



# Methods and Tools for dual access to the EO databases of the EU and Russia



## **MEDEO**

FP7 – SPACE THEME 9

EU-Russia Cooperation in GMES

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**Methods and Tools for dual access to the EO databases of the EU and Russia**

[www.medeo-eu-ru.org](http://www.medeo-eu-ru.org)

### General Info

Collaborative Project – Specific International Cooperation Action  
(SICA) SPA.2010.3.2-01 EU-Russia Cooperation in GMES

- Methods and Tools for dual access to the EO  
databases of the EU and Russia
- Duration 2 years
- 5 project partners
- Budget total 0,66 Mio €, EUC 0,5 Mio €



### Project Partners



- TU Berlin (Coordinator)



- ECM-Office



- ARATOS Technologies

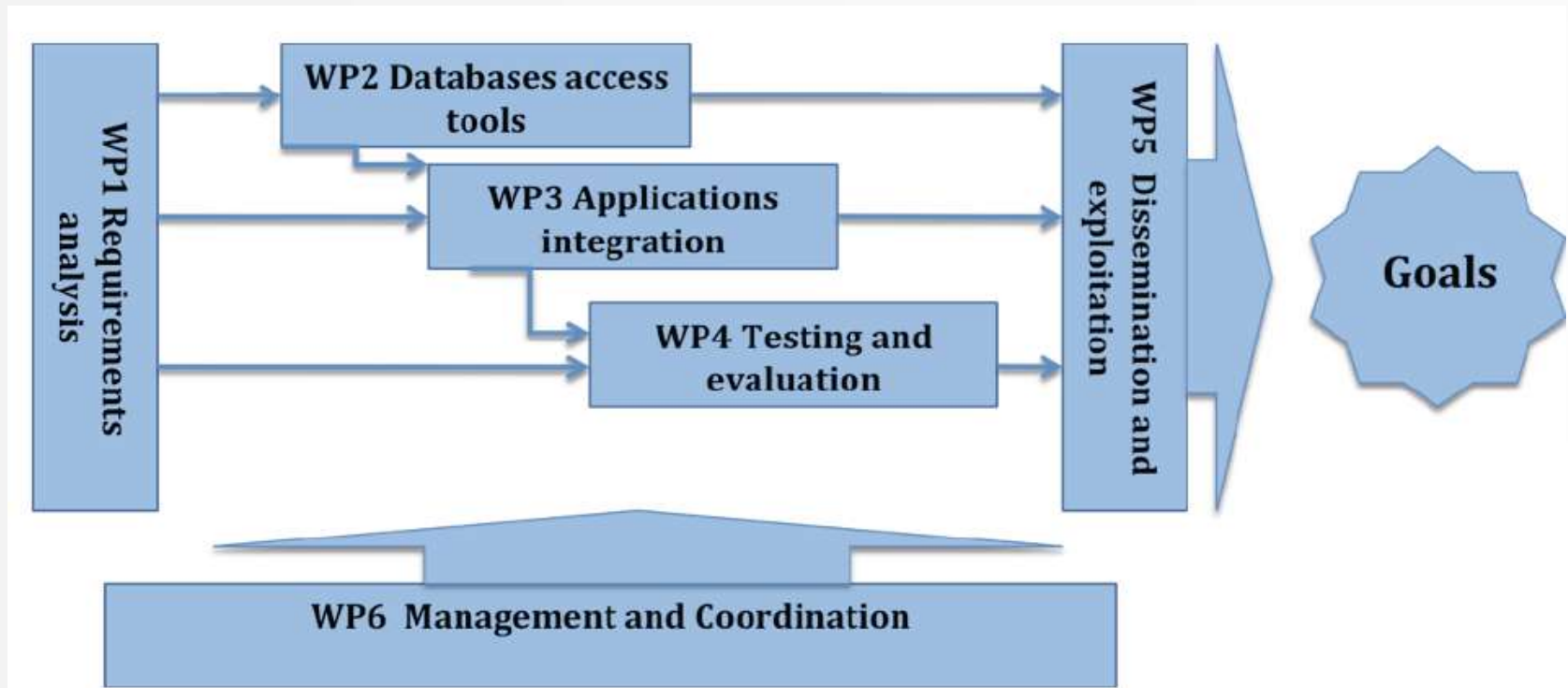


- State Research and Production Space-Rocket Center of the Russian Space Agency "TsSKB-Progress"



- Ryazan State Radiotechnical University.  
Research Institute of EO data processing "Photon"

### Overall structure of the MEDEO work plan





### Project summary

- Structure and make publically available internal data format used in the Resurs satellite system
- Develop mathematical methods for data conversion and several software toolboxes enabling independent EO service providers and GIS developers to access to and use both European and Russian EO datasets from a single application
- Develop the web interface for the collections of the Resurs satellite data, thus enabling access to and efficient search for EO images. The major technical outcomes will be tested and evaluated by integration into the real European and Russian applications and their validation in the context of provisioning real services to potential final users
- The consortium will also undertake steps to make the project results available to the prime dissemination audience - SMEs working in the field of EO services and/or GIS software development.



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**To study existing methods and formats for space images storing and processing used** by the ESA and RosKosmos, to identify the user requirements concerning most convenient and distributed formats and on this basis to develop the specification for the development of **data convertors and webbased search** and access to the Resurs-DK/P EO data and its usage from external applications. In addition to the technical requirements, the project will publish the specification of the internal metadata formats currently used for the Resurs-DK images and will be used for the future Resurs-P images, thus enabling third party partners to develop their own access tools.

To develop, test and evaluate the **Web Interface to the Resurs-DK/P databases enabling** efficient search and access to the EO images. The attaining of this objective will be enabled by the analysis and comparison of metadata standards and will use as examples such European web portals of ESA EO information as GeoPortal.

To develop and test the software tools for the access to the Resurs-DK/P images, to integrate these methods into the existing European (ESA data) and Russian (Resurs-DK data) software applications in the areas related to agriculture, forestry and natural hazard situations management. To evaluate the dual use of EO data in the context of providing real services to final users. To provide recommendations for potential uptakers.

To disseminate the obtained results, thus preparing and inciting their active uptake by European and Russian GMES service providers. The focus will be on SMEs working in the field of GMES services.



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### ***Aratos Technologies S.A. (Aratos) - Greece***

Aratos Technologies S.A. was founded in 1995 and is one of the first European downstream valueadded services company in the space sector. We carry out value added services in the areas of Environmental Protection, Land Use and Urban Planning, Disaster Management, Agricultural sector monitoring and Security using space and satellite technologies. The scientific resources, the experience of our experts and the know-how of the company satisfy all customer needs, ensuring excellent quality of service. Aratos Technologies S.A. is certified with ISO 9001:2000.

### ***Aratos Disaster Control service***

Aratos Disaster Control is a system providing services using satellite-based data for the three basic phases of fire-crisis management, prevention phase, crisis management phase and assessment phase. The prevention phase (PRE-FIRE) consists of services providing regularly cartographic updates of a given area as well as high – resolution digital maps. The management phase (CRISIS) includes services for direct fire mapping in case of large-scale fires. Additionally, direct damages assessment is supported as well as continuously monitoring of the areas during the fire incidents. The assessment phase (POST-FIRE) incorporates services providing high resolution digital maps of the destroyed area.





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### ***Green Space Services for Local Monitoring and ECM-PLUS service***

**ECM-PLUS** is a prototype satellite-based communication service for use in case of major physical disasters, with focus on catastrophic earthquakes, which have resulted into severe damage to the ground communication services. Towards this direction a set of services will be delivered over a satellite link extended to the incident area via a Wireless Local Area Network.

Aratos Technologies S.A. has developed an efficient and useful service for monitoring of environment using satellite technologies. ***The Green Space Services for Local Monitoring*** (GreenSSLM) utilize the cutting edge technology based on satellite born data and integrate the complex data and models in order to provide useful and easy to understand indicators for decision makers, society and individuals.

### Overview of the coordinator

The department of Aeronautics and Astronautics at the TU Berlin is the oldest space faculty in Germany. Active participation in research projects is an essential part of education at the department of astronautics.

#### Main topics of research

- earth remote sensing and environment monitoring
- space systems technology
- space sensor technology
- nano and pico satellite missions



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