

Geospatial Support in the European Union Military Staff

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The aim of the EU Geospatial Support is to ensure the provision of Geospatial Information (GI) and associated specialist support required for the planning and execution of the activities related to the European Security and Defence Policy (ESDP), to include intelligence processes and the planning and execution of current and future military and civilian operations, training and exercises. Its purpose is to identify responsibilities of the geospatial staff and the member states, to define processes, and to ensure provision of GI which is up to date, usable and sustainable.

EUMS

The European Union Military Staff (EUMS), established in June 2001 in Brussels in Belgium, is a General Directorate within the General Secretariat of the Council of the European Union (GSC). It is the only permanent integrated military structure of the European Union providing in-house military expertise for the Secretary-General of the Council and High Representative for the Common Foreign and Security Policy (SG/HR). The EUMS works under the military direction of the European Union Military Committee (EUMC), to which it reports. As a GSC department directly attached to the SG/HR, it works in close co-operation with other departments of GSC. It is composed of personnel seconded from member states as well as civil servants seconded from GSC and the European Commission.

Its mission is to perform early warning, situation assessment and strategic planning for missions and tasks as foreseen in article 17.2 of the Nice Treaty (TEU) including those identified in the European Security Strategy (published in December 2003). The mission also includes the implementation of policies and decisions as directed by the EUMC.



Fig. 1 EUMS logo

The EUMS is led by the Director General (DGEUMS, a three-star general) who is assisted by the Deputy Director General and the Chief of Staff (DDG/COS, a two-star general). Currently the EUMS has the following divisions:

- Policy and Plans Division prepares policy, doctrine, concepts, advance military strategic planning, force planning, and capability development.

- Intelligence Division provides strategic intelligence planning, requirements and procedures, including early warning and situation assessment.

- Operations and Exercise Division serves as the focal point for strategic crisis response planning, military crisis management operations, exercises, training and lessons learned.

- Logistics and Resources Division provides strategic advance and crisis response logistic planning and assessment for operations and exercises, and provides administrative support to EUMS.

- Communications and Information Systems Division (CIS) prepares the development of policies and guidance for planning, implementation, operation and maintenance of CIS, in support of the ESDP activities.

- Executive Office co-ordinates the EUMS internal staffing and the EUMS external interface with Military Delegations of EU member states, other EU bodies, NATO, United Nations (UN), other international organisations, other nations and international institutions.

- The Civilian/Military Cell enhances the EU's capacity for crisis management planning, reinforces national headquarters (HQ) designated to conduct an EU autonomous operation, assists in co-ordinating civilian operations and generates the capacity to plan and run an autonomous EU operation.

There is a small "Geo Team" within the CIS Division consisting of the Geo Officer and the Geo Technician. The Geo Officer is responsible for the planning and requirements for EUMS geospatial support and he also formulates all geographic aspects for EU-led operations and exercises. The Geo Technician is the custodian of the EUMS geospatial database, he manages and maintains data repository, he creates and distributes geographic products, and he also provides geographic analysis and consultancy to EUMS staff and other customers.

To share know-how, exchange data and products, and work more efficiently the Geo Team co-operates closely with the European Union Satellite Centre (EUSC) in Torrejón de Ardoz (Spain), the Joint Research Centre of the European Commission (JRC) in Ispra (Italy), the United Nations (UN) and especially with its Cartographic Section in New York (USA), the NATO and others.

EUMS GIS System

The requirement for the EUMS GIS System was defined as it has to provide a central, accessible repository of geographic data and easy, end user access to GIS tools and functionality. The authorized users of the system should be able to interact directly with the data and to perform search, consult, print and request. The European tender was published in September 2003 and the contract was awarded to Intergraph in January 2004.

The current EUMS GIS System has three key elements:

- Geospatial database
- Web Map Server
- Cartographic workshop

The Geospatial Database is represented by the Oracle 9i and resides on a dedicated GIS database server. The database contains vector data, raster data, imagery, elevation data, and reports. All the authorized users have read access via the standard SQL interface and can query, display and use digital geographic data in support of their requirements. The database is controlled by the Geo Technician who has full access to the data.

The GeoMedia Web Map Server resides on a dedicated GIS web server. It hosts two applications allowing users to discover what digital geographic data is available for a given area and to display the selected data. These applications are the GIS Catalogue and the GIS Web Viewer and they are run within a standard web browser on users workstations.

The GIS Catalogue allows users to query the database in several different ways: they can use the alphanumerical selection of a place of interest specifying the name of a city, country, region, or crisis area or they can use exact geographic coordinates. They can also use the graphical selection of a place of interest and select the point or the area in the background map. Before the SQL is generated automatically users can set a filter so they can specify a type, a date, or a scale of data that they want to search for. The results of any query are displayed as a textual list and also graphically with the footprints of matched datasets displayed over a background map.

The GIS Web Viewer allows users to display selected data and to perform some basic GIS tasks. The application allows to zoom in, zoom out and pan, to overlay vector data over raster data, to toggle layers, to display grid, to change projection (geographic to UTM), to measure distance and area, to read out location and bearing, etc. The users can also print a map view or copy a selected view to any office document.

The Cartographic Workshop comprise the hardware and software enabling the Geo Technician to maintain the data within the geospatial database and to support the routine work of the EUMS. This comprise data import, data manipulation, metadata generation, geographic analysis and in particular map production. The workshop is represented by the two high end GIS workstations running professional software such as GeoMedia Professional, ArcGIS, ERDAS Imagine, Adobe Creative Suite, etc. One colour A3 printer and one colour A0 plotter with a large-format scanner are also a part of the workshop. To allow the Geo Technician to import a variety of geospatial data to the database Intergraph integrated a number of EUMS Custom Commands into the GeoMedia Professional, for example Import VectorData, Import PDF Files, Raster Ingest, Register DTED, Save Symbology, etc.

Production of the Geo Team

The Figure X shows a current GIS process flow within the EUMS. The Cartographic Workshop serves as a focal point for data manipulation prior to import into the geospatial database and also for all geographic production and analyses. All the digital data (not only the EUMS own production but also and mainly digital data purchased by the EUMS and received from the EUSC and other partner institutions) are stored in the geospatial database. Users query the metadata and receive an information about the data available for their area of interest. They can display and print the data. In case of any other special request users contact directly the Geo Technician.

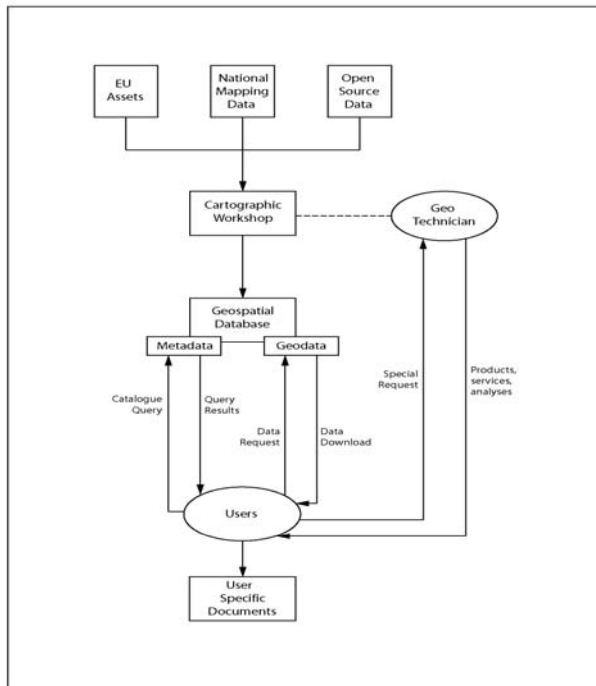





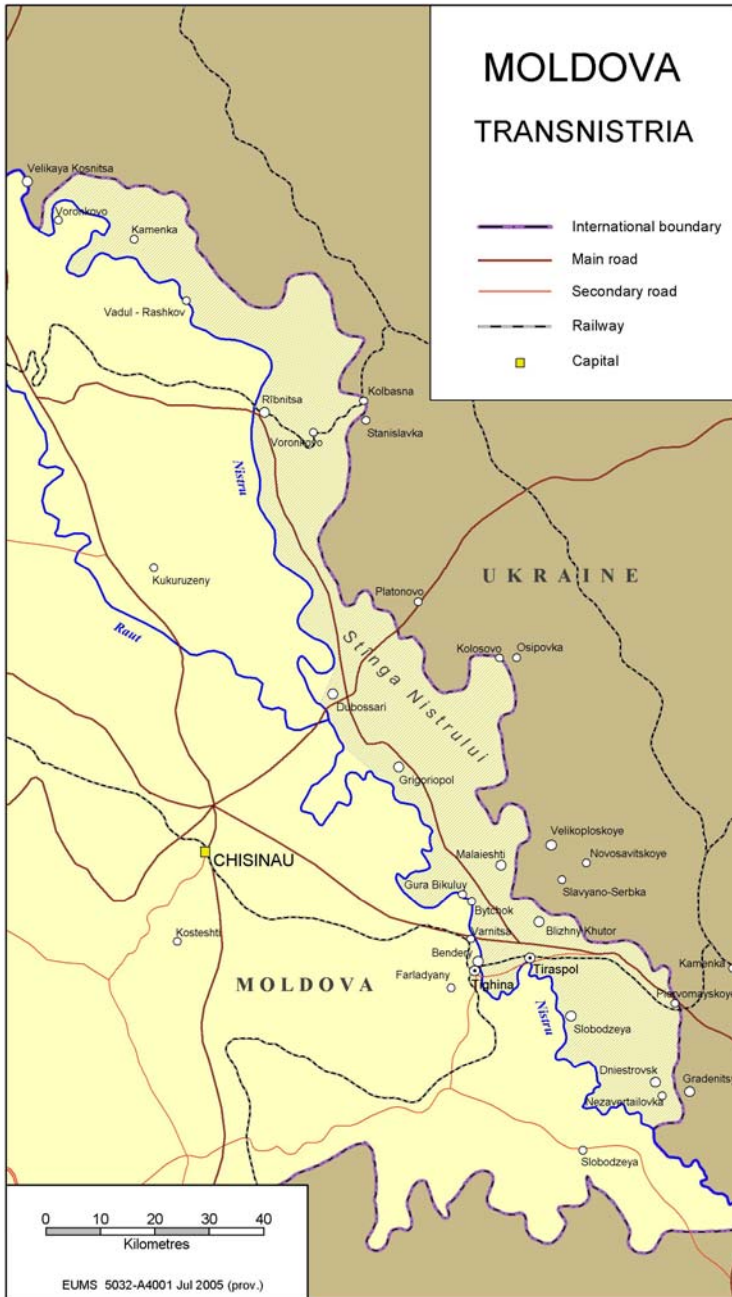


Fig. 2 EUMS GIS Process Flow

The map production of the EUMS ranges from the simple graphics and reference maps designed for presentations and reports to general purpose, administrative, thematic, and image maps used as wall maps, country profile maps or planning maps. Also scanning and printing on demand represents a significant part of the Geo Team activities.

MOLDOVA TRANSNISTRIA

-  International boundary
-  Main road
-  Secondary road
-  Railway
-  Capital



0 10 20 30 40
Kilometres

EUMS 5032-A4001 Jul 2005 (prov.)

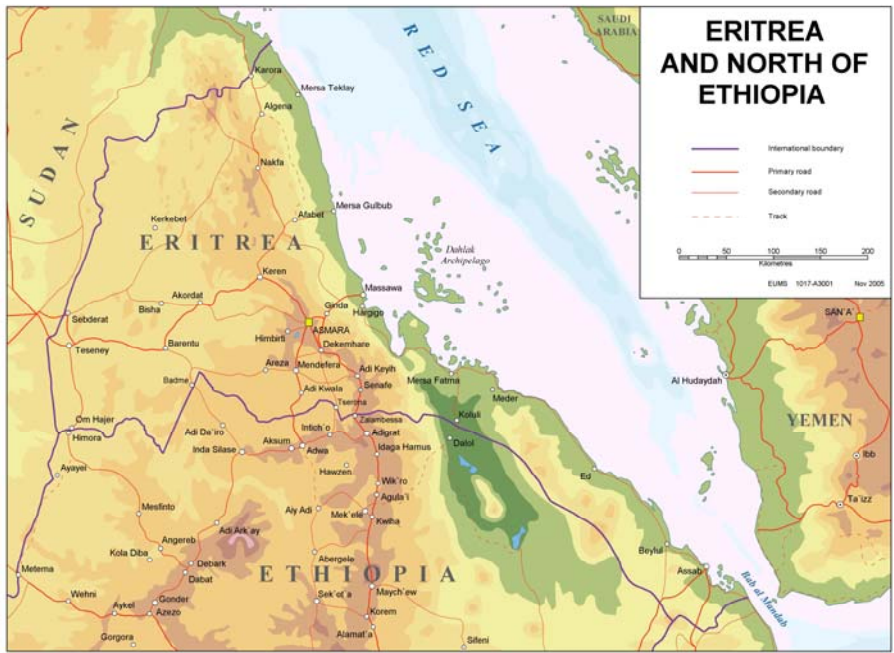


Fig. 3, 4, 5 Examples of the EUMS production
 (NorthCaucasus_300.jpg, Eritrea_NorthEthiopia.jpg, Transnistria2.jpg)

Future development

In the near future the development of the most promising project of the European Union Operations Wide Area Network (EU OpsWAN) will be completed. The fast, secure and reliable network will link many actors in Brussels with several member states and will provide secure communications, i.e. e-mail, data, voice and fax. As a part of this network the geospatial data server will be installed in the EUSC to provide all the users with up-to-date satellite data, analyses and geographic products.

Also the Geo Team at the EUMS will be reinforced. One Image Analyst and one Desktop Publishing specialist will start working in the team soon which certainly improve the efficiency and productivity of the work.

Summary

The European Union Military Staff, based in Brussels, is the only permanent military structure of the EU providing in-house military expertise for the Secretary-General of the General Secretariat of the Council of the EU. Within its structure there is a geographic team responsible for geospatial support of the secretariat. The article deals with the mission and organisation of the EUMS, introduces the geographic team and its tasks, and also describes the GIS System architecture and its use for the daily work of the EUMS.