# Web interface for the Black Sea database with GIS functionality
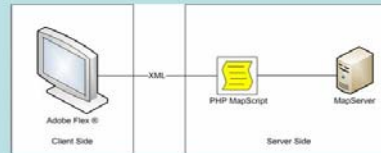
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Marine Hydrophysical Institute keeps and obtains a lot of various data for Black Sea region such as hydrophisical and hydrochemical data, current and temperature measurement from drifters, satellite images, operational oceanography data. To store and process this data the web GIS software was developed. This software is improved and now we have a new version, which is developed on the base of MapServer.



Figure 1. Oceanography data selection

The selection can be made visually by following criterions:

• hydrochemical and hydrophisical parameters;
• dates or season period;
• space, cruise, research vessel, drifter information.



Figure 3. Drifter's data selection

**FLEX + PHP + MapServer**



The web GIS software allows:
• import/export oceanography data from/to ODV format;
• select hydrochemical and hydrophisical data from data base;
• select and visualization of climatic atlas maps which are stored in shape format
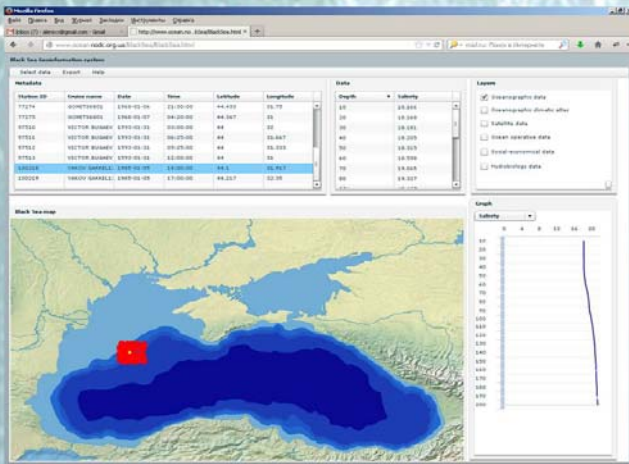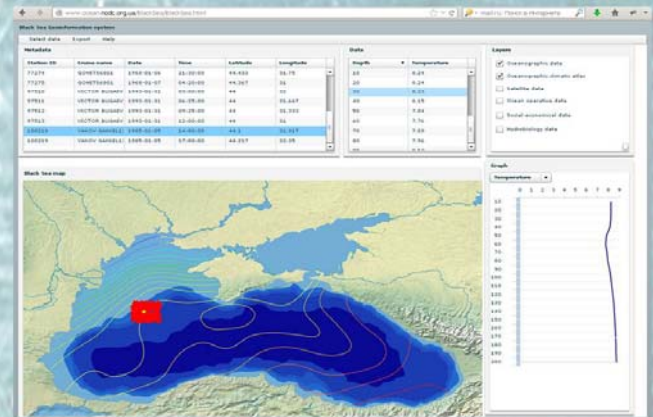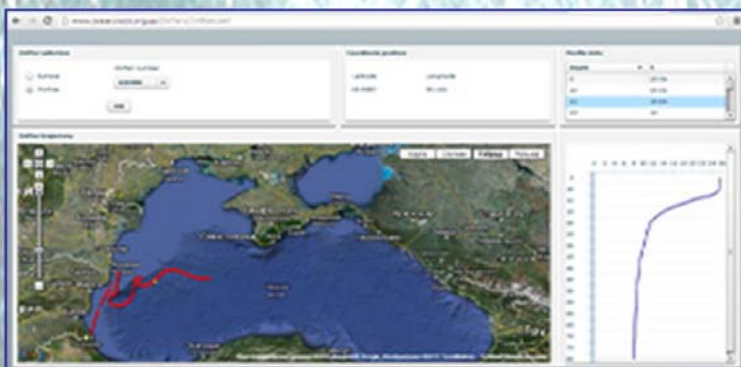• overlays and interaction work with map.



Figure 2. Oceanography data and temperature surface map on January

The results are presented on the map and by plots for each parameter. Also metada and data are shown. At the Figure 1 visual selection of oceanography data is shown. You can see the overlay oceanography stations and temperature climatic map for January for surface at the Figure2. At the Figure 3 there is a drifter's trajectory and temperature profile.
•Export selected oceanography data to ODV format and to ODV SDN2 Spreadsheet format.
• GIS software allows to make overlays of different kind of information such as satellite images (MODIS AQUA Sea surface temperature, Chlorophyll concentration and Water leaving radiation ), monthly, seasonal and annual climatic maps for the hydrophisical and hydrochemical parameters for main hydrological levels, meteorological information.