



IDA® Infrasonnd Detection System

IDA® detects avalanches continuously and in any weather from any direction. This information is very valuable for to get an overview of the avalanche-situation especially if there is no sight.

IDA® allows to monitor the avalanche activity of a larger area within a radius of 3 to 5 km (1.8 - 3.1 miles). It provides valuable information to avalanche forecasting teams about the natural avalanche activity and artificially triggered avalanches. Notifications are provided to operational personnel automatically by IDA®. In winter 2017/18 the operational IDA installations recorded more than 700 avalanches.

Technology

An IDA® array consists of 4 to 5 infrasound sensors which are deployed in a star shape around a central unit. The system can be powered with autonomous or grid power supply and data is transmitted in real-time to a server for data processing and automatic notifications (SMS, e-mail, publication in databases). Infrasound waves are low frequency (<20 Hz) sound waves

(pressure fluctuations) traveling through the air at the speed of sound (340 m/s). They occupy a relatively narrow frequency band (0.001 Hz – 20 Hz), too low to be perceived by the human ear. Very little attenuation travelling the atmosphere occurs compared to seismic waves propagating in the ground. For other applications, the infrasound technology is widely used for the detection of different natural (e.g. volcanic eruptions) and artificial phenomena (e.g. nuclear explosion).

All data is visualized in the **web-based platform WAC.3** which also allows to display all recorded avalanches (e.g. an entire season).



Functional Principle	Avalanches produce infrasound waves below 20 Hz (not audible for humans), which are detectable over large distances. Algorithms and filters allow to differentiate avalanches from other infrasound sources.
Set up	4 - 5 sensors are installed radially with a distance of approx. 100 m (328 ft). This array is installed outside of the avalanche path and connected to a central computer where the data is transmitted to a server for analysis.
Display	Fully integrated in our Wyssen Avalanche Control Center WAC.3
Range	up to 3 - 5 km (1.8 - 3.1 miles) for avalanches > size 2.5
Opening angle	360°
Communication	Mobile phone network
Power supply	electric grid, solar or fuel cell