First generation developed back in 1980`s

The idea for the product is from a Canadian avalanche scientific report

The concept idea is to deploy geophones in areas exposed to avalanches

The geophones detect the avalanche and generate an analog signal to a warning system

The warning system control traffic lights that stop all traffic into the danger zone.
The old system was a minor success in the 1980`s

In 1990`s Some systems were procured and installed in North Norway, Telemark and Gudbrandsdalen

After a major avalanche accident in 2000, the politicians discussed the option to procure a national system based on our old technology. However; the Ministry of Transport decided to wait.
Background:

- New system demands
- The old product from early 80s is obsolete
- There are still many roads and areas that are not properly equipped with a system for early warning of avalanche.
Possible areas of use:

- Pre-defined areas where avalanches can develop and cause major accidents:
  - roads
  - train rails
  - rivers
  - ski slopes / off piste skiing areas
  - military training areas
EEAWS and data acquisition

- 8 pcs of geophones
- Temperature gauge
- Wind gauge
- Snowdepth gauge
- Car counter
- Service Interface
- Traffic lights
- Signals in/out
- Video camera
- Other modules x N

Early warning unit/data process unit

Data analysis and presentation

- Software distribution
- Software analysis
- Software visualization
- Database
- Video output
- Control unit

Power: 220VAC/Battery/Suncell

Clients

ADSL

GSM
The EEAWS must be connected to the following equipment:

- Until 8 geophones for detection of avalanche
- Traffic lights or other means for generating a stop signal
- Power. 220VAC / battery / suncell

The EEAWS can be connected to the following equipment:

- Temperature gauge
- Wind gauge
- Snow depth gauge
- Car counter
- Video camera
- ADSL or GSM line for transferring data to a local or regional alarm station
From the central the following functions can be done remotely:

- Reset the EEWAS.
- Initiate test of the geophones and get feedback.
- Read the status of the power supply.
- Read the status of EEWAS.
- Analyze the data from the different sensor connected to EEWAS.
- Analyze video image photos before during and after an avalanche.
- Distribute date of interests to other entities such as road authorities, emergency instances according to required needs.
- One or two operation centres shall have the capacity to receive and monitor all EEAWS systems in a country.

- The operation centre must have a workstation with Windows user interface and required equipment to receive GSM signals and additional messages sent through ADSL lines.

- A video monitoring system shall work from the same workstation.
View of a possible user interface
Thank you for the attention!

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Any questions?