Development of an information service system based on GOOGLE graphical interfaces

Instruction for the use of the MOON-VOS portal Interface

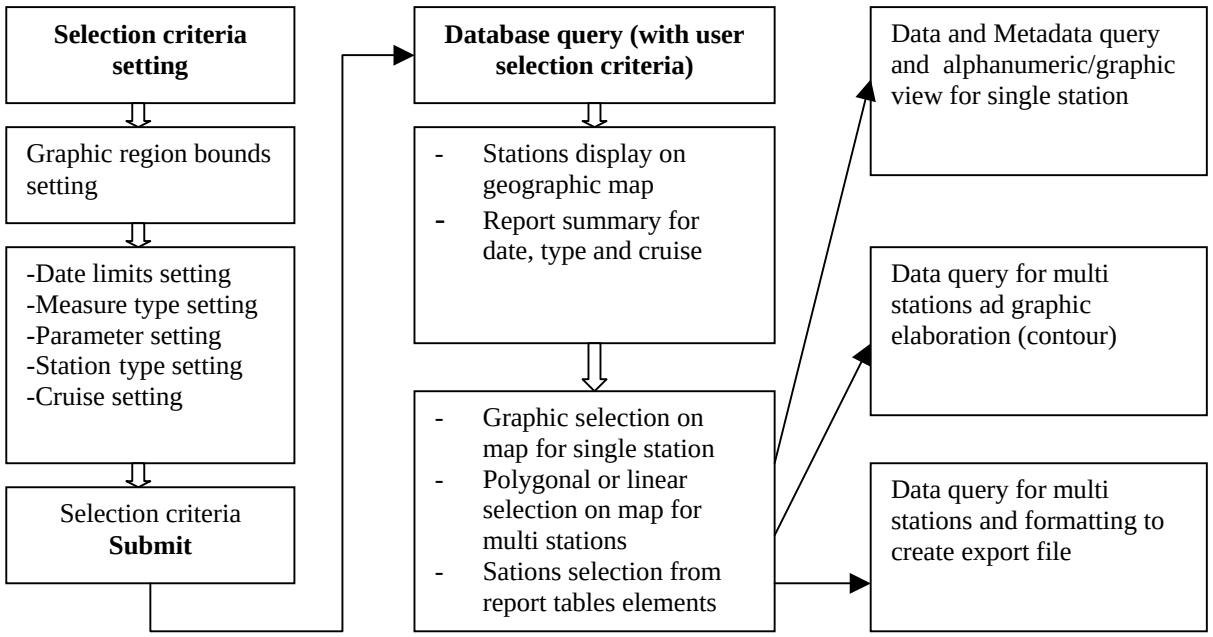
Giuseppe M.R. Manzella

ENEA Operational Oceanography, p.o. box 224, 19100 La Spezia, Italy

Contact: G.M.R. Manzella, tel +39 0187 978215, e-mail giuseppe.manzella@enea.it

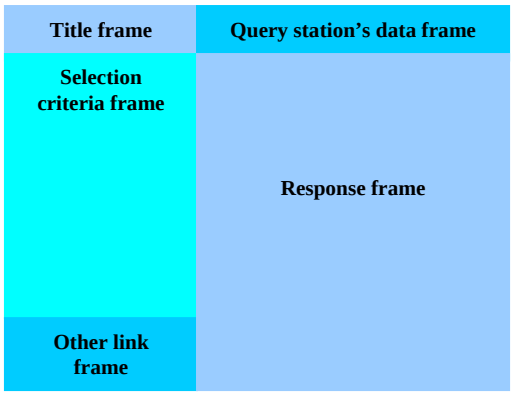
Version 01, March 2008

The functional scheme for discovery, selection, download is herewith reported.

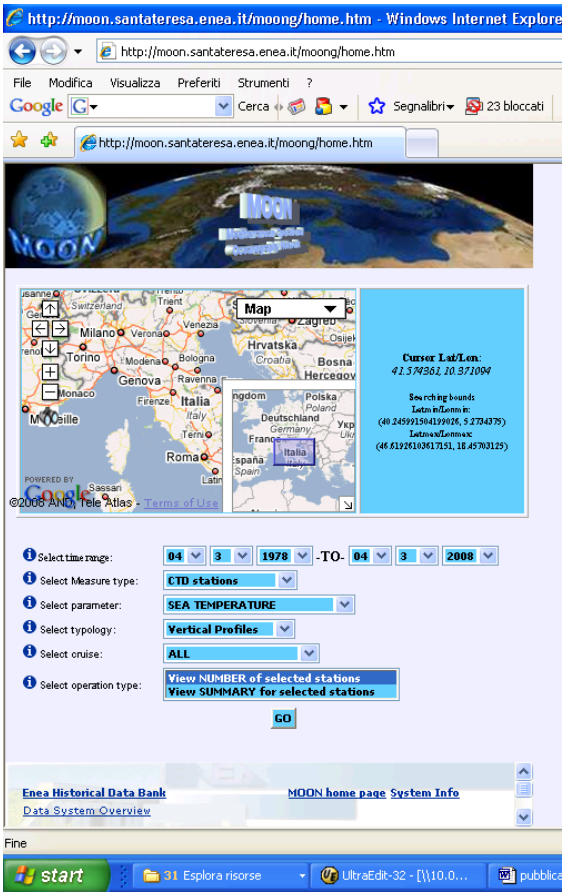


The functions are viewed by the users through a Internet browser. The graphical interface is divided in frames allowing (figure 3):

- the selection of the stations on the base of cruises, parameters, geographical location, time,
- the response frame providing the view of the selected stations; the selection can be refined in this frame;
- display of selected stations by query;
- other links and title frames.

User interface	**Logical frames of the interface**
	

Setting selection criteria (left frame)



Google maps API:
Functions:

- Zoom, Pan
- Lat, Lon cursor position on screen
- Rectangular Zoom
- Map, Satellite, Hybrid chart
- Dynamic bounds View
- Navigation area menu

User select the geographic area. Every time the rectangular window is moved, the number of stations appear in the left frame.

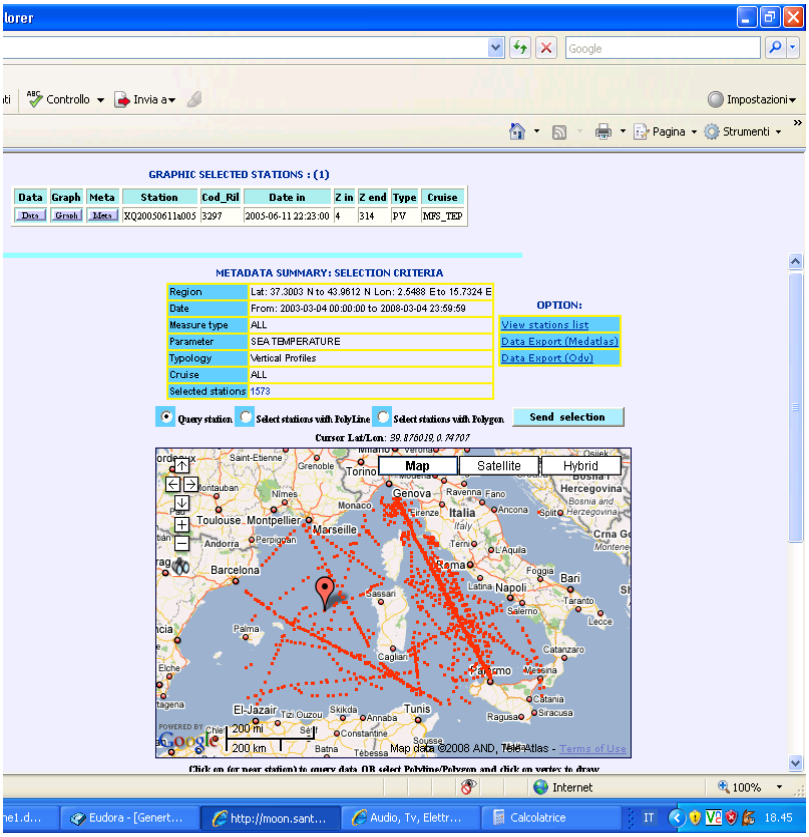
Selection of data:
Function:

- Temporal interval: a window of 20 years is provided by default: dates can be changed by the users
- Measure type, Parameter, Typology, Cruise: are listed only options for which there are link with the data base.
- Operation type: two choices are possible, view the number of stations or display position and temporal table.

All query conditions are considered as AND. In the case option is left ALL, this will not used for the selection. In the case of selection of CRUISE, only this option will be considered in the stations selection.

After selection, the user can have a look at temporal distribution of stations and cruises to whom stations belong clicking on **View NUMBER of selected stations**.
Or can have also a Google Map showing the spatial distribution clicking on **View SUMMARY for selected stations.**

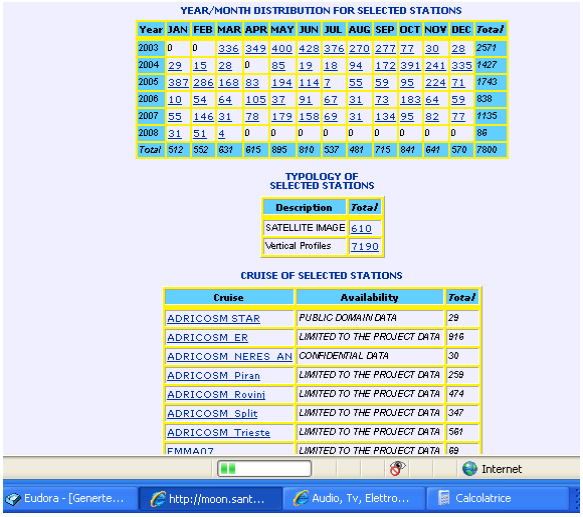
Response to query (right frame)



The SQL query defined with the selection criteria is sent to he database through the http server.
The response to the query is shown on the right frame. In the upper part the defined criteria are reported. In the center the position of selected stations are shown in a Google map. In the lower part the yearly and monthly distribution of station is shown in a table.
The user can navigate on the map using the Google Map Api functionalities. Can select a station and in this case
The user ca use the typical Google Map API functions to navigate on the map. Furthermore can click on a station whose attributes will appear in the upper frame. Three commands are available here:

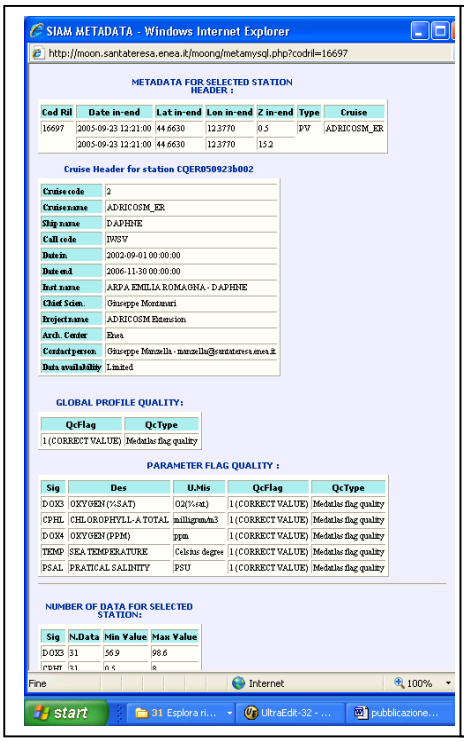
"**Meta**": allows the visualization of metadata.
"**Graph**": allows the graphical visualization of products (vertical profiles, time series, images)
"**Data**": allows to view the alpha-numeric values of products in table form.

Furthermore, other services have been added.
Polygon: allows the selection of stations in a certain area in order to produce horizontal maps. These will be presented overlayed on Google Map.
Polyline: allows the selection of stations to produce vertical sections.

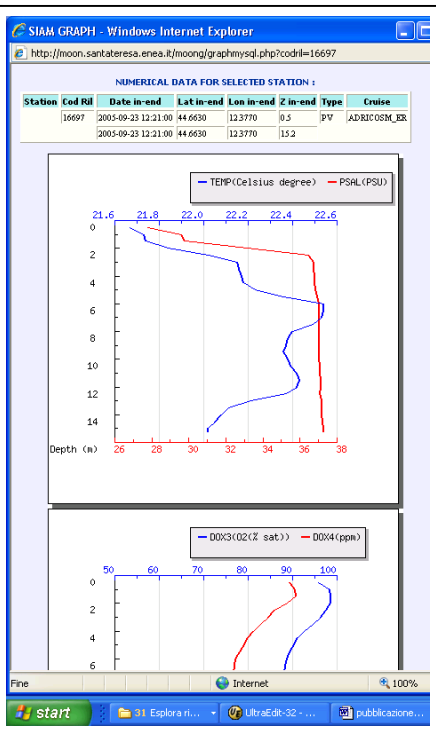


Below the Google Map it is provided a table with the temporal distribution of stations in years and months. Another table provides the list of cruises to whom the stations belong. Numbers and cruises in the two table can be selected by clicking on them.

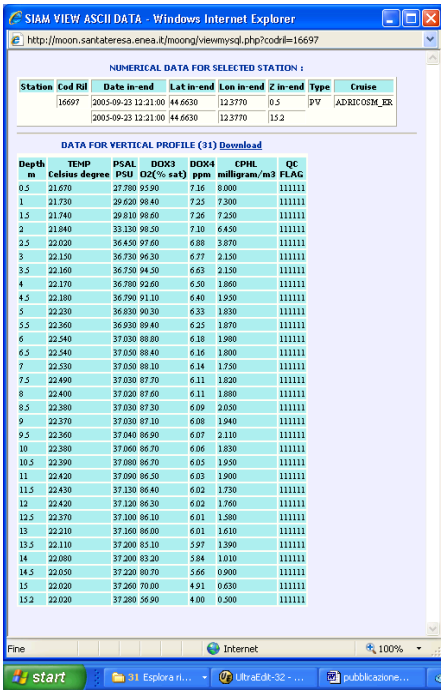
Example: Data View



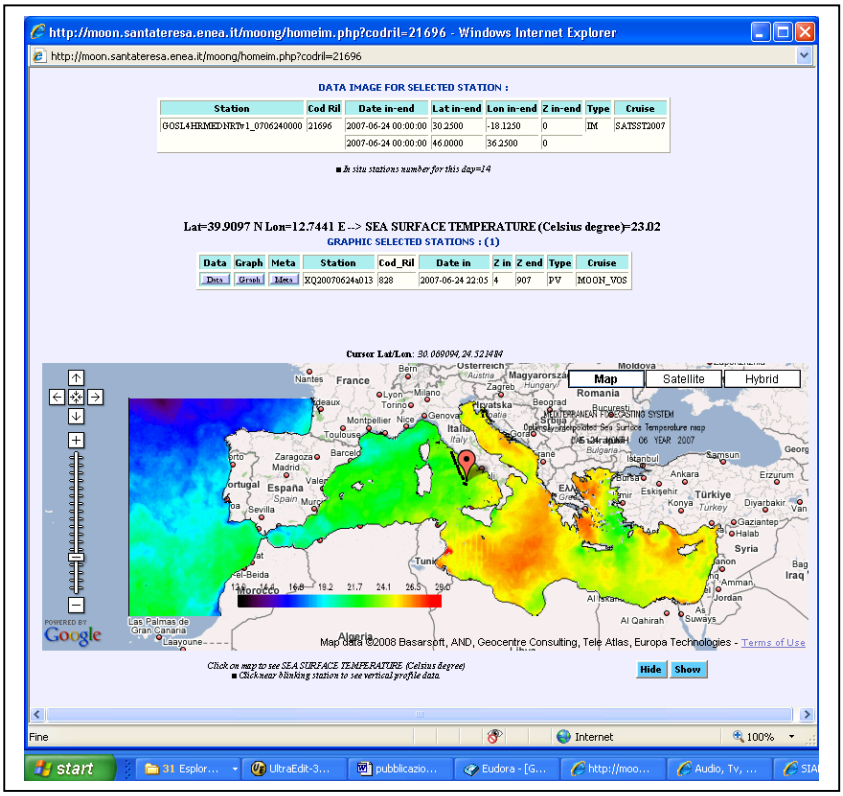
Metadata View



Graph View



Data View

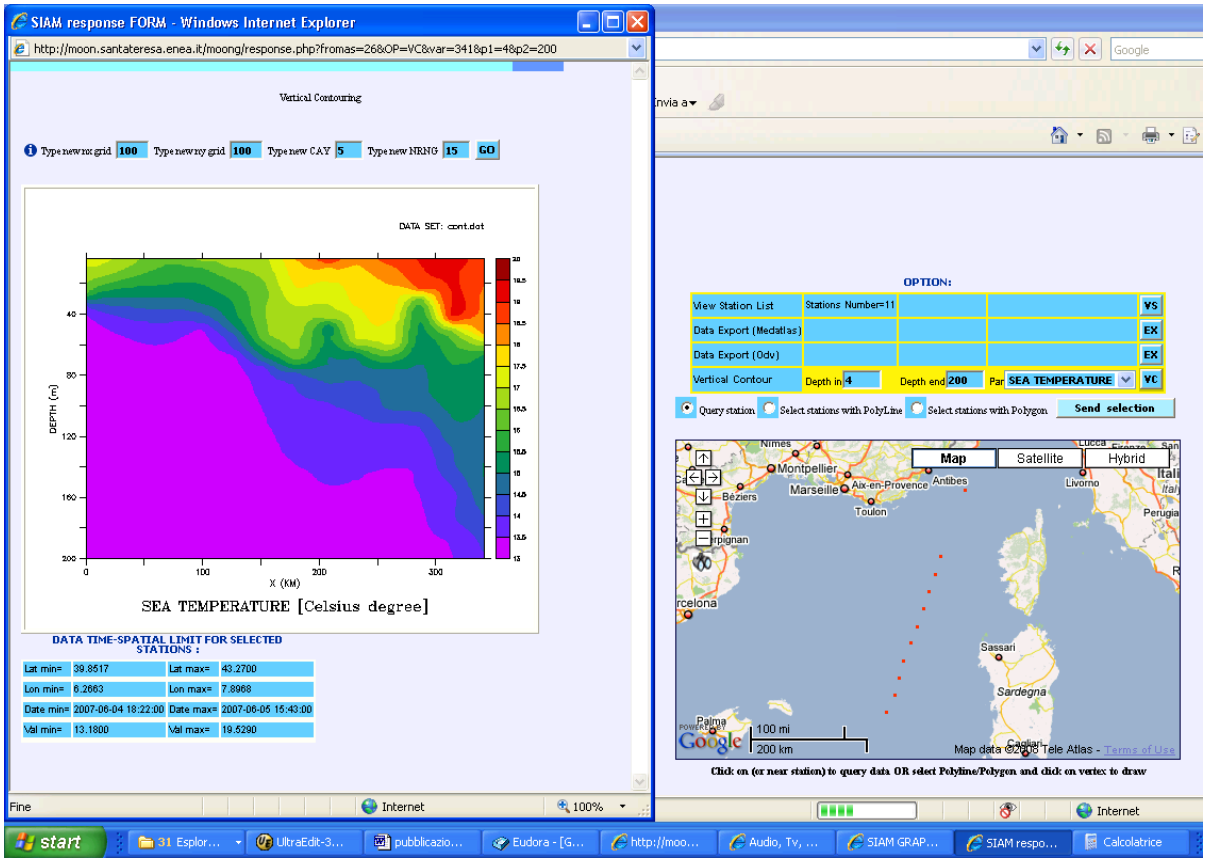


Graph Satellite View (SST)

A click on each pixel of the image in overlay on Google map will provide the value of the SST in that point. This is done by accessing the corresponding Netcdf file.

If in situ stations are also available in the day of the satellite image, they are viewed in the map. The stations can be selected and viewed as metadata, graphs, data. In this case it is possible to compare satellite and in situ data.

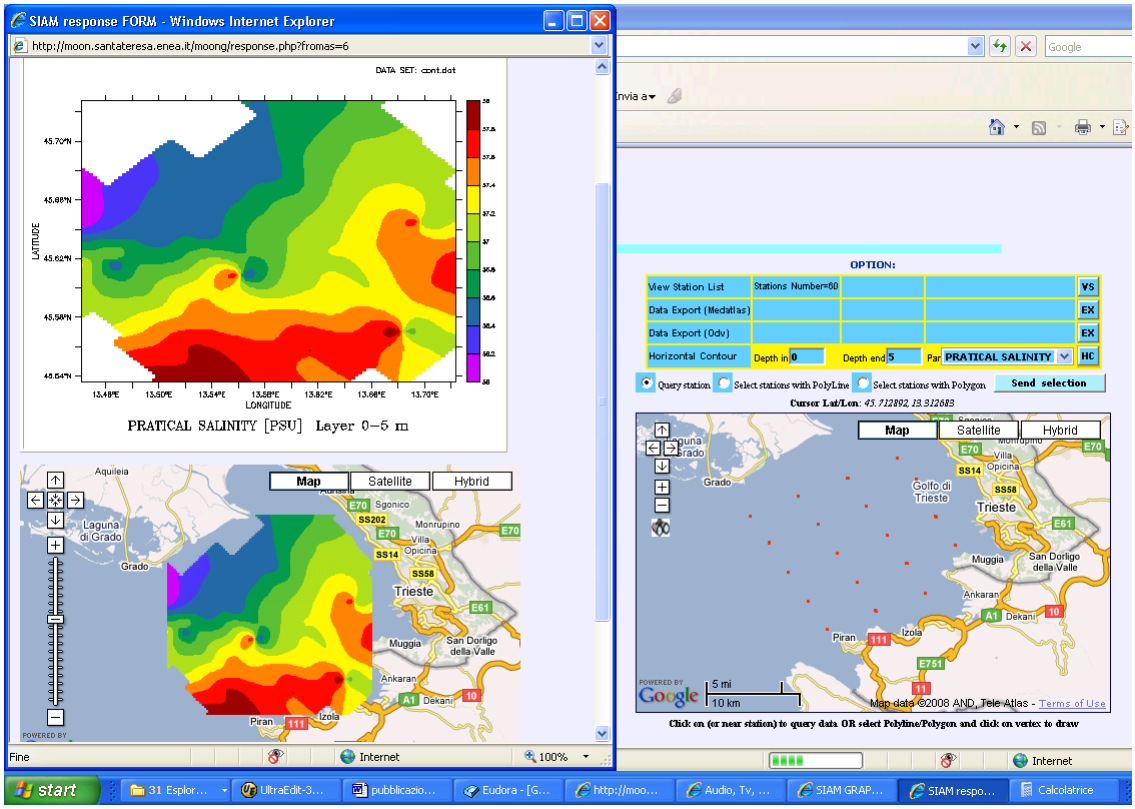
Example: Vertical contour



Using "**Select station with polyline**" it is possible to select stations. After clicking on Send selection, they will be viewed in the Google map. It is possible to select a vertical interval, a parameter and click on VC button. A section map will be produced.

The interpolation parameters of the graph can be changed by the user.

Example: horizontal contour



"Select station with polygon" allows the selection of a polygonal area. All station inside the polygon are selected (Send selection). User can choose the depth interval and the parameter to be mapped and clink on HC (Horizontal contour). The horizontal map is overlayed on a Google map. The user can change the parameters of interpolation.