

Development of a Geo-spatial Environmental and Decision Support System for Incident Management and Impact Analysis (EKTIMISIS)

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EKTIMISIS is an ongoing project which aims to develop the rapid deployment of geo-spatial decision support systems (DSS) to assess incidents relative to environmental impacts. The objectives of the project are mainly three: 1) to determine locations for sources of energy including development, commercialization, and deployment of renewable and alternative energy technologies and solutions; 2) to address issues on EU regulatory compliance and sustainable development; 3) to evaluate disaster preparedness, response, recovery, and mitigation projects, and to generate maps and reports relative to those incidents.

In order to achieve the objectives of the project, a Work Plan will be established. Firstly a feasibility study will be conducted to outline the risks and the constraints that are involved with the development of the proposed system. The outcome of the study will decide if the modules can be implemented, and generally, if the whole system is feasible for implementation. This component includes: a) the determination and documentation of each of the potential outcomes to the development of the GIS, tool or application; b) the identification of the likelihood of one or more outcomes meeting the stated system requirements; c) the creation of a draft outline of the finished product showing the process and information requirements that will be needed.

The second phase of the project is the acquisition of data and creation of file geospatial databases. This component element requires the creation of a dynamic modeling infrastructure (data model) to serve researchers, small and medium enterprises, other businesses, managers, policymakers, and end users. Each research partner will share responsibility for creating the GIS data models for the SMEs. The data model will represent geographic objects or surfaces as data, a set of database design specifications for objects in the GIS application. The goal is to build many industry-specific data models. It is crucial to simplify the process of implementing projects, making assessments and to promote and support standards that exist in the EU member state. It is imperative to create and design data model templates that can be used with one GIS platform. The result is this set of data model structures that can be implemented for each of the industries and scientific disciplines.

The next phase is the development and testing of the extensible GIS and tool. The objective is to develop the project system, application, tool, and modules that can be installed in EU member states. The work will also involve the development of an interactive GIS-internet site for viewing the results of the data and maps.

Finally a demonstration of the extensible GIS and tool to SMEs participating in the project and based on their comments will make the final adjustments to the system. The demonstrators will be in the form of PowerPoint presentations and will be distributed across the participant SMEs through a DVD. The GIS and tool will be demonstrate to the SMEs of the participating EU

member states so that they are aware of their functionality and use following the completion of the project.

The EKTIMISIS tool and application will make a more efficient and effective use of human and natural resources before and after the occurrence of incidents and impacts. The project's results will be fully developed when direct economic benefits, exact added value are realized and evidence of gains in market includes: a) the correct number of people is deployed/employed and resources are used/expended where and when necessary; b) the effective use of coordinates, knowing the exact location of an incident and its proximity to hundreds of features will save time and money in making assessments and decisions, and during multiple incidents will facilitate decision making in supplying the proper and adequate amount of resources; c) when query-based assessments are made, the reports and maps associated with decisions, incidents, or impacts will be done expeditiously and efficiently; d) each participant has an extensible, functional, and deployable GIS DSS, tool and file geodatabase which can be promoted to the market.