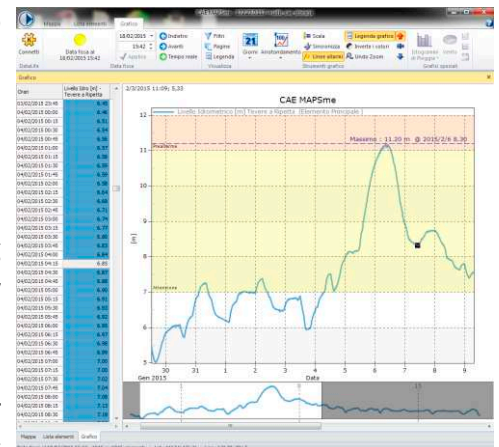# MAPSme

MAPSme, MHAS Edition version of MAPS, is the CAE software based on GIS DotSpatial libraries, which provides the geospatial representation of information arriving from a monitoring system, enabling the visualization of data on digital georeferenced maps. MAPSme allows the user to implement its own SIT (Sistema Informativo Territoriale - Territorial Information System) thanks to its versatility and flexibility in the representation of geographic information in the most

common commercial standards. The program, also available as 64bit version is specifically developed to support the latest operating systems and all the innovations enclosed within the UDB geodatabase, which is the heart of the information received from DATALIFE. Spatial data in the MAPSme geodatabase are vector data (points, lines, polygons) that fully describe typical entities linked to the territory monitoring, forecasting and prevention systems. In this way MAPSme provides the geographical representation of entities such as monitoring stations, rivers, watersheds, alert zones or the representation of more general geographical information such as countries, regions, provinces, municipalities, roads or more detailed such as buildings in the city context (schools, hospitals, municipal buildings), emergency vehicles deployed permanently in the territory, branches of the main authorities in charge of rescue in case of critical issues in the territorial surveillance (civil protection, firefighters, police, forestry department, municipal police). Therefore MAPSme allows the end user to have a very powerful decision-making support tool for emergencies during the early warning scenarios combining, in real time, updated information from on-site sensors and the territorial information essential for the protection of the population.

MAPSme can process and represent annual time series of data, to quickly show graphs of absolute or derived quantities, to set alarms represented with confidence intervals, i.e. colour bands in the graphs, and to represent accurate point or areal information.


It is always possible through the spatial interpolation methods of which it is equipped, to extract real-time updated areal information starting from the point data acquired from the monitoring network. In this way it is always possible to represent rainfall isohyets using rainfall data, isobars using data from the barometers and isotherms starting from the air thermometers. The interpolation methods available to the user are the 'Thiessen Polygon Method', the 'Inverse Distance Weight Method - IDW' and the 'Kriging Method'.

CAE

innovation for a safer world.

The working UDB geodatabase of MAPSme, is equipped with routines for importing GRIB (.grb, .grib) format files, which give the possibility to combine the remote measurement data with the forecast data in the following 72 hours for all those situations in which updated provisional gribs are received.

APPLICATIONS AND FUNCTIONS

With MAPSme the user can add on digital maps, the detail levels that he wants to use. The opening of MAPSme to the Internet world is guaranteed by the possibility to import the geographic information layers in open formats. The supported formats are the most common and most used in the GIS world, including: Shape File (*.shp), Raster (*.bgd, *.nc, *.asc), WMS (Web Map Service), ER Mapper files (*.ecw), USGS Ascii DEM (*.dem), PC Raster (*.map), Org vector provider (*.kml, *.dxf), Jpeg (*.jpeg, *.jpg), Bitmap (*.bmp), Imagine (*.img), Portable network graphics (*.png), Graphics interchange format (*.gif), Tagged image file format (*.tif, *.tiff).
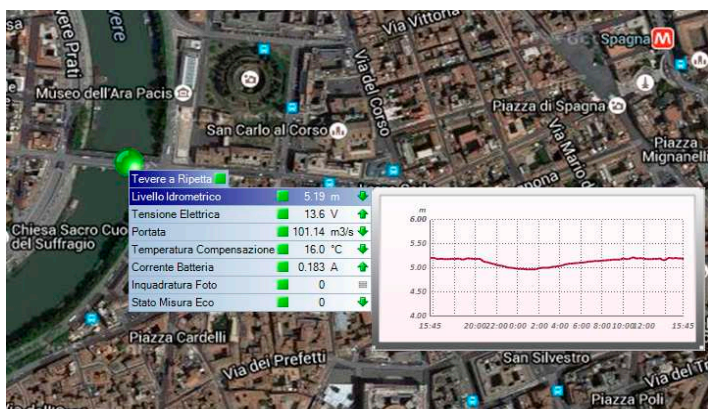
MAPSme is designed to be flexible also for the maps displaying, it is always installed with a default raster cartography, furthermore it is always possible to use maps available on the web, as well as open source maps such as OpenStreetMap, or any other maps owned by the customer such as those of Google or Bing.

It is possible to use any zoom level; entering more into detail in the geographical area of interest, the map changes dynamically, displaying more details and facilitating the operator in finding the relevant stations. Existing stations, displayed by MAPSme, are represented by two-dimensional or three-dimensional icons set by the user. The symbols of the stations assume a different colouring according to the state of the sensors on the station, depending on resettable alarm thresholds. By moving the mouse over the symbol of a station, in addition to its name and geographical information, it is possible to view the list of sensors present in the selected station, the name, status, and the last value. Selecting one of these sensors, provides a preview of the values graph referred to the last 24 hours compared to the last update of available data.

The program interface is characterized by a Ribbon Bar that groups the functions available to the user into menus, the different panels can be displaced to customize the working environment and it is always possible to create aggregations of preferential views called pages.

Any change made by the user, in terms of display or processing, is recorded in the UDB geodatabase, this allows the user to login from any device in the network and find the related settings (set of alarms, thresholds, colours, subsystems of stations) in an easy and rapid way. Furthermore, new master data fields added on the UDB geodatabase, also created by the users themselves, are independently received and displayed through MAPSme.