

# Development of an information service system based on GOOGLE graphical interfaces

## Instruction for the use of the MOON-VOS portal Interface

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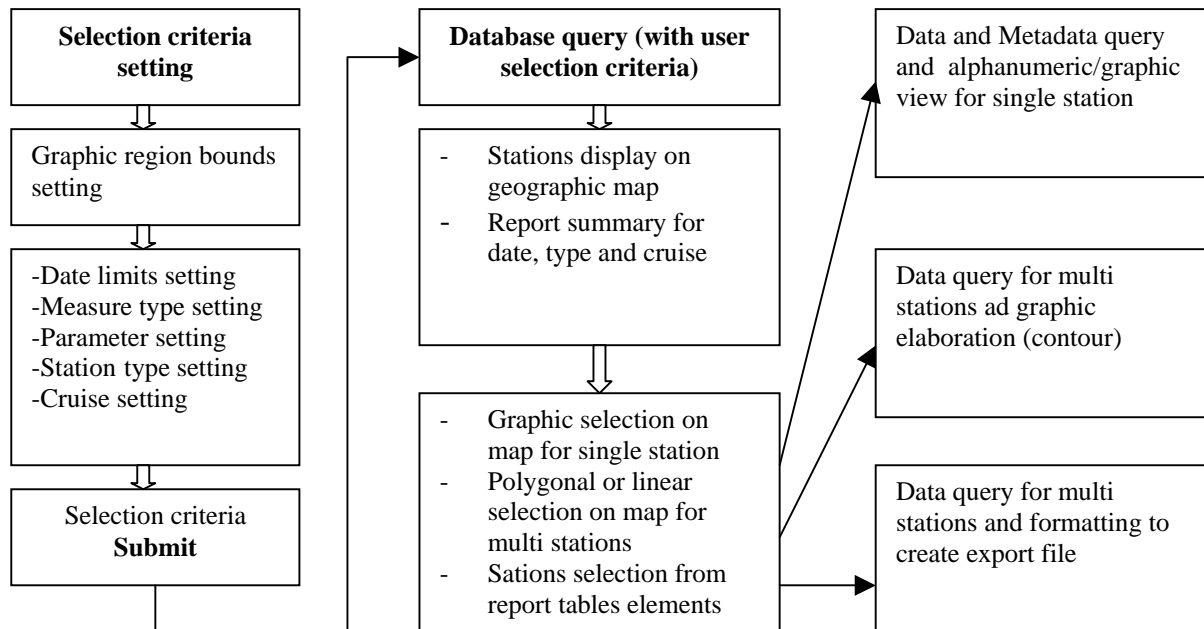
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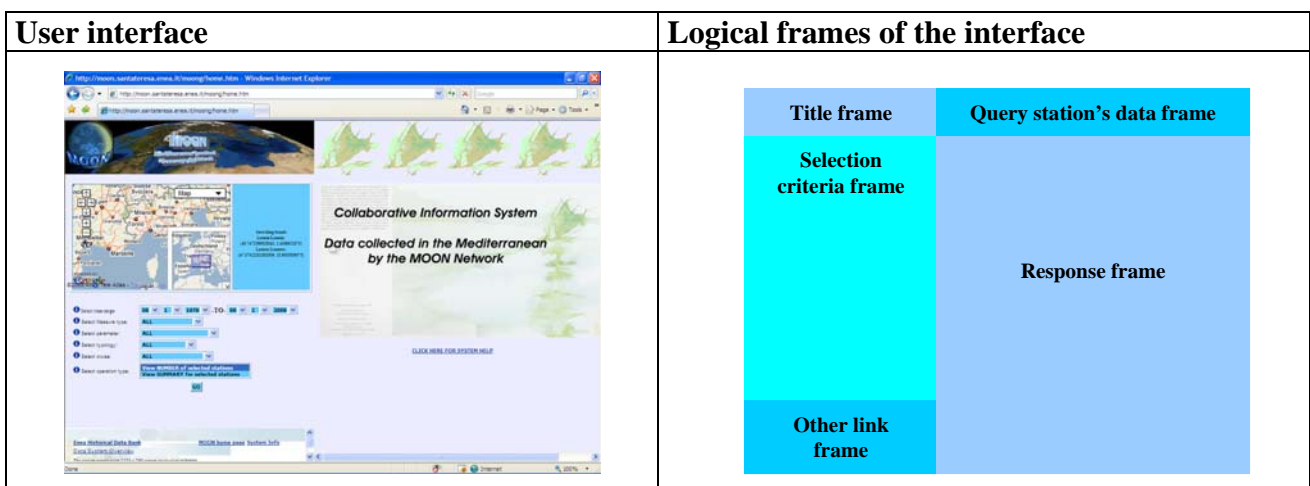
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The functional scheme for discovery, selection, download is herewith reported.



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.



## 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 screenshot shows a web application interface with a Google Map of the Mediterranean region. The map displays several red dots representing selected stations. The interface includes a table of selected stations, a metadata summary, and a map with navigation controls.

Data	Graph	Meta	Station	Cod_Ril	Date in	Z in	Z end	Type	Cruise
Dis	Grph	Mes	XQ200506116005	3297	2005-06-11 22:23:00	4	314	PV	MPS_TED

**METADATA SUMMARY: SELECTION CRITERIA**

Region	Lat: 37.3003 N to 43.8612 N Lon: 2.5488 E to 15.7324 E	OPTION:
Date	From: 2003-03-04 00:00:00 to 2008-03-04 23:59:59	<a href="#">View stations list</a>
Measure type	ALL	<a href="#">Data Export (Medatlas)</a>
Parameter	SEA TEMPERATURE	<a href="#">Data Export (Odu)</a>
Typology	Vertical Profiles	
Cruise	ALL	
Selected stations	1573	

Cursor Lat/Lon: 38.876019, 0.74707

The SQL query defined with the selection criteria is sent to the 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 can 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 overlaid on Google Map.

**Polyline**: allows the selection of stations to produce vertical sections.

The screenshot shows a web application interface with three tables. The first table shows the year/month distribution for selected stations. The second table shows the typology of selected stations. The third table shows the cruise of selected stations.

YEAR/MONTH DISTRIBUTION FOR SELECTED STATIONS													
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
2002	0	0	336	349	400	428	376	270	277	77	30	28	2571
2004	29	15	28	0	85	19	18	94	172	391	241	935	1407
2005	387	286	168	83	194	114	7	58	59	99	224	71	1740
2006	10	54	64	105	37	91	67	31	73	183	64	59	838
2007	55	146	31	78	179	158	69	31	134	95	82	77	1135
2008	31	51	4	0	0	0	0	0	0	0	0	0	86
Total	812	582	631	615	895	810	537	481	715	841	641	570	7800

**TYPOLGY OF SELECTED STATIONS**

Description	Total
SATELLITE IMAGE	610
Vertical Profiles	7190

**CRUISE OF SELECTED STATIONS**

Cruise	Availability	Total
ADRICOSM_STAR	PUBLIC DOMAIN DATA	29
ADRICOSM_ER	LIMITED TO THE PROJECT DATA	916
ADRICOSM_NERES_AN	CONFIDENTIAL DATA	30
ADRICOSM_Pirani	LIMITED TO THE PROJECT DATA	259
ADRICOSM_Rovini	LIMITED TO THE PROJECT DATA	474
ADRICOSM_Split	LIMITED TO THE PROJECT DATA	347
ADRICOSM_Trieste	LIMITED TO THE PROJECT DATA	581
FMMMA17	LIMITED TO THE PROJECT DATA	68

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

The image displays three browser windows from the SIAM system:

- SIAM METADATA - Windows Internet Explorer:** Shows metadata for selected station CQER050923B002. It includes a table of station data, a 'Cruise Header' with details like ship name (DAPHNE) and dates, and sections for 'GLOBAL PROFILE QUALITY' and 'PARAMETER FLAG QUALITY'.
- SIAM GRAPH - Windows Internet Explorer:** Displays 'NUMERICAL DATA FOR SELECTED STATION' and two line graphs. The top graph plots Temperature (TEMP) and Practical Salinity (PSAL) against Depth (0-14m). The bottom graph plots DOX3 and DOX4 against Depth (0-6m).
- SIAM VIEW ASCII DATA - Windows Internet Explorer:** Shows 'NUMERICAL DATA FOR SELECTED STATION' and a table for 'DATA FOR VERTICAL PROFILE (31) Download'. The table lists parameters like TEMP, PSAL, DOX3, DOX4, CPHL, and QC across various depths.

Metadata View

Graph View

Data View

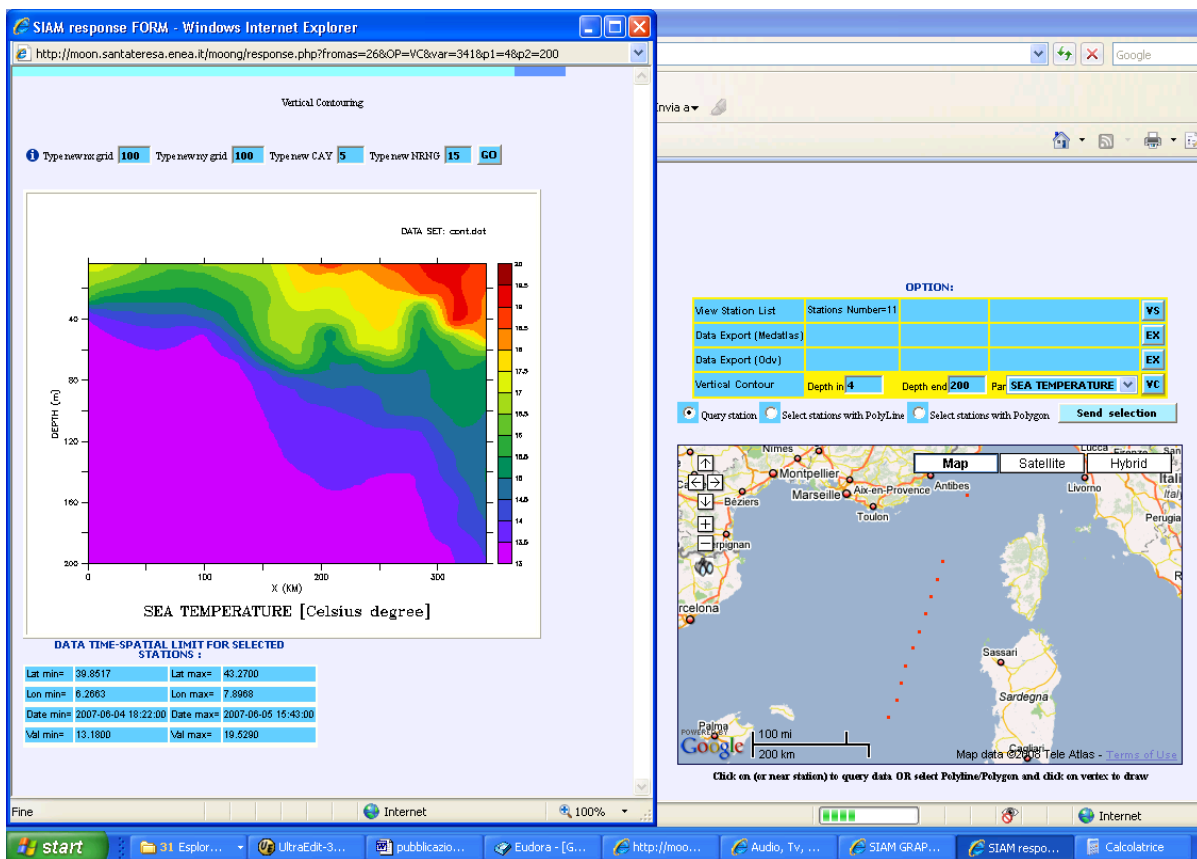
The image shows a 'Graph Satellite View (SST)' in a browser window. It features a satellite map of the Mediterranean Sea and surrounding landmasses. A color-coded overlay represents Sea Surface Temperature (SST). A table at the top lists 'DATA IMAGE FOR SELECTED STATION' with columns for Station, Cod\_Ril, Date\_in-end, Lat\_in-end, Lon\_in-end, Z\_in-end, Type, and Cruise. Below the map, there are controls for map type (Map, Satellite, Hybrid) and a 'Show' button. The map includes a scale bar and a legend for SST values.

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.

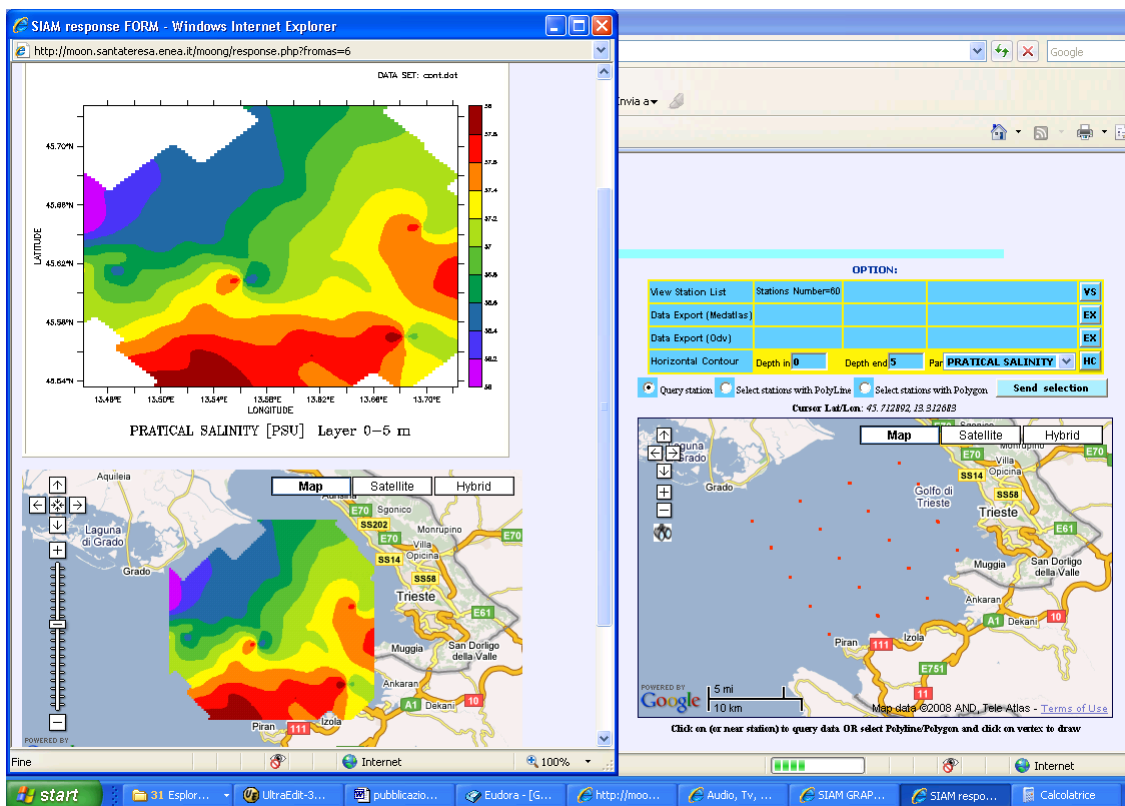
## Example: Vertical contour



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 click on HC (Horizontal contour). The horizontal map is overlaid on a Google map. The user can change the parameters of interpolation.