# MetcapPlus Software Installation and Training
# Kazhydromet in Astana, Kazakhstan
## As a Part of CARFFG System

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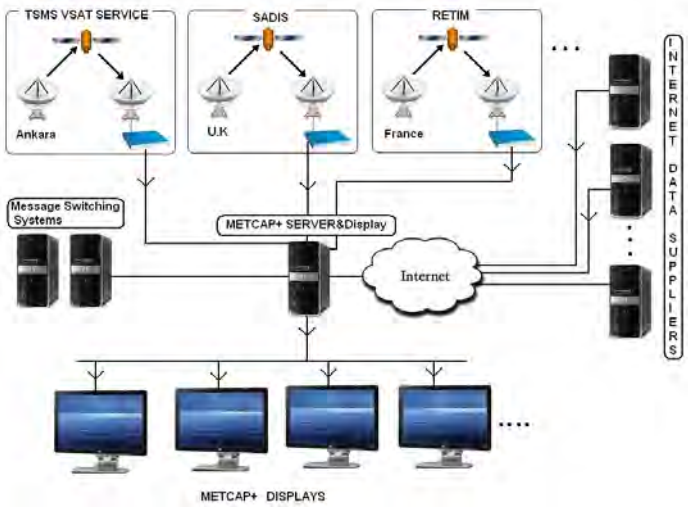
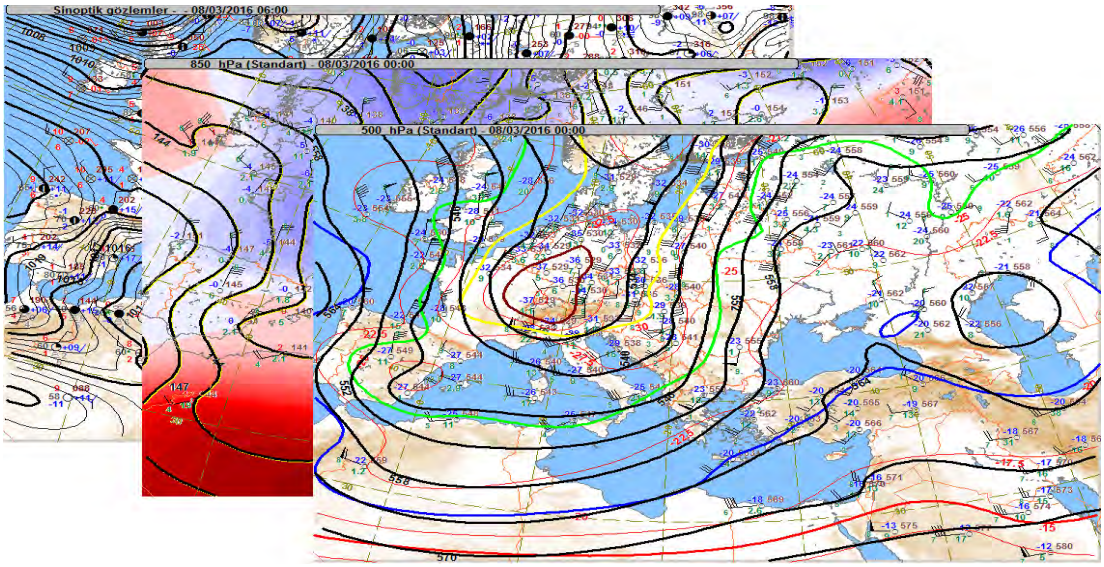
# What is MetcapPlus?

MetcapPlus is the latest version of the Meteorological communication and visualization package developed by Turkish Meteorological Service staff. Main purpose of the package is to simplify analyzing actual, numerical, remote sensing and many other meteorological charts and maps to create weather forecast, comparing actual weather conditions with climatological values etc. It runs on windows platform. The package consists of many dependent and independent modules. Its language may be set as Turkish, English or Russian. Some of the main modules of it may be summarized as follow:

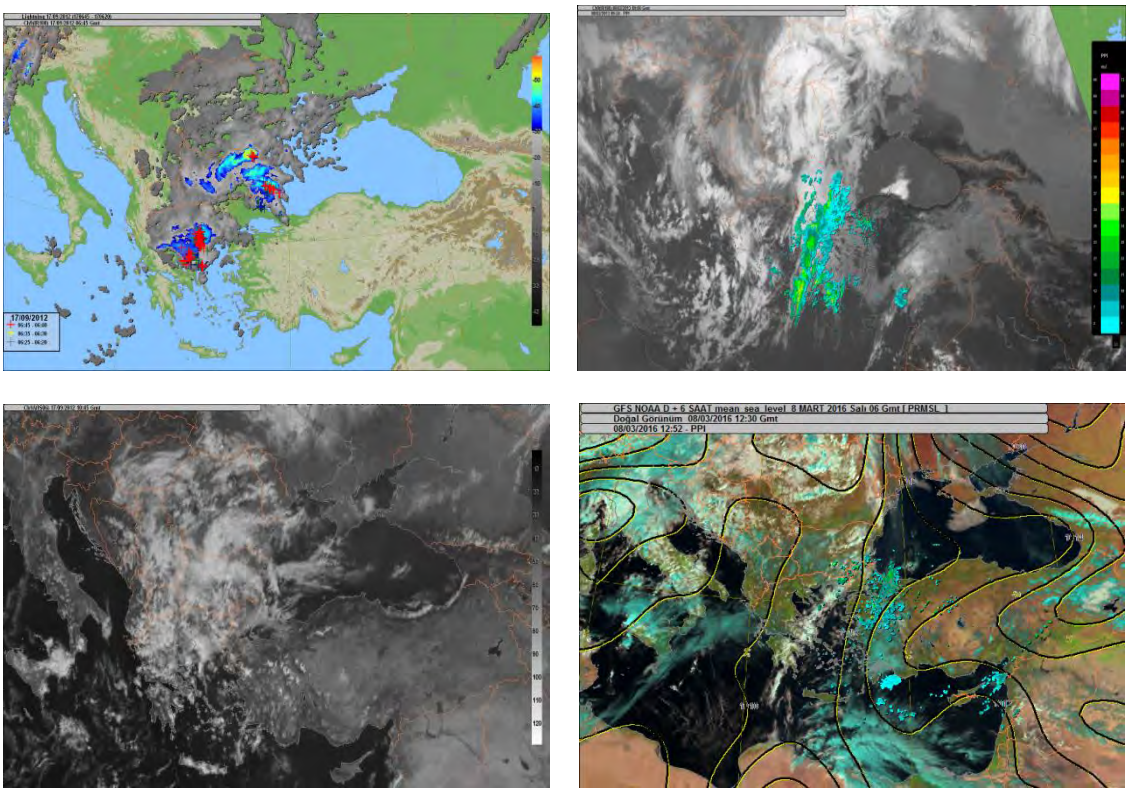
**1 – Data Sources:** The package uses data from different sources in different formats. MetcapPlus digests data from GTS sent to PC; it retrieves data from automatically or manually from Internet. Data in TAC (SYNOP, TEMP, METAR, TAF, SHIP, and AIRCRAFT etc.) and binary formats (BUFR, GRIB1, 2) are read and decoded. It also send to meteorological bulletins and reports to MSS. If the Pc on which MetcapPlus installed is connected to internet meteorological observational data from public sites (e.g., weather.cod.edu, atmos.albany.edu etc.) and forecast data up to 15 days (e.g., NOAA).



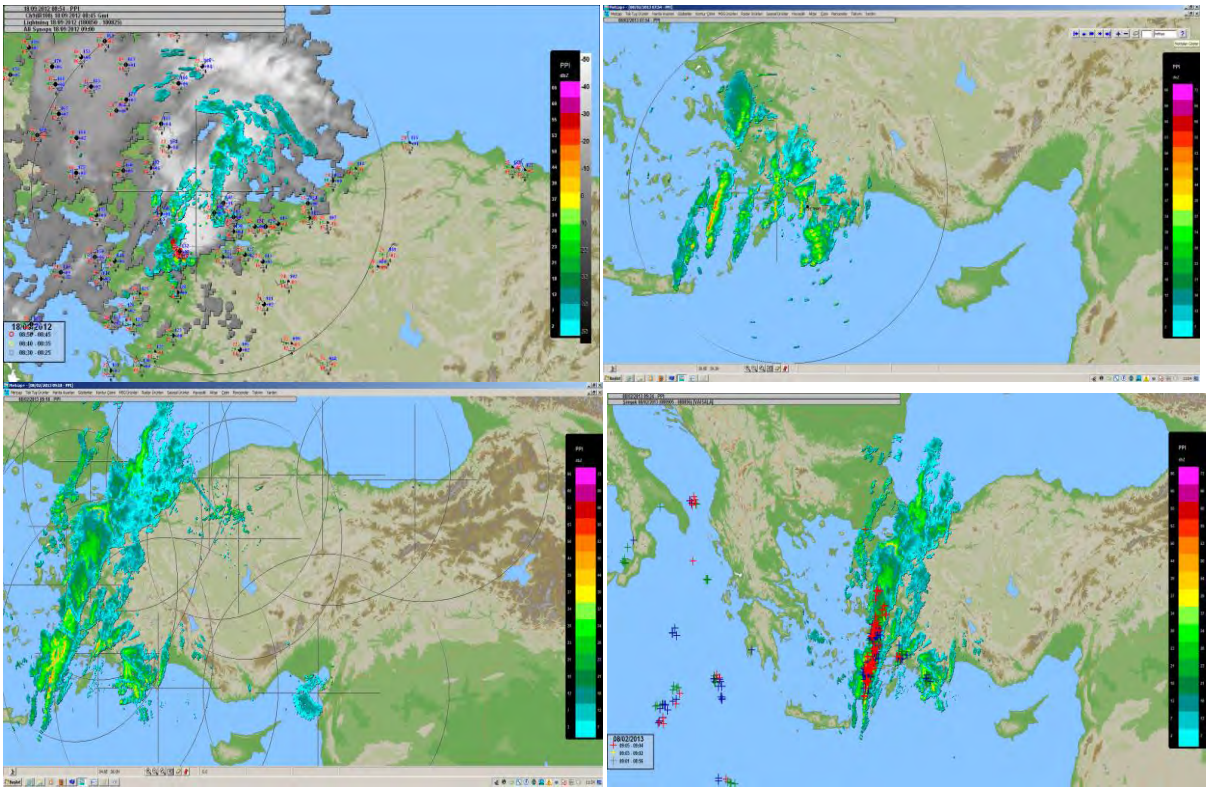

**2 – Actual Map (Charts) Generation:** Meteorological Maps for different regions and levels may be created at any time by users or automatically. Some of the actual charts may be listed as Surface synoptic, standard upper level charts from 1000 hPa to 100 hPa, instability charts derived from Temp observations, thickness charts etc. Different chars may be overlaid to make better analysis. Contouring may be done all measured parameters.



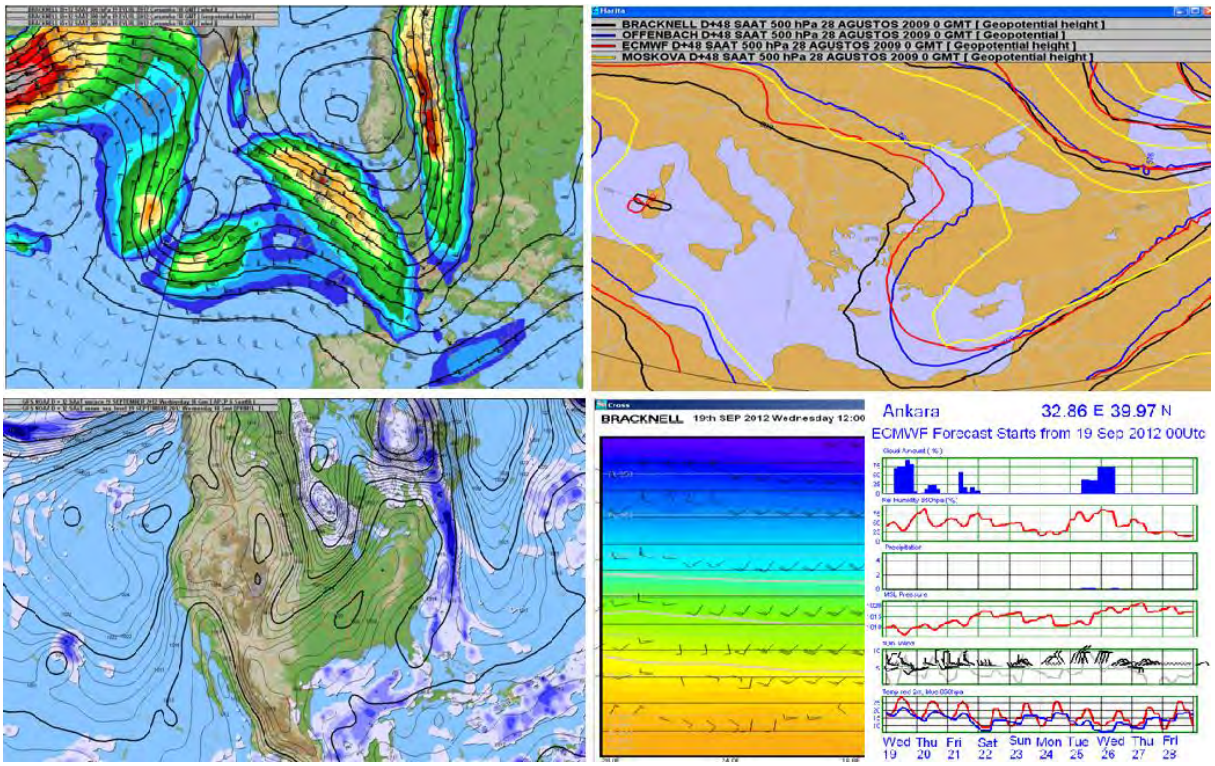

**3 – Satellite Images:** Satellite data received from MSG ground reception systems are used to create satellite images from different channels. It is possible to animate, zoom in these images. It also creates RGB products by using data from different channels.



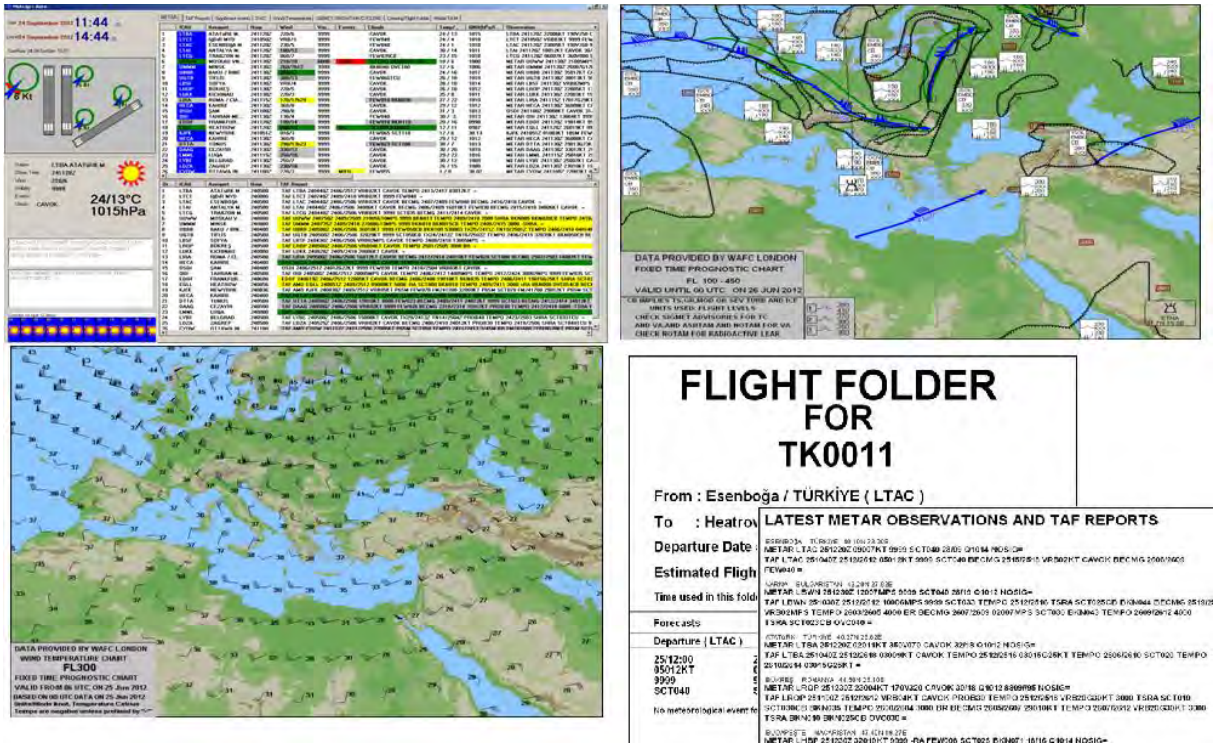

**4 – Radar Images:** Radar data in BUFR format are used to create different radar products like PPI, Max. Radar and satellite products can be combined with other products.



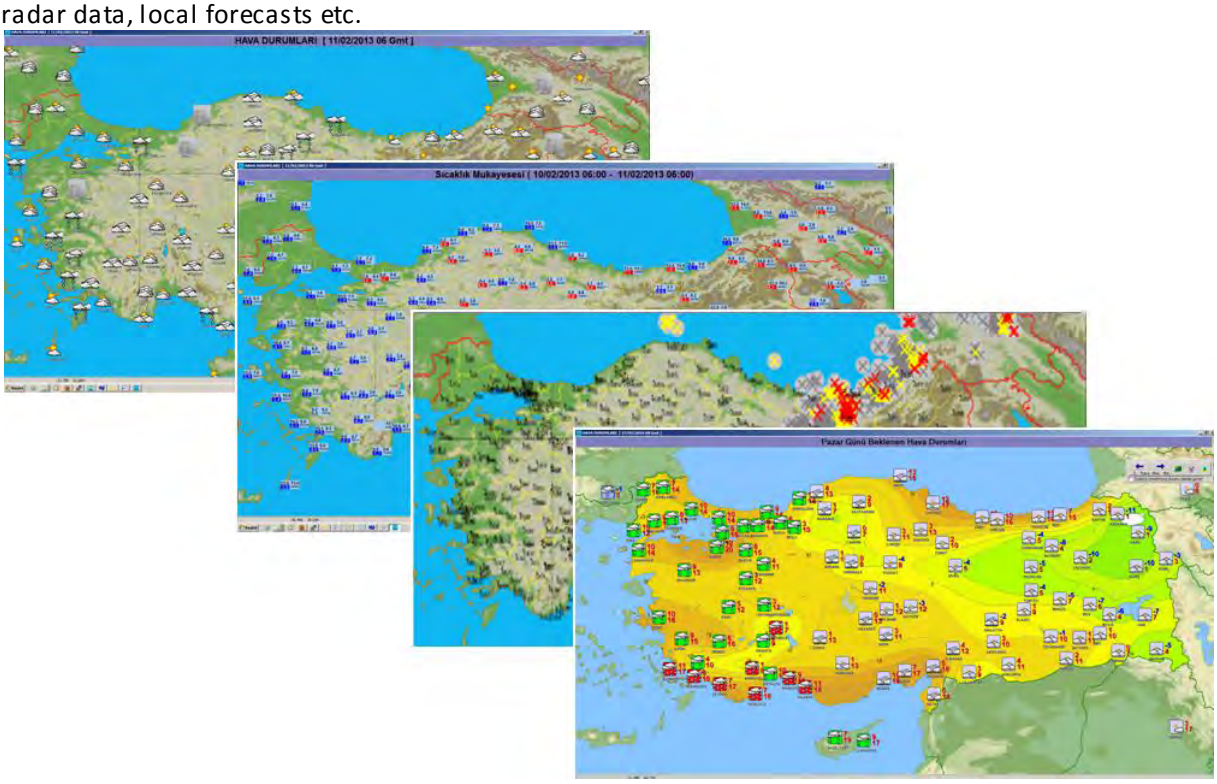
**5- NWP Products:** Forecast data received in GRIB, 2 from different can be displayed for selected regions in different contouring formats for all calculated parameters like geo Height, temperature, wind speed and direction, Relative humidity, clouds etc. Data from different sources can be combined to see different in forecasts.



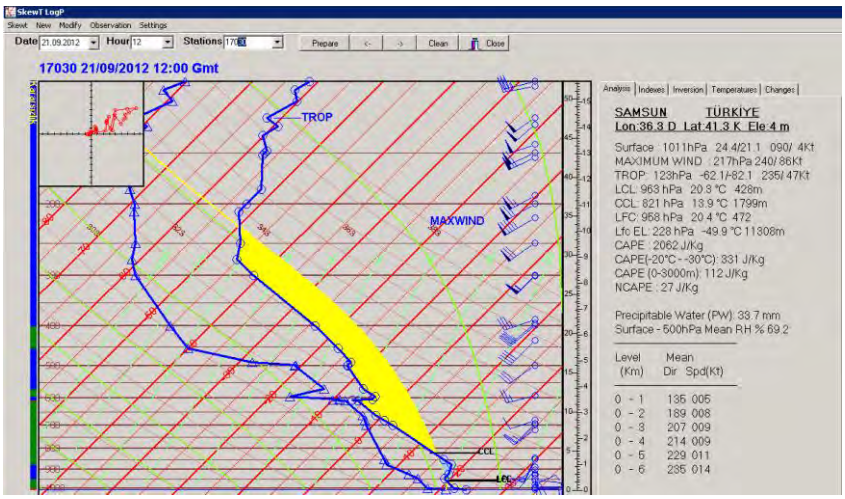
**6 – Aviation products:** The package has a powerful aviation module to observe latest airport reports, forecasts and create flight documents for any flight. Local or data from SADIS system in TAC and binary form are used for this purpose. Snow tam, hurricane/typhoon reports and volcanic ash reports are displayed on the maps.



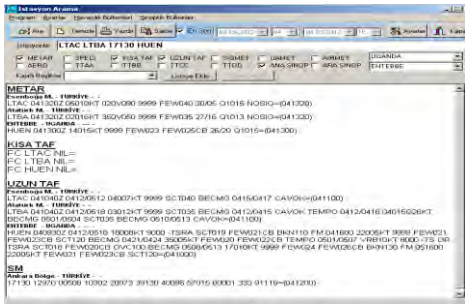

**7 –Weather Monitoring :** Latest weather conditions for selected regions are displayed and updated with the latest observations. Weather monitoring contains, latest metar,synop observations, Taf reports, lightning data, radar data, local forecasts etc.



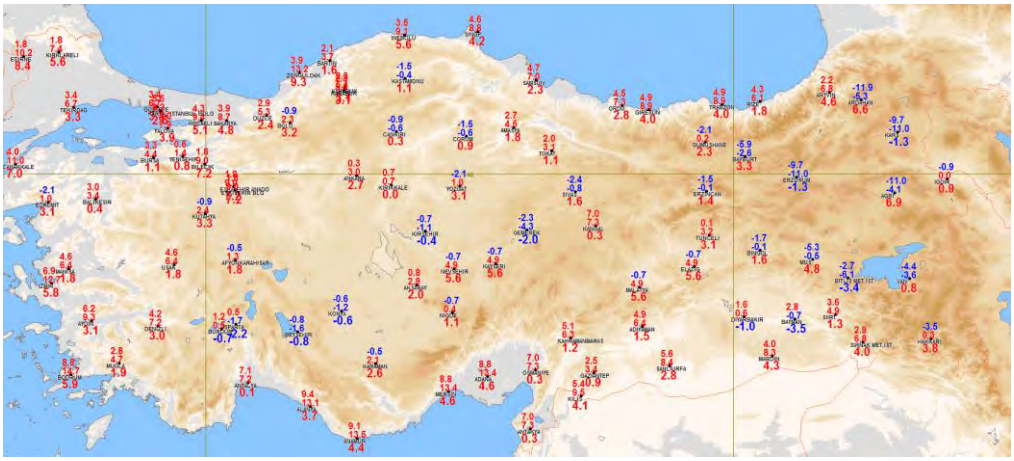
**8 –Skew-t Log-p Diagram:** Upper level observations from different stations are used to create these diagrams. Latest atmosphere conditions and derived indexes to determine instability in different levels are calculated to help the forecasters.




**9 – Data Access:** All received meteorological bulletins and stations in them may be access by the users with a powerful search tool.




**10 – Climatological comparisons:** Climatological data for some stations over the world may be listed. Latest measured values may be compared with those values.



### MetcapPlus Software Users:

**Turkey:** Main and local forecasting centers, all airports are using the package since 2012
**Azerbaijan**: Main forecasting center since 2014
**Georgia**: Main forecasting and telecommunication center since 2014
**Bosnia-Herzegovina**: Old version was installed in 2002. It will update this year.
**Cyprus**: Main forecasting center since 2013
**Yemen**: Main forecasting center since 2014
**Ethiopia**: Training has completed. 2016
**Kazakhstan**: Installation and training completed at Forecasting center in Astana 2016.

### How to Access MetcapPlus :

Turkish Meteorological Service gives permission to install the package to national Meteorological Services and governmental organizations after receiving official letter from the head of the organization. Installation and training cost are expected to cover by demanding organization. User manual may be downloaded from EUMETSAT internet site.

## Work Schedule

**Day 1:**
After reception by deputy Director General MetcapPlus Package was installed a PC at forecasting center. Data reception from internet was set and map regional setting for Kazak Forecasters was set also.

**Day 2:**
Training on use of MetcapPlus package was started with six forecasters from forecasting department. Map setting, creating user defined areas, preparing synoptic charts and contouring are explained in the morning session. Creating Upper Level charts, contouring, changing observation size and density worked together with the forecasters.

**Day 3:**
Creating NWP charts, creating charts automatically was explained in the morning session. Using satellite data, Creating satellite image images, combining them with other charts were the topic for afternoon session

**Day 4 :**
Printing charts, skew-t log-p diagram, bulletin search, and station search, program settings were explained and trained with forecasters was completed. Setting MetcapPlus program on a master and Slave pc was studied with technicians from computer division and MetcapPlus package was installed on two PCs.

**Day 5:**
A brief wrap up meeting was held and information about the package was given to a few colleagues from the other Division of Kazhydromet. Deputy Director was visited and informed about the works.

**Problems:**

No important problem was faced during installation and training. Synoptic Data from Kazakhstan stations (other than global stations) and upper level data were created by the IT division and digested by MetcapPlus. Surface and Upper level data will be automatically ingested into MetcapPlus PC. A conversion program was written for changing format of these data.

GFS data was supplied by Numerical weather prediction section was used by MetcapPlus without problem. This data will be put MetcapPlus PC twice a day regularly.

The only problem is using Russian GRIB data. It is intended that they will be put automatically into MetcapPlus by Kazhydromet IT staff.