

UNECE - United Nations Economic Commission for Europe

Working Party on Transport Trends and Economics (WP.5)

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The Geographic Information System of CETMO

CETMO

Organization created in 1985 as the result of an agreement between Western Mediterranean countries (Algeria, France, Italy, Morocco, Portugal, Spain, Tunisia, Mauritania, Libya and Malta).

Mission

To develop regional cooperation at the institutional and technical levels with the aim of facilitating international transport conditions in the Mediterranean.

Specific Objectives

- To study transport flows, infrastructure and legislation, and to develop initiatives that facilitate transport.
- To study and provide information about the logistics and technological trends that influence the strategic position and competitiveness of the transport sector in Western Mediterranean countries.

Since 1997, CETMO acts as Technical Secretariat of the Group of Transport Ministers of Western Mediterranean (GTMO 5+5)

Since its creation in 1995, the GTMO has, among other objectives, the promotion of cooperation on transport issues in Western Mediterranean and the contribution to the Euro-Mediterranean partnership.

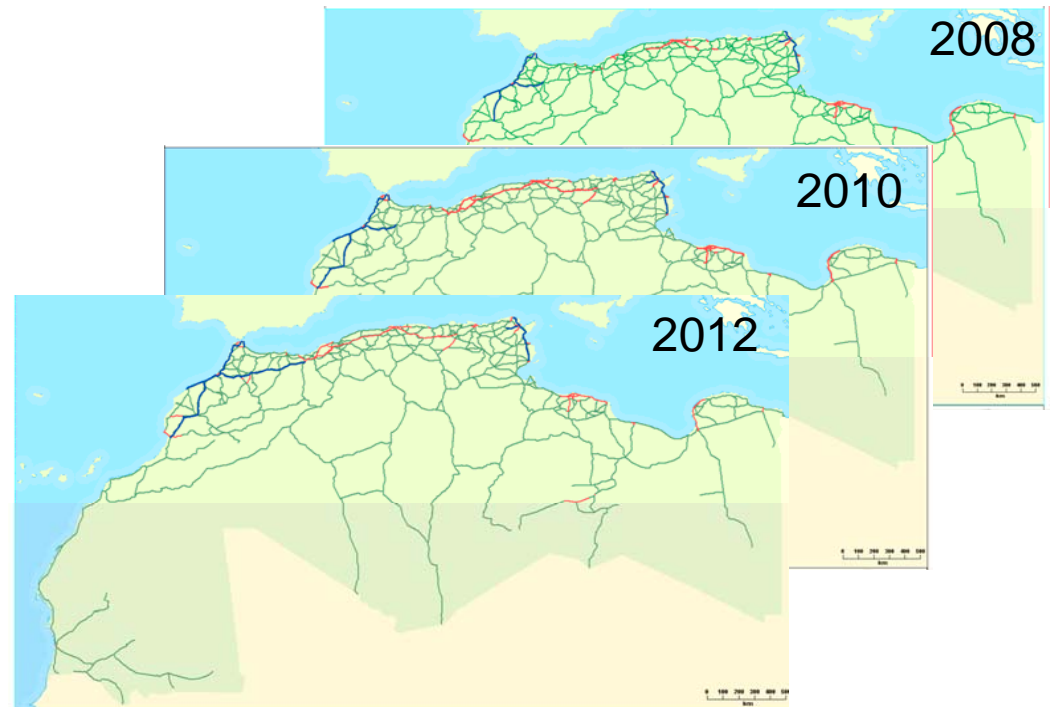
Among the priority areas of cooperation of GTMO 5+5 are:

- The definition and development of a multimodal network in Western Mediterranean
- The research of advantageous modes of financing transport infrastructure in the region
- The contribution to the development of the recommendations of the 1st Euro-Mediterranean Ministerial Conference on transport in Marrakech
- The modernization of enterprises integrated in the transport sector
- Reinforce security of transport in the region

Since the creation of CETMO, one of its main tasks is the construction and periodical updating of databases on transport:

INFRA database, which includes the characteristics of the transport infrastructure network in the Western Mediterranean:

- It comprises: roads, railways, airports, ports, transport terminals and infrastructure projects.
- This database contains information in alphanumeric and geographical format.
- Since 1996, the database was organized as a GIS and included data for Algeria, France, Italy, Morocco, Portugal, Spain and Tunisia.
- In 2008, new information of countries of the GTMO 5+5 was included: Mauritania, Libya and Malta.
- This information is especially relevant for countries of Maghreb
- Regularly updated



Directly related with GIS, CETMO has developed several activities:

DESTIN (2005 – Nowadays)

Destin project developed specific models for forecasting international traffic flows in Western Mediterranean, with the support of a GIS and the corresponding databases

Initially, DESTIN project was included within the EU's Fifth Framework Programme on R&D and, latter, it was extended and updated

Action 18 - RTAP (Euromed) (2009-2012)

The aim was the development of databases, methodologies, tools and expertise allowing to analyse regularly the transport system in the Mediterranean.

The result was a geo-referenced database to be used as GIS and a model for forecasting flows in Mediterranean countries

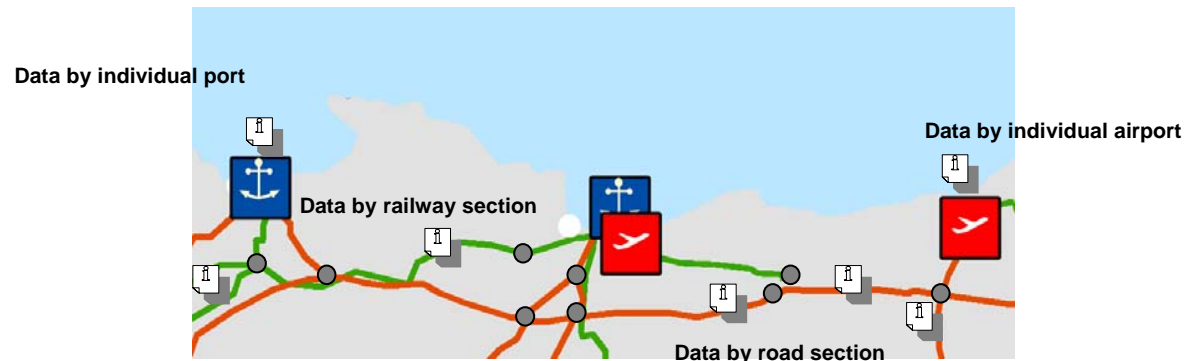
Main characteristics of the geographical data comprised by GIS of CETMO:

Homogeneous and unified structure of information for all the countries, which is especially relevant for countries in Maghreb:

- Coordinate systems, design, variables, units, codes, etc.

Topological structure of the geographical elements that allows the exchange of information with the forecasting transport model.

- Roads and railways sections are included as arcs of a graph
- Ports and airports are included as nodes of a graph

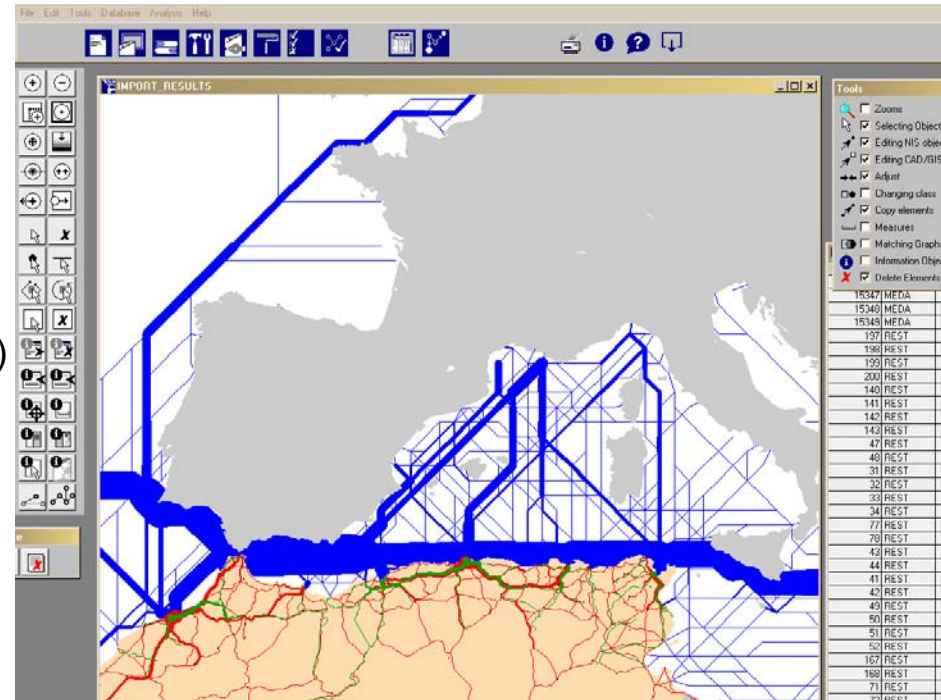


Some of the variables included in the database for the main entities are:

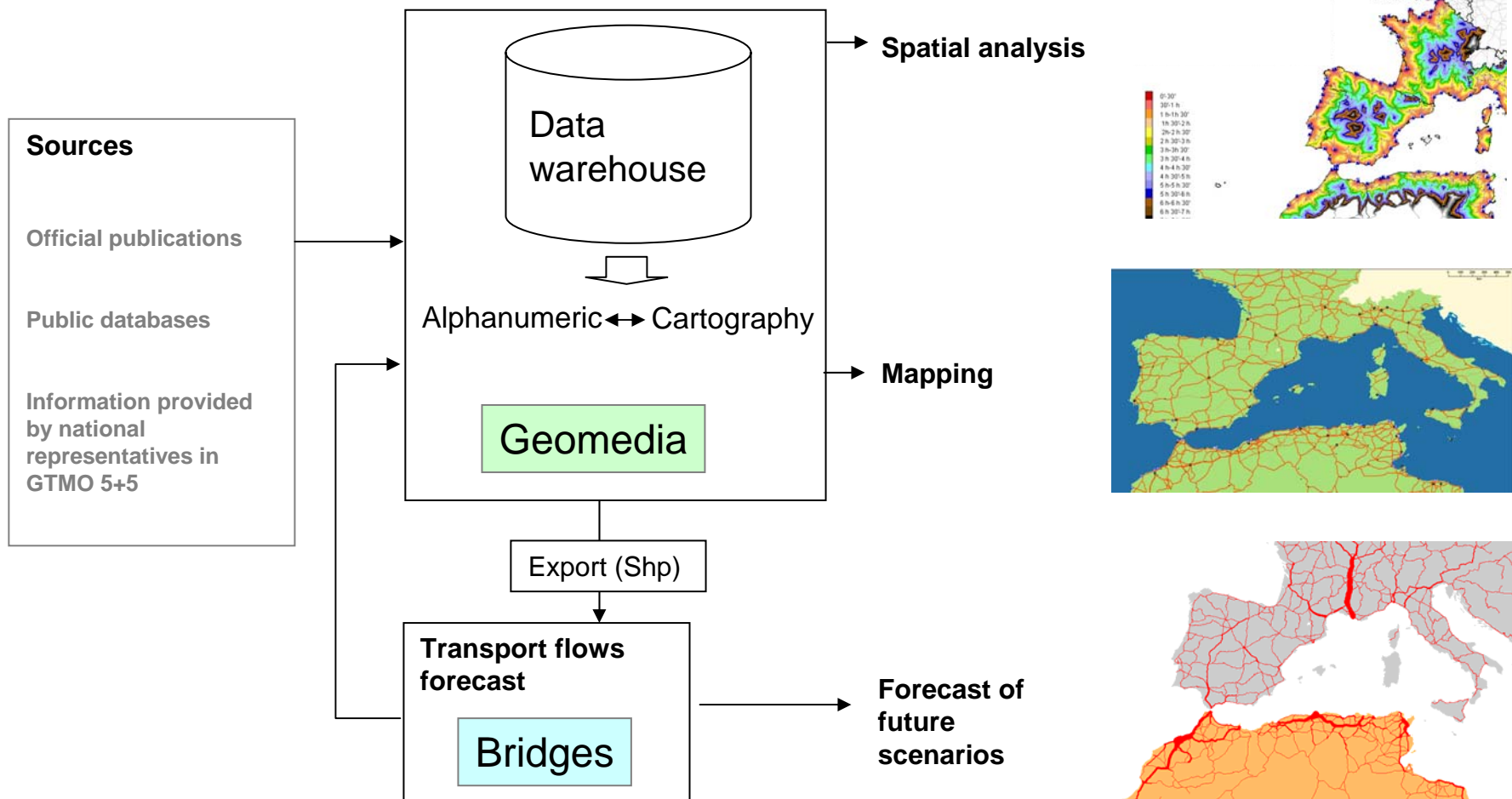
Roads:	Typology Profile Speed Average daily flows ...
Railway:	Type of line Type of track Gauge Electrification Trains by day Yearly flows ...
Ports:	Maximum depth Length of piers Capacities Volume of freight Volume of passengers ...
Airports:	Length of runway Number of positions Terminal capacity Flow of passengers Flows of freight

The GIS of CETMO is structured to provide information to a forecast transport model, based on Destin project:

- It is based on a modified 4 (2+2) steps scheme
(Generation + distribution)
(Modal Split + assignation)
- It takes into account international freight flows of Maghreb countries of GTMO 5+5
- It includes three modes of transport: Road, rail, maritime in a multimodal logistic chain approach
- It consider 9 types of products and excluded those with specific behaviours (oil, gaz, ...)
- It has been tested and calibrated several times



CETMO GIS Structure

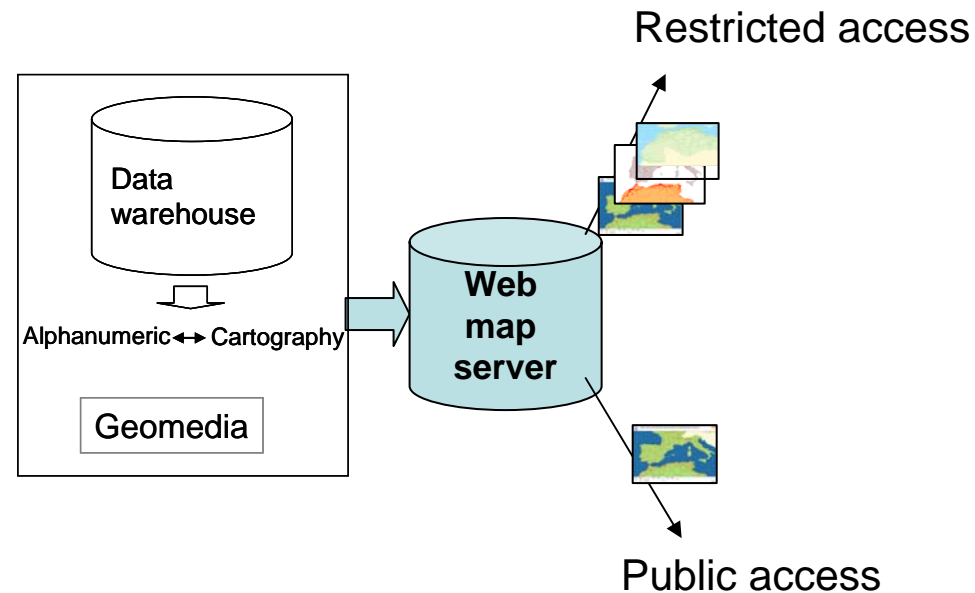


Current needs of CETMO (dissemination of results, exchange of information, greater visibility...) require new GIS functionalities

Geographic information has to be accessible by WEB

In the next months, a first step of a web application will be developed. It will allow:

- To display transport networks
- To display spatial analysis and studies
- To consult and analyse information
- Download information and data by registered users
- Services (WMS, WFS) that allow remote access to GIS of CETMO



- GIS focused on transport infrastructures: Roads, Railway, Ports, Airports, Terminals and Projects
- GIS includes information of the 10 countries of GTMO 5+5, but it is especially remarkable for countries of Maghreb
- Information regularly updated
- Structure of geographical entities and alphanumeric data is organised to be used in a forecast transport model
- Next publication of information via WEB-GIS

THANK YOU FOR YOUR ATTENTION

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