



- Covers full lifecycle of observation: data acquisition/import, validation, storing, elaboration, alarm generation and dissemination, export and archiving.
- Highest level of flexibility: user can set-up the software in order to adapt it to requirements
- Open source database
- Not dependent from the field equipment technology
- Seamless integration with others software (OpenAPI)
- Interface is optimized for access from any device through a web browser
- Support of standard communication protocols

Description

PolarisWEB is a web-based platform for the remote data collection, supervision and control of the environmental monitoring networks, entirely developed by Siap+Micros. Being that it has been tested in numerous projects implemented worldwide, it represents currently the heart of the monitoring system for hundreds of customers and users.

PolarisWEB uses an Open Source SQL database ensuring easy data access and integration with other applications. It is accessible from any fixed or mobile device using a web-browser. PolarisWEB is by its nature a cross-platform application (Windows/Linux/Mac/IOS/Android etc.) and it is optimized to be used on different kind of devices by using of scalable interface and vectorial graphics.

The platform is composed of different modules ensuring the following main functionalities: data acquisition, validation, storage, visualization (GIS, tabular and graphical), reporting, management of alarms, network supervision and diagnostic, control of the data transmission system (GPRS/UMTS/LTE, UHF radio, Satellite). The above features allow to achieve a complete network management in real time. Furthermore, the software supports the most used standard communication protocols such as TCP-IP, FTP, MODBUS-RTU, MODBUS-TCP/IP, etc.

PolarisWEB suite comes in different languages: English, Italian, Spanish, and French but is possible to add others upon request.

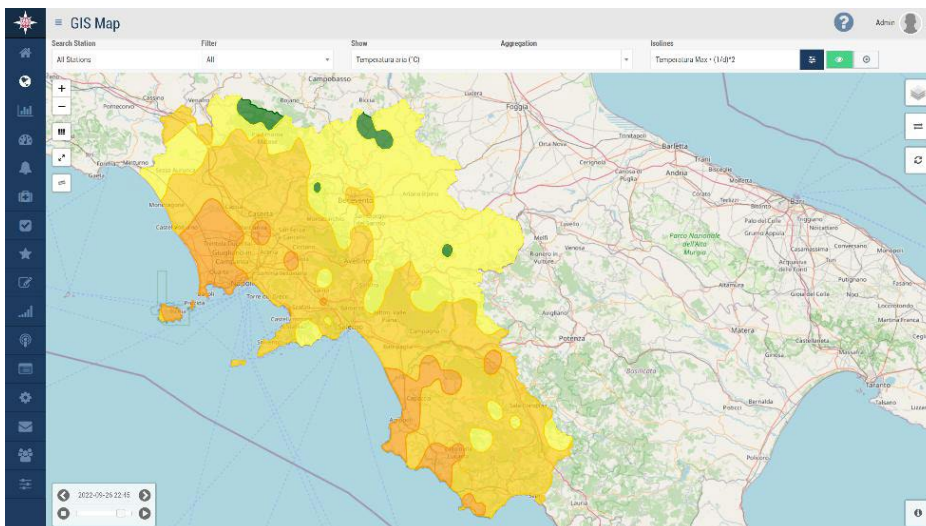
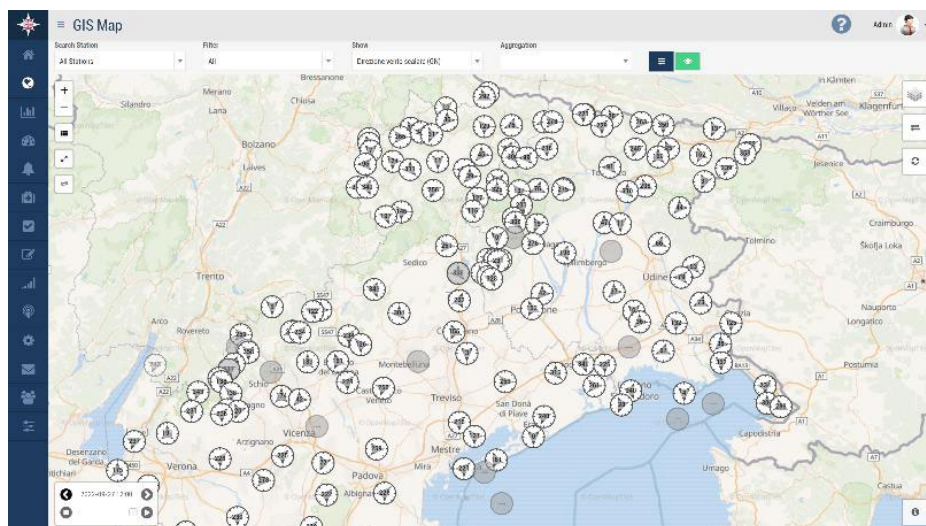
Moreover, the platform can be either installed on the customer's IT infrastructure or provided as a Cloud solution.

Main Functionalities

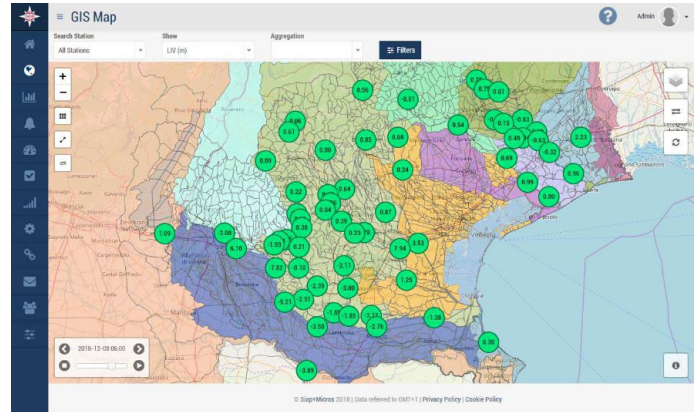
DATA VISUALISATION

One of the main functions of Polaris is the data visualization of both the measures and stations' generic information.

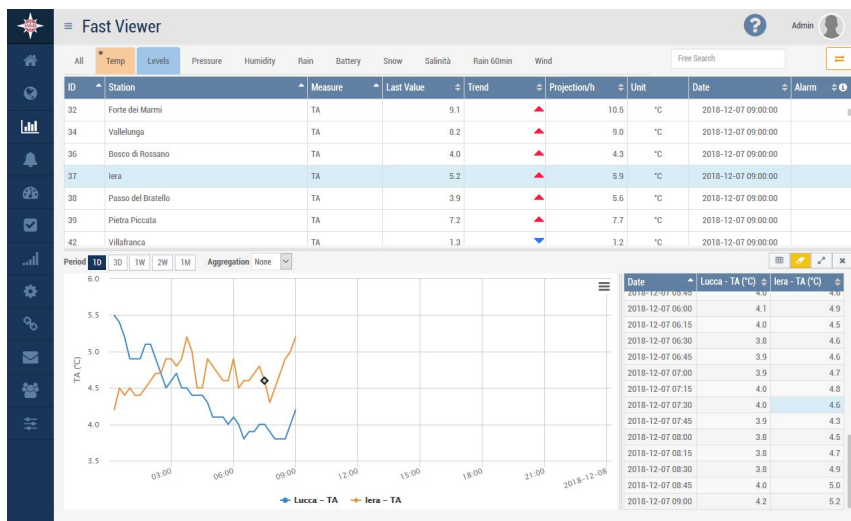
The functionalities in connection with data polling have been designed for a wide range of applications. For this reason, the information is displayed in different shapes such as numerical, graphical, map, and tabular. With regards to the applications where data are spread out upon a wide area, the most suitable method to display and analyse them is by using the GIS application: through this type of representation the information about stations and measures is available in an expeditious and updated way. The interactive platform of the GIS application makes the user able to easily detect anomalies such as alarms state, data delays and offline stations.



Moreover, this application gives the possibility to visualise the data distribution over a defined territory through the use of specific tools of the GIS representation such as isolines and icons. All these elements are fully customizable also in accordance with the type of measure the user intend to visualise.



FAST VIEWER



Polaris also includes a tool for prompt and easy data consultation designed to speed up some priority operations such as the management of alarms or the verification of the proper functioning of the network. In this module data are organized in tabular and graphical formats. The tool's functionalities are enhanced by the possibility to setting up filters, trends, rates predicted on hourly basis, displaying of alarms and exporting of graphs, creating immediate access to the information. This feature is key when it comes to the management of emergency situations.

DATA VALIDATION

This module allows to apply validation rules to the acquired measures. During this process the pre-elaborated data (processed information by the correction and validation procedures) can be kept without losing the raw ones (measure gathered and transmitted by the data logger without any elaboration). The two types of data are stored into database and coupled with the same storage line. This implementation choice ensures the integrity of data transmitted by the datalogger and consequentially the whole acquisition system become fully transparent. The validation process can be done either manually or through a specific application that allows to define a set of validation rules which can be recorded in automatic procedures.

SUPERVISION

PolarisWEB runs functions specifically dedicated to monitor the proper functioning of the network. For example, some of the developed supervision activities are the following: the management of alarms, the display of network statistics and the configuration of the data logger parameters. Thanks to the intuitive and comprehensive interface the operator is facilitated in the analysis of the network and the attention can consequentially easily be focused on stations in alert or ones where delays of data receipt is present. The joint action of the Fast Viewer and Supervisor applications allow the operator to instantly identify any alarm or alert situations and to react quickly, simplifying the decision-making procedures under alert conditions.

DATA EXPORT

PolarisWEB allows to automatically export data in a wide range of formats (textual, graphic, ASCII, etc.) and with different transmission modes. The data can be exported using different means, ranging from the simple file, to an FTP area, to an e-mail. It is also possible to define the time interval for sending the information to each export operation (last hour, last 2 hours, ... last 48 hours, last month, ...). The available data export formats are:

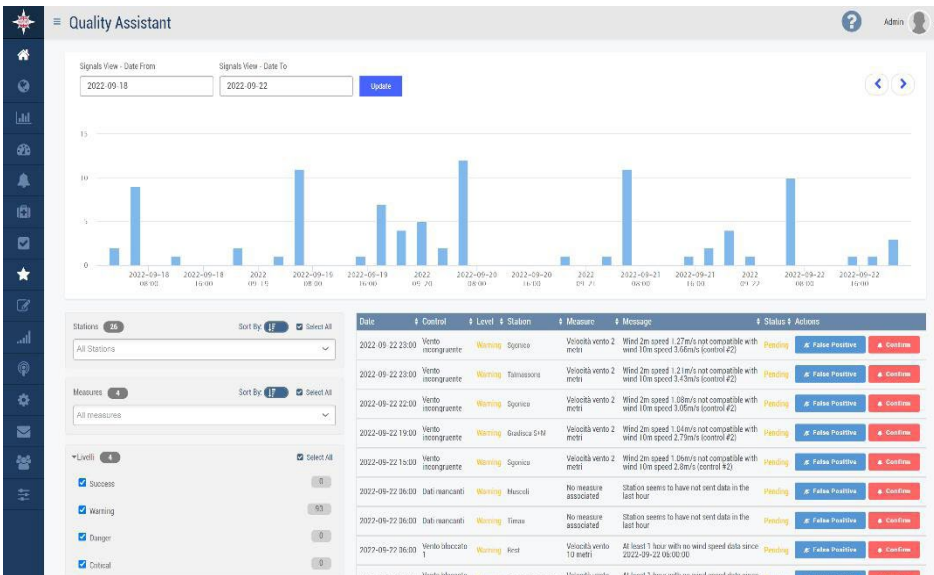
- PNG
- JPEG
- PDF
- SVG
- CSV
- XLS

ALARM MANAGEMENT

A core feature of PolarisWEB is the management of alarms which allows to use the platform as an Early Warning System. Through this function it is possible to promptly disseminate alarm-states to the final user by SMS, email or phone-call. Moreover, the alarms can easily be visualised by a specific alarm indicator which changes its colour on the map (or table) when a pre-alarm or alarm is exceeded threshold. The alarm settings are part of the module and each function is fully customizable (alarm level, user, dissemination methods, colours of labels, etc.).

ID	Date Record	Station ID	Station Name	Measure ID	Measure Name	State	Alarm Value	Silenced	Return Alarm	Date Checked	User	Module
13816	2022-09-27 08:45:09	61	Coscovo	35	Baltoria	P-	11.7	Not Silenced	Generate Return Alarm			
13819	2022-09-27 07:15:00	233	Uccua	109	Stato Risc Plur	A-	0	Not Silenced	Generate Return Alarm			
13812	2022-09-27 07:15:00	233	Uccua	34	Presenza rete	A-	0	Not Silenced	Generate Return Alarm			
13804	2022-09-27 04:00:00	6040	LNK COL DELLA GALLINA Ris.	1602	Radio Voltage	P-	119	Not Silenced	Generate Return Alarm			
13726	2022-09-26 18:00:00	5061	TER Cusciano	1602	Radio Voltage	P-	119	Not Silenced	Generate Return Alarm			
13723	2022-09-26 14:00:00	6039	LNK COL DELLA GALLINA	1602	Radio Voltage	P-	119	Not Silenced	Generate Return Alarm			
13706	2022-09-26 11:15:00	512	Pala LORGER	34	Presenza rete	A-	0	Not Silenced	Generate Return Alarm			
12460	2022-08-18 12:15:00	39	Chioati	34	Presenza rete	A-	0	Not Silenced	Generate Return Alarm			
12120	2022-08-12 11:45:00	131	Palozza	169	Stato Risc Plur	A-	0	Not Silenced	Generate Return Alarm			
12119	2022-08-12 11:45:00	131	Palozza	34	Presenza rete	A-	0	Not Silenced	Generate Return Alarm			
11783	2022-08-01 23:30:00	191	San Volfango	169	Stato Risc Plur	A-	0	Not Silenced	Generate Return Alarm			
11782	2022-08-01 23:30:00	191	San Volfango	34	Presenza rete	A-	0	Not Silenced	Generate Return Alarm			
11667	2022-07-29 21:00:00	165	Pramosio	169	Stato Risc Plur	A-	0	Not Silenced	Generate Return Alarm			
11666	2022-07-29 21:00:00	165	Pramosio	34	Presenza rete	A-	0	Not Silenced	Generate Return Alarm			
13089	2022-06-15 11:30:00	156	Parkèbaia T.P.	109	Stato Risc Plur	A-	0	Silenced	Generate Return Alarm	2022-06-16 13:22:38	admin	polaris
13068	2022-06-15 11:30:00	156	Parkèbaia T.P.	34	Presenza rete	A-	0	Silenced	Generate Return Alarm	2022-06-16 13:22:38	admin	polaris
6577	2022-02-15 11:35:00	2	Ausso	143	Precipitazione: 60 mm	W+	4.6	Silenced	Generate Return Alarm	2022-02-16 08:29:58	admin	polaris
3323	2021-11-05 13:15:00	199	Sauro di sopra	109	Stato Risc Plur	A-	0	Silenced	Generate Return Alarm	2021-11-05 15:01:49	cdidragoe	polaris

QUALITY CONTROL



A specific module has been designed for the verification of all the main parameters collected by the monitoring network. Through the application of algorithms, this function continuously analyses the data series and identifies specific elements which represent a symptom of a drift in the measures and which might lead to a station stop or to a deterioration in the quality of data. Once these anomalies are detected the module provides to the user an automatic highlight of the issues entering a easy and immediate investigation by the operator. This information is a useful parameter to schedule the maintenance activity before a failure in the field equipment occurs.

OTHER FEATURES

Many new functionalities and modules have been developed over the years of implementation for customization purposes, enlarging the PolarisWEB suite. For example, the synoptic module allows the user to configure from a completely blank page a totally customizable dashboard where the contents can be added through the available widgets. Every single element of the synoptic page can be customized according to the need. This feature can be useful for many reasons, for instance in case of emergency: the user can easily build his personal page in order to keep under control some stations (or measures) where an alarm state has been detected. Another feature is the Data Import: through this module it's possible to import data in different formats such as csv (a customized template can be set up) and dynamic ASCII. The Data Import can be done either by manual input or by automatic schedule. Additionally, the PolarisWEB suite has been designed in order to ease the data exchange between different database. Thanks to its distributed architecture the software allows to configure data synchronisations to and from other servers (records, data, partial data and others information can be synchronised). This functionality can be essential for data inter-change, reproduction as well as back-up purposes.