as experience from the first operational winter season 2018/19.