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2nd Newsletter

SSMNatuRe

"Innovative Space Satellite Monitoring of the Environmental Natural Resources of the Cross – Border Area Greece – Albania"



Satellite Monitoring installations for the SSMNatuRe project

Prepared by the Biologists of Albania

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1. Update on the Project

The Project aims at a satellite monitoring of different sites in the Cross border area between Albania and Greece. Specifically National Parks in Prespa and Gjirokastra as well as the Vlora marine environment in the Albanian side and forest sites of important natural ecosystems of Konitsa and Region of West Macedonia in the Greek side will be monitored. The monitoring will focus on the resources of water, marine sites, forests and national parks of the whole cross border area.

The main activities of the second semester of 2013 have to do with the acquisition of the appropriate equipment for establishing the Satellite Infrastructure. After the preparation of tender procedures, during the last trimester of 2013 the SSMNatuRe project team with the assistance of the experts coordinated the delivery and installation of the satellite monitoring equipment in 3 In situ offices in Albanian side, covering Prespa, Gjirokastra and Vlora project areas. The same procedure was followed for the area of Konitsa. Regarding the installation of the system in the Region of Western Macedonia will take place at the beginning of 2014.

The second major task of this period is the start of the activities of WP4,

which have to do with the indication of the Best Practices across Europe in cases of crisis. Many different management tools and methods in the areas of Forest Fires, Floods, Earthquakes and Marine Sites were indicated. This material will be used in the 1st Consultation Meeting and as a feedback in the preparation of a cross border management scheme.

Additionally, the website of the project is a communication tool, which disseminates till now the project activities. Municipality of Konitsa prepared a two-sided leaflet.

Finally, the 2nd Steering Committee and the Workshop A about the Satellite Monitoring Procedure of Natural Resources held in Konitsa.



Workshop A in Konitsa

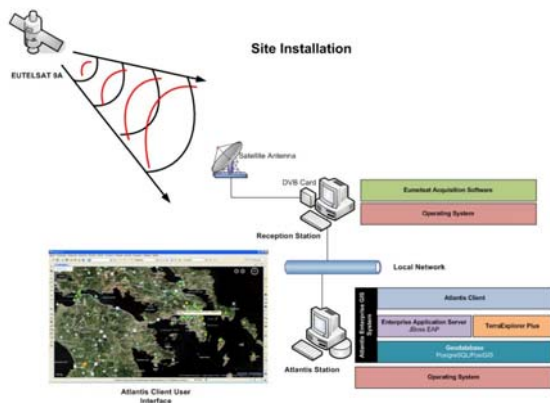
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2. Installation of the Satellite Monitoring Systems

Vlora, Gjirokastra, Prespa and Konitsa installed the Satellite Monitoring Systems in their respective areas. The system consists of four main topics:

- EUMETCast receiving Ground Station and related data analysis software
- EUMETSAT satellite data and products
- 3D GIS application and geodatabase creation
- Multi-rotor Mini-UAV (only in Albania).

The architecture of the system is as follows:



The delivered system has two main components:

a) The reception system that enables the data reception from the EUMETCast data dissemination service via satellite along with the geodatabase and

b) The Atlantis GIS system that visualize the data by producing 3D terrain maps and alarming the necessary stakeholders with ICT applications.

INSTALLATION AT VLORA



INSTALLATION AT GJIROKASTRA



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INSTALLATION AT PRESPES



updates and large areas coverage. For example all data related to forest fires (risk mapping, detection etc.), large-scale extreme weather, other environmental parameters monitoring (i.e. ozon, Nitrogen Dioxide, Sulfur Dioxide), other parameters related to agriculture, land use and solar energy (Surface Albedo, Vegetation Cover, Leaf Area Index, Absorbed Photosynthetically Active Radiation, Evapotranspiration, moisture, land surface temperature etc.).

INSTALLATION AT KONITSA



Regarding the GIS system

Nowadays almost every system that manages information has data with spatial characteristics and therefore need a GIS system. The delivered system can be the basis of several systems in different areas like:

- Natural Hazards crisis management (Forest fires, earthquakes, floods, technological accidents etc)
- E-government solutions for services to citizens
- Public safety systems
- Security and surveillance systems
- Agriculture monitoring systems (i.e. precision agriculture, quality systems monitoring)

Additional components are required in order to build such systems. The core is always a GIS system and the delivered **Atlantis Enterprise GIS**

Regarding the EUMETSAT data:

The main characteristics are that we will gather low-resolution data, but with large coverage and very small return period (data every 5min), which is the highest data rate of all existing satellites. These characteristics enable to study phenomena that require often data

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system has many advantages when building such systems. The most important features of the system are:

- **Expandability:** The same architecture can support thousands of users, thousands of devices and terabytes of data due to its streaming technology.
- **Compliance with international standards:** It supports all the well-known standards for geographical data exchange and thus enable the interoperability with other systems
- **Multi-Agency structure:** Can be deployed in one or multiple agencies
- **Scalability:** The same system can be deployed in one or in multiple installations in different areas (centralized or distributed) and can be used from a local authority up to national scale or even European scale.
- **Modular architecture:** Enables easy expansion of the system with other modules to provide additional functionalities.

Additionally the project will provide some capacity building activities for the staff of the In situ offices in order to be able to operate the equipment in long terms after the project is closed. The actions that will take place are specially designed for environmental changes, relationship between human activities and wildlife.

3. Project News

- ✓ **Second Steering Committee Meeting in Konitsa, Greece, 17 December 2013**

The second Steering Committee meeting took place in Konitsa in Greece in December 17, 2013. The progress of the project was discussed among the members of the Steering Committee and the action plan for the remaining time was set.



During this meeting the Biologists of Albania team in cooperation with the external expert Mr Christos Georgiadis from Greece and Valbona Simixhiu from Albania, managed to perform and elaborate the "Best Practices through the evaluation of the existing policies, operational plans and tools dealing the natural risks across Europe" in the framework of WP 4. The purpose of the deliverable is to identify, recognize and analyze the best practices across Europe in the field of Forest Fires, Earthquakes, Floods and Marine Sites. The scope of

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this performance included: mapping of existing policies and strategies, investigating best practices, choosing the most suitable ones for the project area preparing the framework for policy makers' suggestions. Additionally, the policies that will be applied as well as the existing Operational Plans are identified and will assist the project team in their continues monitoring work and in the elaboration of the ecological development plans for the projects areas concerned.

✓ **Workshop A: Satellite Monitoring Procedure of natural resources & environmental conditions in Cross – Border Area of Greece - Albania** in Konitsa, Greece, 18 December 2013

On the 18th of December 2013 the Workshop A was held in Konitsa indicating the methodology of Monitoring the natural resources through Satellite Data. 43 participants discussed about the Satellite Monitoring advantages in the Natural resources monitoring of the project areas.



The main topic of discussion was the architecture of these systems, the EUMETCAST data (what natural resources can be monitored and how) and the features of the ANTLANTIS 3D GIS system.

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4. Upcoming News in the next period

- ✓ Organization of the 3rd Steering Committee Meeting in Gjirokastra, 28 January 2014
- ✓ Organization of a Consultation Meeting among stakeholders and experts for the consultation of the Best Practice Document on existing Policies and Operational Plans across Europe in Gjirokastra, 27 January 2014
- ✓ Installation of the satellite monitoring system in the Region of Western Macedonia, during February 2014
- ✓ Organization of Workshop B in parallel with the second Consultation Meeting during March 2014 in Vlora
- ✓ Organization of the Final Conference in Florina
- ✓ The first results of the monitoring procedure will be announced in March 2014
- ✓ Training of the staff during Workshop B in order to ensure the use of the equipment by the partners and after the end of the project
- ✓ Possible extension of the project until 30th of June 2014 in order the partners to obtain more data from the system

Are you interested in **SSMNatuRe** project? Come and join us at www.ssmnature.eu

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