

**Short Presentation of an Expertise Profile
for the 5th call Space in FP7**

Remote Sensing and GIS Department
Space and Solar-Terrestrial Research Institute -
Bulgarian Academy of Sciences

research institute

Bulgaria



COSMOS Matchmaking Event
18th March 2011, Sofia, Bulgaria

Draft Call Topics that we are interested in

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

➤ *Pre-operational validation of GMES services and products*

➤ Testing and validating the low time-critical components of the CONOPS

➤ Situation monitoring of the pre-frontier area at the external land borders

➤ Support to emergency response management

➤ Preparing take-up of GMES Sentinel data

➤ *Support to the coordinated provision of observation data*

➤ Research and development for In-situ component

➤ Consolidation of user requirements for GMES

Presentation of the *Remote sensing and GIS* Department of the SSTRI-BAS

➤ Structure of the organisation

The *Remote sensing and GIS* department includes 17 scientists, who have majored in the field of geography, geology, geophysics, engineering, mathematics, and archaeology.

➤ Short history of the organisation and/or working group

The *Remote sensing and GIS* Department of SSTRI-BAS has been established in 1974. The mission of the Department is development, improvement, and transfer of methods for environmental studies with integrated use of Earth observation technologies, geoinformation systems and ground-based methods. Training of Master students, PhD students, and experts in the field.

➤ Experience with the EU Framework Programme

The Department has been participating in over 40 national and international programmes and projects, some of them under the PHARE, 6th EU FP, SEE-ERA.NET, and INTAS Programmes.

Competencies

- List of competencies on the basis of the recent work programme Space
 - Mapping of terrain, transport infrastructure, land cover/land use, inventory landslide maps;
 - Digital Elevation Models (DEM) and digital terrain analysis, landslide susceptibility analysis, assessment of landslide risk and vulnerability and hazard zoning;
 - Monitoring of land cover/land use and anthropogenic changes;
 - Test site sub-satellite experiments and observations (aerospace test sites in Bulgaria);
 - Validation of satellite data products, i.e. vegetation and land cover products.

➤ Reference projects:

- ✓ SCHEMA – Scenarios for Hazard-induced Emergencies Management. Ref. Nr. BG 2005/017-353.10.06. 030963. Sixth Framework Programme EC.
- ✓ Testing PROBA-V and VEGETATION data for agricultural applications in Bulgaria and Romania (PROAGROBURO). Contract Ref. Nr. CB/XX/16. between the SSTRI-BAS and the Belgian Federal Science Policy Office (BELSPO), under the PROBA-V Preparatory Programme.
- ✓ Development of Methodology and Creating a National Data Base for NDVI, NPP and LAI Based on Satellite Data from NOAA AVHRR and MODIS. Contract Nr. ДВ 08/001.12.06.2008, between the SRI-BAS and Kontrax Company, 2008, to the Supply of Equipment Project under the PHARE Programme. Support for sustainable management of crisis's on central and local level PHARE BG 2005/017-684.02.
- ✓ Development of Methodical Fundamentals of Landscape-Ecological Planning Using Geoinformation Technologies. Contract NZ–Nr.1507/05 between the SRI-BAS and the Scientific Research Fund at the Ministry of Education and Science, 2005-2009.
- ✓ Establishment of a Scientific-Information Complex for Aerospace Polygons on the Territory of Republic of Bulgaria. Contract between the SRI-BAS and the Scientific Research Fund at the Ministry of Education and Science, 2007-2008.

➤ Reference projects:

- ✓ Designing a Geodatabase Model for the Purposes of Large-Scale Mapping of Land-Use Conflicts Caused by Mining Industry Using Remote Sensing and Ground-Based Data. Joint Research Project – Nr. P-16/24.04.07 between the Bulgarian Academy of Sciences and the *Aristotle* University of Thessaloniki, Greece. 2007-2009
- ✓ Enhancing the Qualification and Retaining a Young Scholars' Team in the Field of Aerospace Technologies as a Prerequisite for Monitoring and Preservation of the Environment and Prevention of Damages Caused by Natural Disasters. Contract Nr. BG051PO001/07/3.3-02/63/170608 between the SRI-BAS and the Scientific Research Fund at the Ministry of Education of the Republic of Bulgaria under the Human Resource Development Operational Programme, 2008–2010
- ✓ Geoecological investigation of natural hazards and integral risk assessment for the needs of management at a regional level. Contract Nr. H3 1514/05 between the SRI-BAS and the Scientific Research Fund at the Ministry of Education and Science of the Republic of Bulgaria , 2005-2009.
- ✓ Conductance of geoecological assessment of the territory of the Sport Center Kutina – Golf Resort. Contract Nr. 008/01.07.2007 between Ferry Group Corporation and the SRI–BAS
- ✓ CORINE Land Cover 1990 PHARE Project, 1994–1996;

Intended Role in a Consortium

➤ Partner

✓ The main types of work packages which are of interest for us are:

- R & D work packages
- Dissemination work packages
- Training work packages

✓ The potential end users are:

- Municipalities and local administrative structures
- Ministry of Agriculture and Food
- Ministry of Interior
- Ministry of Transport, Information Technology and Communication

Contact and further information (if any)

➤ Address data of the contact person:

Vanya Naydenova, Ph.D.

Chief Assistant in the *Remote Sensing and GIS* Department at the SSTRI-BAS

Acad. G. Bonchev St., block 3,

1113 Sofia, BULGARIA; P.O.Box 799

e-mail: vnaydenova@gmail.com

tel.: +359 (02) 979-33-49

URL: <http://www.rse-sri.com>



➤ Relevant links / references

Space and Solar-Terrestrial Research Institute – Bulgarian Academy of Sciences (SSTRI-BAS)

6, Moskovska St., 1000 Sofia, P.O. Box 799, BULGARIA

tel.: +359 (02) 988-35-03, fax: +359 (02) 986-16-83

URL: <http://www.space.bas.bg>