

### Problems of satellite data delivery and its solution way in the FEB RAS (Far Eastern Branch of Russian Academy of Sciences) Centre for Regional Satellite Environment Monitoring

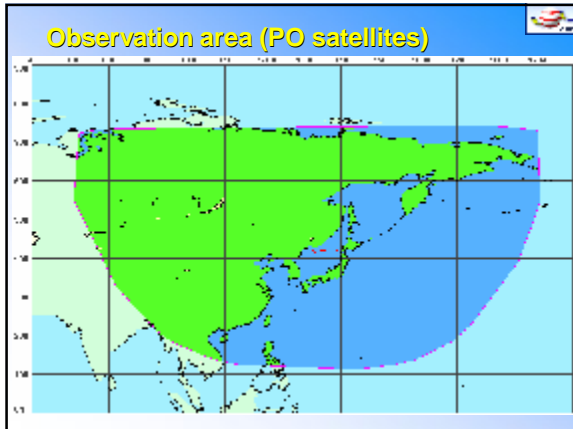
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The FEB RAS Center for Regional Satellite Monitoring of Environment was created on the base of Satellite Monitoring Laboratory of IACP FEB RUS at 1999.

The purpose of the Center is to receive, process, deliver and acquire of satellite data for research and economic applications.

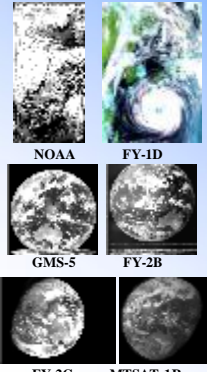
The Center and its data sets have been registered in Global Change Master Directory ((GCMD) NASA subdivision) as Satellite Monitoring Laboratory, Institute of Automation and Control Processes, Russian Academy of Sciences (SML/IACP/RAS)

### Satellite data reception

At the present time the FEB RAS Centre allows to receive and process high-resolution data of polar-orbital satellites NOAA, FY-1C, FY-1D, SeaStar/SEAWIFS, as well as geostationary satellites FY-2C and MTSAT-1R data for satellite monitoring of ocean and atmosphere.

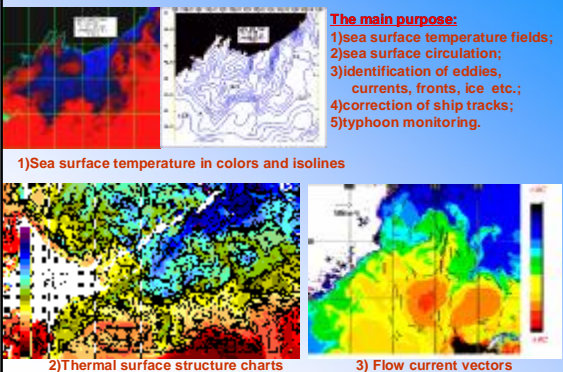
Joint processing of various satellite data allows to get more complete information in time and space about sea surface and atmosphere phenomena.



### Basic satellite products

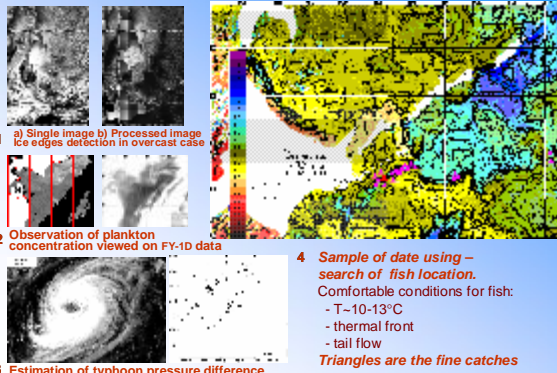
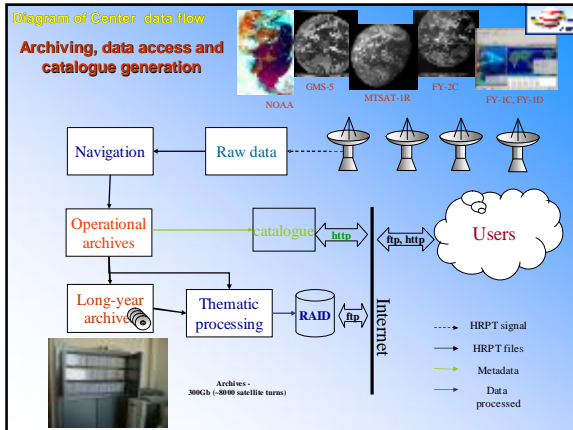
The main purpose:

- 1) sea surface temperature fields;
- 2) sea surface circulation;
- 3) identification of eddies, currents, fronts, ice etc.;
- 4) correction of ship tracks;
- 5) typhoon monitoring.



### Research and development

- 1) Single image b) Processed image ice edges detection in overcast case
- 2) Observation of plankton concentration viewed on FY-1D data
- 3) Estimation of typhoon pressure difference
- 4) Sample of data using - search of fish location. Comfortable conditions for fish:
  - T -10-13°C
  - thermal front
  - tail flow
 Triangles are the fine catches

**Main problems:**

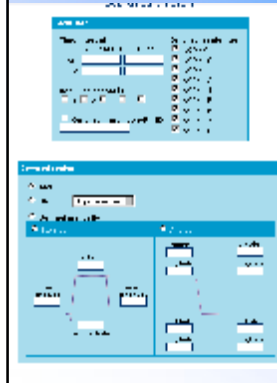
**Metadata access:**

A decision realized in Global Earth Observation Information Systems such as EOSDIS(NASA) and INFEO/EOPortal (ESA) is the more reasonable for terminal users. The problem is to adopt existing software for integration in these systems and to generate data and metadata according to formats needed.

**Data access:**

- selection of the way to data access (OpenGIS or ESIMO);
- control and forming of user requests on satellite data processing;
- determination of data formats for thematic processing of the satellite information with popular software (RDASD, ENVI, IDL, MATLAB ...).

**System of metadata ordering**



To access to metadata the WEB interface has been developed both on interactive and on automatic base.

Data acquisition of high resolution satellite information has been begun since 1993.

There are follow data in archives:

- NOAA-(from 9 up to 18) satellites (radiometers AVHRR/HRPT TOVS/ATOVS)
- FY-1D (CHRPT data)
- GMS-5 (radiometer S-VISSR)
- FY-2B (radiometer S-VISSR)
- FY-2C (HIRID data)



**To access to satellite data of the FEB RAS Centre the site was constructed (www.satellite.dvo.ru).**

The site provides an access to up-to-date satellite data (the latest NOAA and FengYun), archive data and control of the FTP server operability.



**Output data formats**

For users output data are delivered as projections (Mercator /Equi-intercept) in forms:

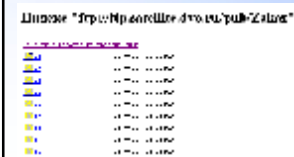
1. digital array F34\_1 - 1byte on pixel  
F43\_2 - 2 bytes on pixel
2. Text array – list of geo-coordinates and pixel values
3. Graphical files (bmp, pcx, gif ... etc)

Data output features			
Projection	Type	Channels	Format bmp,pcx,txt,F34_1(.prc),F43_2(.prc),f34_2(.prc)
Mercators:	Color:	1,3	.bmp,F34_1
Equi-intercept:	Grayscale:	2,4	.pcx ,F34_2
		5,a1	.txt

**FTP://FTP.SATELLITE.DVO.RU AND DIFFERENT USERS**

FEB RAS Satellite Center was organized for data processing and delivery to different users in real time.

FTP://FTP.SATELLITE.DVO.RU/  
FTP://FTP.SATELLITE.DVO.RU/PUB/DATA  
are available for all users  
Personal folder and possibility to make request on data processing are available for registered users



**A remote user is afforded to make a request for satellite data processing through**

