Short presentation of a project proposal for the 5th call Space in FP7

„ Small Unmanned Copter in Environmental Monitoring and Emergency Response “

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Selected draft call topic the proposal aims at

Activity 9.1 Space-based applications at the service of European Society (GMES)

Area 9.1.3 Support to the coordinated provision of observation data

SPA.2012.1.3-01 Research and development for In-situ component

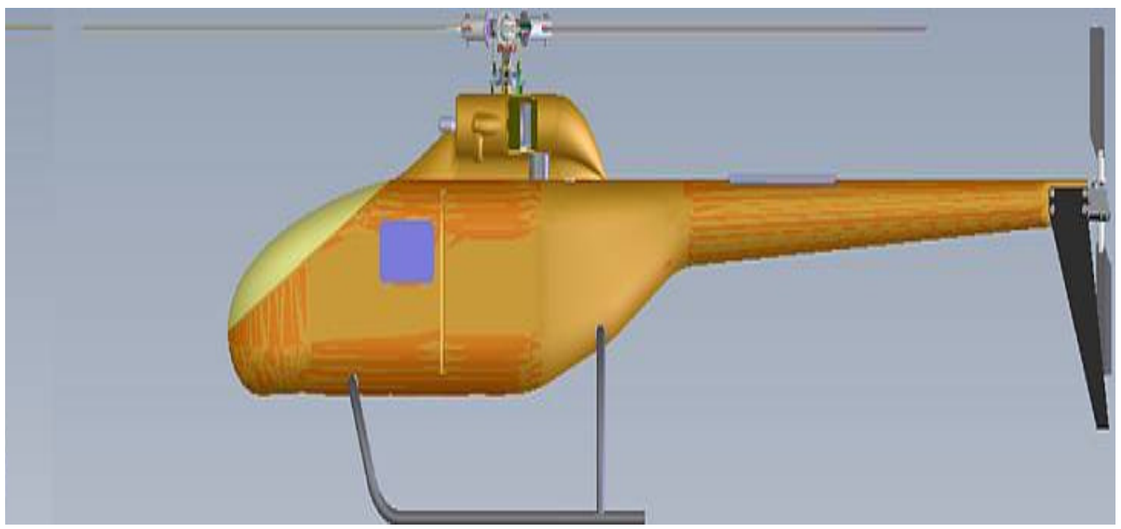
Short outline / Proposal concept I

Idea is motivated by:

- Fast deployment – no need for landing strip
- Highly operational – especially in mountain areas
- Low cruising speed – easy to control via remote control
- Expandable for weight – may carry as much as 20kg
- Up to now mainly used in military domain and hobby, but recently in the rescue operations and land surveys

Main Rotor	330 cm
Length	290 cm
Height	90 cm
Empty Weight	40 kg
MTO Weight	90 kg
Sensor Payload	30 kg
Service Ceiling	2000 m / 6000 ft
Cruise Speed	40 kts / 72 kmh
Endurance	Up to 2.5 hours
Propulsion	Two 8 kW turbine engines
Fuel	Jet-A1 or petroleum with 5% turbine oil





Short outline / Proposal concept II

- Conceptual framework for customized system for identification of natural phenomena and continous monitoring of agricultural and forest areas
- Research on methods and indicators related to assessment of indicators of the environment – land and water bodies observation, air quality, etc.
- Grant GMES community access to reliable and verified in-situ data for small to medium size areas
- Provide possibilities for technological research and cooperation between academia and SME





Short outline / Proposal concept III

- This proposal addresses the provision of accurate and reliable remotely sensed in-situ data which are of crucial importance for processing/validation methodologies focused on integration of data streams from new European-borne satellites into geo-information production in service of the community.

- The scientific methodology suggested integrates the latest achievements in complex monitoring of agricultural, forest and water areas by means of modern equipment supplying data for several physical parameters of the environment

Consortium I

- Coordinator: Dr. Doyno Petkov, SSTRI-BAS, Head of RSS dept.
  - Electrical engendering
  - Space RS systems
  - Data processing
- Dr. Valentin Atanassov, SSTRI-BAS
  - Optical and thermal imaging
  - System integration
- Hristo Nikolov, res. sci., SSTRI-BAS
  - Data processing
  - Geoinformation systems
- Dr. Liubomir Bonchev, Selcom Ltd.
  - satellite data transmission and data storage
  - GPS positioning

Consortium II

- Partners' competences:

1. Aircraft and payload design;
2. Navigation systems and operational services;
3. Environmental modelling;
4. SME in agricultural, forest, water management etc.;
5. Biodiversity NGOs';
6. National and local authorities.

Contact and further information (if any)

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- References:

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3. ACCURATE DSM PRODUCTION FROM UNMANNED HELICOPTER SYSTEMS, R. B. Haarbrink , H. Eisenbeiss, The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences. Vol. XXXVII. Part B1. Beijing 2008