Wind Watcher
(DSA501)

Environmental Monitoring Solutions
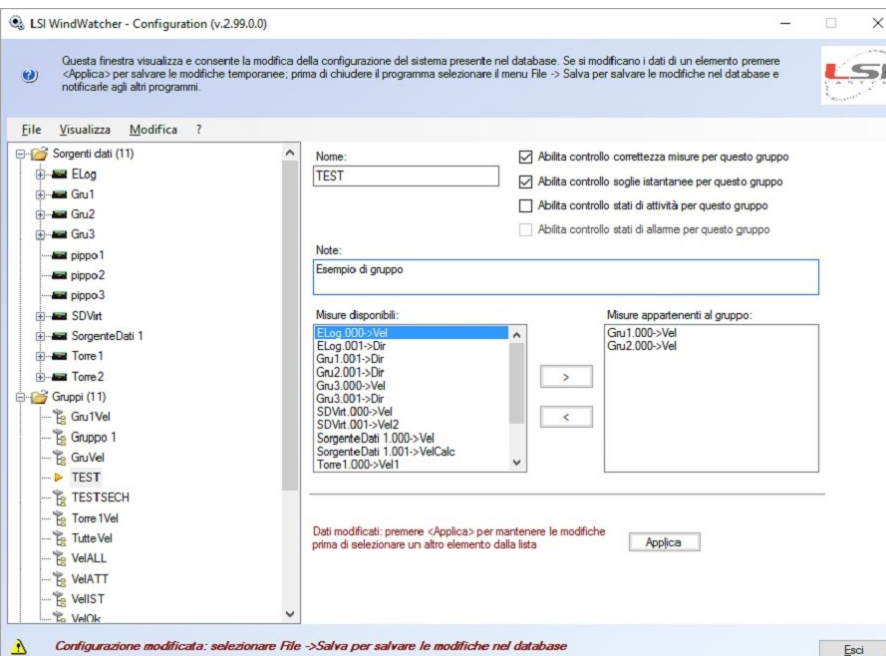
WindWatcher is a system for the acquisition and anemometric processing in real time for the evaluation of the alarm conditions of a large area site if subjected to strong gusts of wind. The program instantly processes the data and determines the states of activity (complex logics based on data processing from one or more anemometers) and alarms in real time to report, as quickly as possible, potentially dangerous anemological situations for site activities. Wind Watcher supports the decisions that define the operating conditions: in safety, on alert or in alarm of the system. Typical situations of use are found in port terminals (cranes), railway lines, cable cars, construction sites, off-shore platforms, etc. in which it is necessary to manage the operations according to the anemological conditions. The program receives instantaneous values every second from a series of anemometers connected (via one or more data loggers) via radio, WiFi or Ethernet and processes these data and any detected alarm states, which are then distributed to networked PC clients, for their display to the staff responsible for checks. At any time it is possible to review the past anemological situation that led to a condition of operation. Modules for sending emails upon exceeding thresholds and for displaying online statuses via web page also on mobile applications.

- Fast acquisition and management of real-time values (one data per second) of the wind from one or more anemometers of the system
- The system is designed for the management of redundant measuring points
- Data visualization on PC or on web platform
- Alarms generation by area (grouping function of different anemometers)
- Memorization of every single instant for subsequent analysis and checks
- The system can be installed on two
- Wind Watcher Alarms module for sending email notifications upon exceeding established thresholds
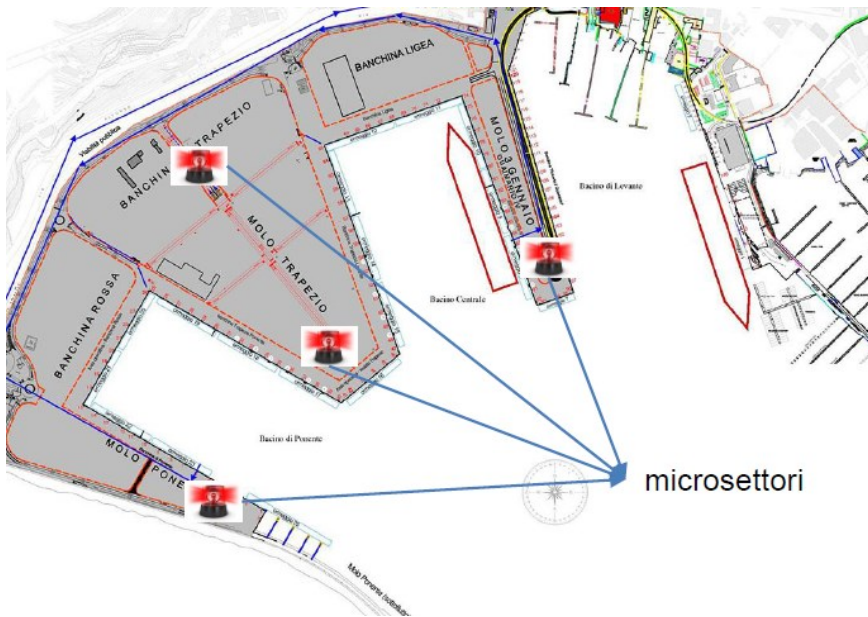
Main features

System configuration

Extended configuration. In addition to communications management and number of measuring points, allows their grouping in groups and logical sub-groups and the programming of alarm logics.
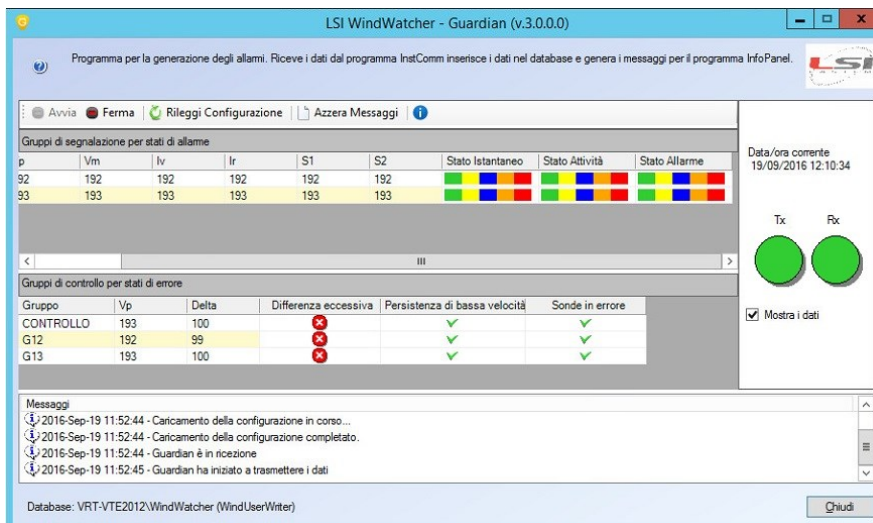
- The system treats the istantaneous values acquired every second, as average sliding values on a chosen basis (typiccaly 5 seconds) by comparing hem with nearby sensors to evaluate any differences. It can consider the maximum values for a conservative logic
- The processing system is also designed for the management of measuring points consisting of 2 anemometers physically placed side by side (reduntant), with the aim of: increasing fault tolerance and the general reliability of the measurung system
- The alarm logics can be divided into 5 levels, each level generates alarms based on different thresholds in accordance with different types od wind processing (gust, maximum over a period)

Sectoral alarm groupings and logics

microsettori

▶ *The system permits to create groupings of more appropriate measuring points in order to obtain specific wind assessments for microsectors. It is therefore possible to implement sectoral alarm logics for the site in question. The data processed by the groupings of the measuring points are then compared with a series of threshold values, from which the sectoral and / or general status is deduced.*
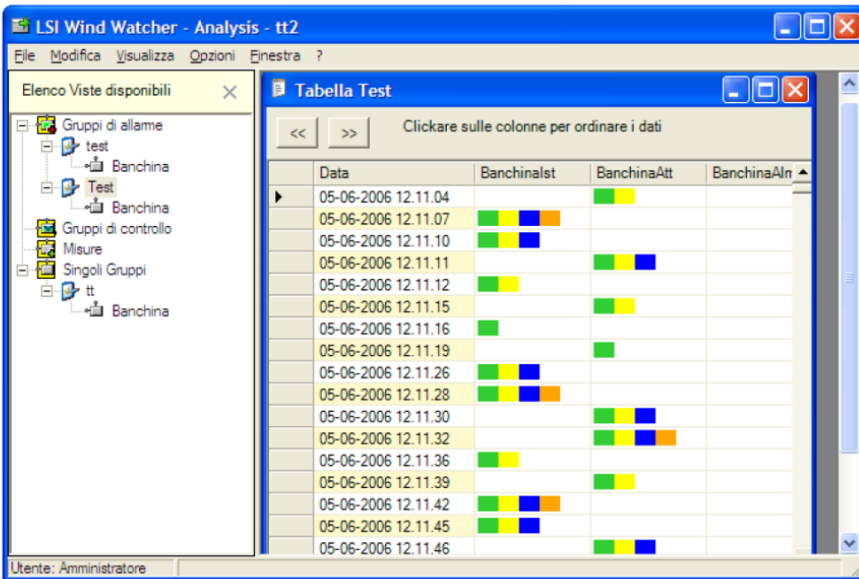
Alarms

▶ *Visualization and warning of current alarm situation for each sensor, for each sensor pair (redundant logic) or for each group and sub-groups of sensors. Alarms are notified via email in real time via the Wind Watcher Alarms module.*

- The evaluation of the activity status (level) of a group is based on the evaluation of its instantaneous status, defined on the basis of the values assumed by selectable parameters (maximum speed, burst, minimum of the instantaneous values of the last 5 s and the last 10 s) In fase di configurazione è possibile selezionare quali parametri utilizzare per la valutazione dello stato istantaneo

- For each of the five programmable levels it is possible to set the threshold values of the individual parameters Il passaggio ad un livello superiore avviene quando almeno un parametro supera il valore di soglia

- The return to the lower level occurs when all the parameters fall below their respective threshold values for a given period
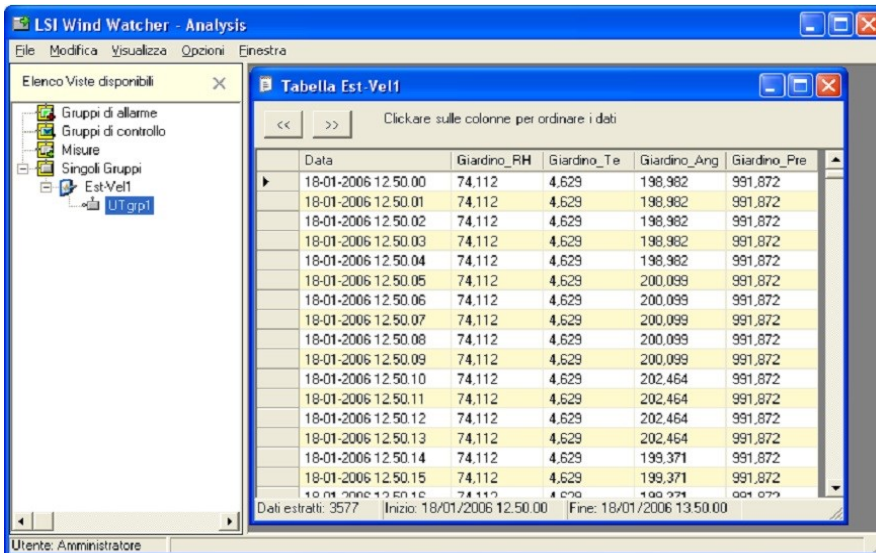
▶ *Displaying of alarm states over time in different points of the monitored area. Each of which has a 5-level staircase identified by the colors green, yellow, blue, orange and red.*

View of real-time status

Displaying of measurements and alarms in the various measurement points on a dynamic dashboard (InfoPanel) available on all client PCs on the network.

- The type and quantity of information displayed by each terminal are fully configurable

- Any data processed by the system, whether it is the direct data of the anemometer, the statistical data processed by the measurement point or by a group of them, or the data of the current alarm level, can be shown in the form of an instantaneous or graphic numeric value thunderstorm with auto-scrolling

- Any combination of this information can be composed within one or more viewing pages

Historical data analysis and data storing

▶ *The database keeps a record of all the data detected instant by instant by the anemometers, alarm conditions or events of potential malfunction that occurred over time. The assessment takes place by selecting the period of interest, the single anemometer or groups of measuring points. The program offers the trend of the situation both in tabular and graphic form. Export of information can be inserted into documents and reports.*

Continuity of service

The system can be installed on two servers: an operational primary server and a secondary service server. The system features allow you to keep the system configuration up to date on the secondary server so that you can activate it at any time should a primary server failure occur.
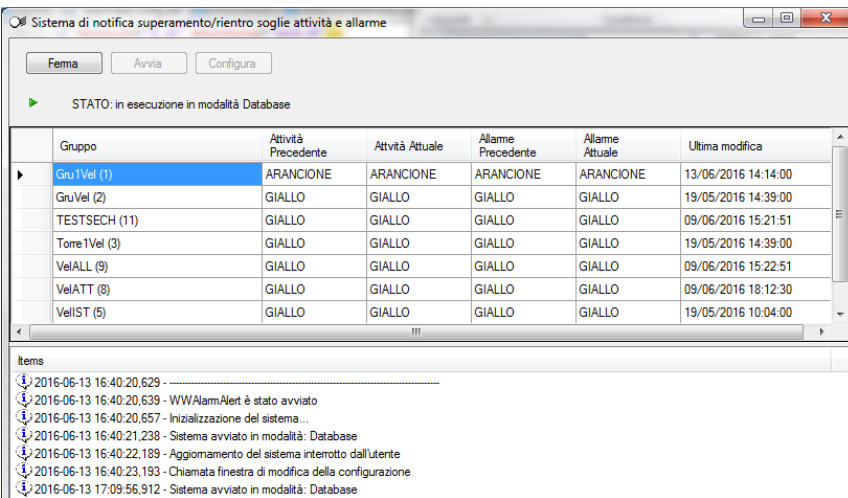
Wind Watcher Alarm—additional module

WindWatcher ALARMS is the system for sending notifications relating to changes in activity and / or alarm thresholds and for displaying web statuses. The system consists of three modules:

- WWAlarmAlert: desktop program that sends notifications via email
- WWAlarmViewerWeb: website that displays alarm statuses and current activities even on a mobile device
- WWViewerWeb: website that displays data from a programmable series of anemometers

Both modules use the data present in the *WindWatcher* database .

▶ Wind Watcher Alarm Alert

This application aims to send notifications via email when the alarm thresholds or group activity configured in WindWatcher vary.
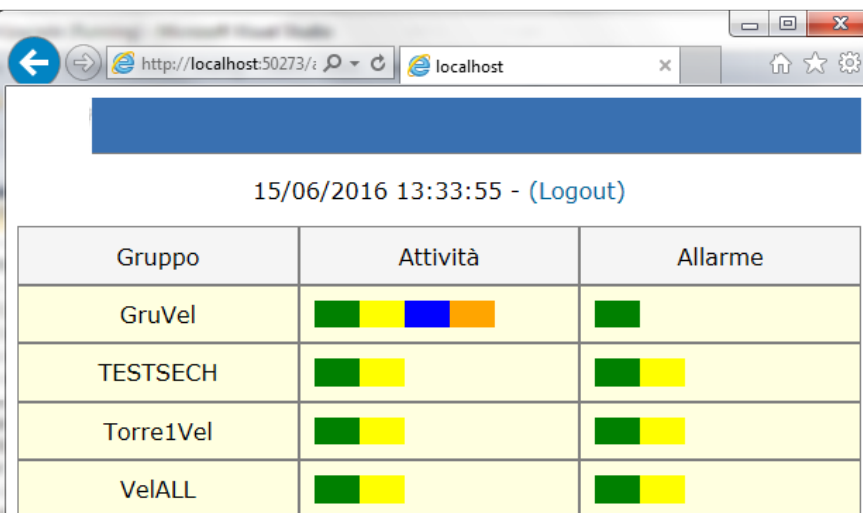

▶ *The program visualize:*

- *in the upper part the list of configured groups and their respective states (the previous state is also displayed) nella parte inferiore i messaggi di log*

Available actions:

- *Stop: stop checking and sending notifications Avvia: riavvia le verifiche e l'invio delle notifiche*
- *Configure: allows modification of the configuration; accessible only after stopping verification*

▶ Wind Watcher Alarm Viewer Web

The Web module allows convenient access to the activity and alarm states also from Mobile applications.

▶ *The web application graphically displays the alarm and activity states of the configured groups or only the states of activities.*

▶ Wind Watcher Viewer Web

The Web module allows convenient access to data recorded by a series of configurable anemometers.

The site can be configured with free access so that any user of the system (e.g. port) can have access to data during operation.

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