

BULGARIAN ACADEMY OF SCIENCES
NATIONAL INSTITUTE OF GEOPHYSICS, GEODESY AND GEOGRAPHY

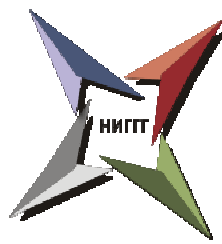
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**National Institute of Geophysics, Geodesy, and
Geography**

Bulgarian Academy of Sciences



COSMOS Matchmaking Event 18th March 2011, Sofia, Bulgaria



Draft Call Topics we are interested in

Space-based applications at the service of European Society (GMES)

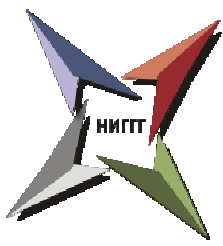
- ***Pre-operational validation of GMES services and products***
 - Research Support to Emergency Response Management
- ***Support to the coordinated provision of observation data***
 - R & D of/for the in-situ component
 - Climate Change – GMES service coordination
 - Consolidation of the user requirements for GMES

Strengthening the foundations of Space science and technology (SSF)

- ***Research to support space science and exploration***
 - Analysis and assessment of space data
- ***Research to support space transportation and key technologies***
 - Development of technologies enabling observations in/from space

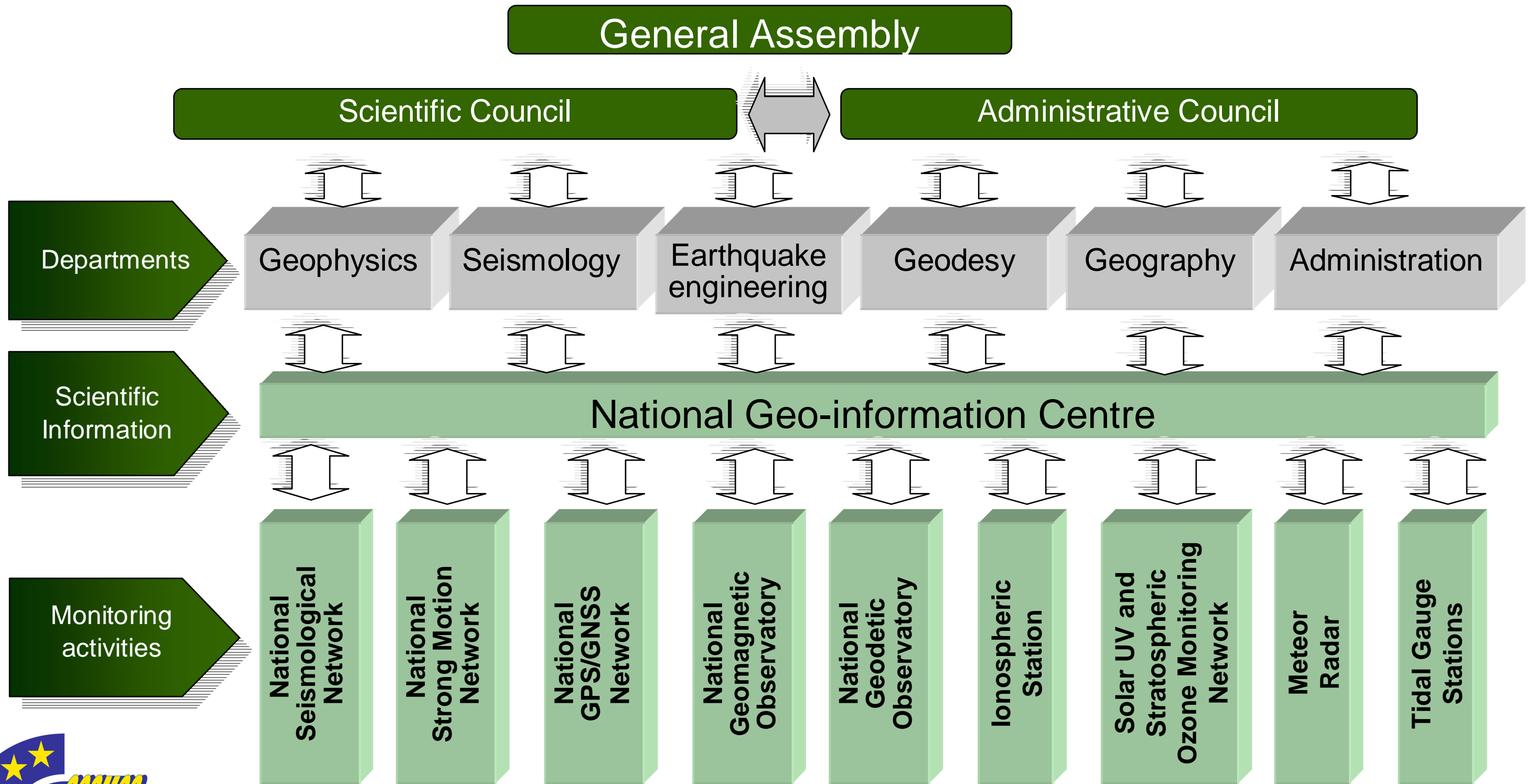
Cross-cutting activities

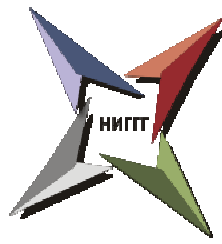
- ***Studies and events in support of European Space Policy***
 - Further development of the research agenda and thematic roadmaps in support of European Space Policy
 - Identification of emerging research needs, incl. reduction of vulnerability of space infrastructure



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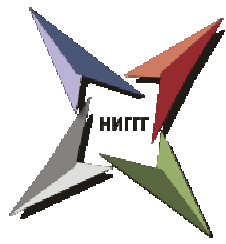
Organisational Structure





Short history of the organisation

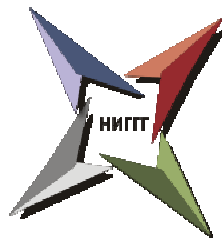
- Established as a legal entity in July 2010 on the basis of integration of the resources of four former BAS structures:
 - Geophysical Institute (established in 1960),
 - Central Laboratory of Geodesy,
 - Central Laboratory of Seismic Mechanics and Earthquake Engineering and
 - Institute of Geography (established in 1950)



Experience with the EU Framework Programme

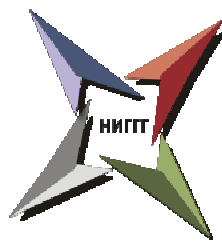
- EU 5FP: MEREDIAN-2 - Mediterranean-European Rapid Earthquake Data Information and Archiving Network
- EU 5FP: RISK-UE - An Advanced Approach to Earthquake Risk Scenarios with Applications to Different European Towns
- EU 7FP: iSOIL - Interaction between Soil-Related Sciences – Linking Geophysics, Soil Science, and Digital Soil Mapping
- EU 7FP: PASODOBLE - Promote Air Quality Services Integrating Observations – Development Of Basic Localised Information for Europe
- EU 7FP: Balkan GEO Network – Towards Inclusion of Balkan Countries into Global Earth Observation Initiatives
- EU 7FP: IGIT - Integrated Geo-spatial Information Technology and its Application to Resource and Environmental Management towards the GEOSS





Competencies

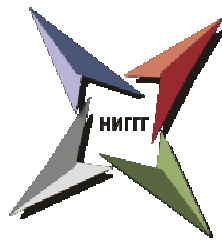
- **Geodata monitoring and emergency response services**
 - NIGGG is assigned **national** responsibilities (delegated by Council of Ministers) for continuous, 24-hour monitoring and emergency response services, including gathering, storing, processing, and delivering of data about the seismicity, geomagnetic field, ionospheric conditions, biologically-active UV radiation, atmospheric boundary layer dynamics, and stratospheric ozone layer thickness;
 - management of the data monitoring infrastructure;
 - international geo-data exchange.



Competencies

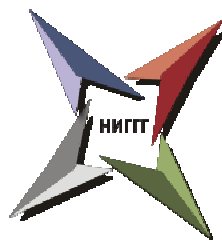
- **Classical and satellite geodesy** and Earth's shape
 - In-situ observation collection and analysis of the State reference networks data (GPS/GNSS, gravimetry, and leveling);
 - LiDAR-data processing and analysis.

- **Development of processing/validation methodologies** for integration and harmonisation of observation data (including ground-based, airborne and satellite-based) into geoinformation service chains and usage;
 - user-friendly access tools for data-mining;
 - GIS applications, including 2D/3D visualizations;
 - development/validation of methods for integrated spatial analysis.



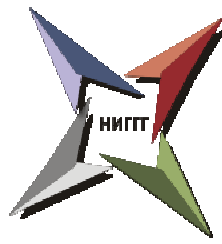
Competencies

- **Earth's environment protection and sustainable development services at local, national, and regional level**
 - climate change monitoring and analysis (litho-, hydro-, and atmosphere): paleo-climate reconstructions, archaeo-magnetism, paleo-geomorphological and paleo-geographical reconstructions, etc;
 - seismic zoning of Bulgaria;
 - investigation of the Earth's crust and upper mantle structure in tectonically active regions;
 - evaluation of earthquake scenarios, slope instability, and flood hazards risks;



Competencies

- **Earth's environment protection and sustainable development services at local, national, and regional level**
 - strategic environmental assessment and environmental impact assessment, including air, water and soil pollution, local climate, economic sectors, the national demographic and employment structure, and the settlement network;
 - vulnerability assessment of natural and anthropogenic systems;
 - ecosystem services;
 - urbanization, regional development strategies, economic specialization of counties and regions, tourist infrastructure, and trans-border cooperation, particularly in the Balkan, Danube and the Black Sea regions.

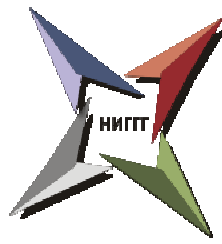


Competencies

Reference projects

- EU FP projects (see above)
- Crossborder program “Romania-Bulgaria 2007-2013: “Danube Cross-border System for Earthquakes Alert” – DACEA
- ESPON “Continental Territorial Structures and Flows (Globalization). Territorial Impact of Globalization for Europe and its Regions”
- NATO Science for Peace: “Modeling System for Emergency Response to the Release of Harmful Substances in the Atmosphere”
- NATO Science for Peace: Hemus NET





Contact and further information

➤ Contact person

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