

Hydro-meteorological warning system



Description

MTX S.r.l. has designed and developed an innovative monitoring system which, in case of extreme weather conditions, produces early warning information.

MTX boasts a long collaboration with the Civil Protection of the Municipality of Genoa to which it has been provided both the design know-how and monitoring tools for the implementation of population alert systems that allow, depending on the measurement of torrent levels and/or rainfall intensity, to predict the occurrence of flooding.

The system is able to simultaneously manage different alarm conditions, depending on which it can implement different actions.

The algorithm that allows to estimate the precipitate of the last historical period is particularly important. By correlating this parameter to the characterization of the hydrological basin, it is possible to predict, with sufficient approximation, alert states generated by a stream.

Upon reaching the alert condition, the station can send SMS messages to the staff in charge, warning alerts to the operations centre and, once the maximum alert has been reached, alert the public by means of visual and audible warning devices or through signs.

The measuring and warning stations are characterized by low energy consumption and can be powered by a photovoltaic solar panel system. This condition allows the creation of stand-alone stations, a solution that facilitates the commissioning phase in any area identified for the control of any critical issues.

The stations are mounted on poles with an appropriate height for the fixing of photovoltaic modules. The datalogger, communication modules and backup batteries are housed in a suitable stainless steel box with key lock.

“Early warning” stations can also be applied for the monitoring of high water phenomena in vehicle or pedestrian tunnels.

The monitoring stations can be realized with different hydrometric sensors. Ultrasonic sensors are easy to install and have no contact with the water course. Piezometric sensors are normally used for the monitoring of the water level in tunnels.



Technical specifications may be varied without prior notice

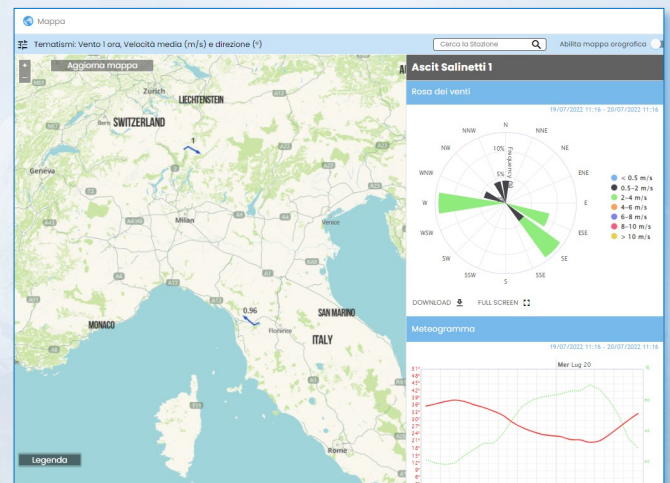
The main functions of the monitoring station can be summarized as follows:

- **Local data storage:** The multi channel datalogger can be used for the data acquisition from different types of sensors;
- **Data transmission:** At programmable intervals the datalogger, using the GPRS network, sends the recorded data to the control center;
- **Warning messages:** In view of potential alarm conditions, the datalogger sends SMS messages to operators in charge of monitoring activities;
- **Activation of the local monitoring station:** In case of flood risk, the datalogger activates the station that will alert citizens through flashing lights and audio signals. The datalogger can also activate other warning stations by means of SMS.

For the consultation and the central storage of the data transferred from the monitoring stations, MTX proposes MINA, a web application realised with the latest open-source technologies, easy and intuitive to use, also made available through appropriate cloud installation.

Finally, to complete the monitoring system, a camera can be attached to the workstation. This will be periodically activated by the datalogger and will send, in GPRS mode, a still image of the area under observation. This solution provides an overview of the actual status of a watercourse or of a monitored infrastructure.

For more information we invite you to visit our web site www.mtx.it



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