Project:
Advanced Systems for Prevention & Early Detection of Forest Fires ASPIRES

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European Commission
Directorate-General for European Civil Protection and Humanitarian Aid Operations (ECHO)
ECHO A - Emergency Management;
Unit A4- Civil Protection Policy
2016 Call for Prevention and Preparedness Projects in the field of Civil Protection and Marine Pollution

Summary

The goal of ASPires project is to develop advanced concepts for early forest fire detection systems. It integrates sensor networks, mobile (drone) technologies and cloud computing for data collection at existing Crisis Management Information Systems (CMIS). The mobile technologies allow covering large areas raising the percentage of forest fire detections, monitoring areas with high fire weather index and affected by forest fires. Initial tests of the ASPires open virtualized platform are planned in fYR of Macedonia and Bulgaria. It will allow CMIS in Europe to develop and implement different methodologies and services for initial stage warning, prevention, localization and organization of the firefighting teams and tactics for disaster suppress.

Objectives of ASPires Project

Development of advanced concepts of systems for early forest fire detection integrating sensor networks, mobile (drone) technologies and cloud computing.

Use of data collection to improve the percentage of forest fire prevention and detection in areas of importance by monitoring the fire weather index, hot spots, affected places and predicting the forest fire behaviour.

Specification of communication interfaces, protocols and data flows to share information between authorities and end-users improving the coordination at regional, national and international level.

Development of new information and communication technology solutions and services that allow platform interoperability and integration using recent big data, context-aware and artificial intelligence algorithms.

Improve sustainability in collecting disaster data for CMIS by sharing the best practices in cross-sector and cross-boundary risk management.

Where?

The project will be implemented in the national parks Mavrovo and Pelister in fYR of Macedonia.

Beneficiaries

University of Applied Sciences, Fulda, Germany **Coordinator.**

Military Academy „General Mihailo Apostolski", Skopje, fYR of Macedonia

Comicon Ltd. Bulgaria

InterConsult Bulgaria Ltd

National Cluster for Intelligent Transport and Energy Systems (NCITES), Sofia, Bulgaria

End users of ASPires

Ministry of environment and physical planning

Ministry of Agriculture

Forestry and Water Economy

Crisis Management Center, Skopje

National park Mavrovo (testbed)

National park Pelister

Directorate General Fire Safety and Civil Protection, Ministry of Interior, Bulgaria

Bundesministerium des Innern, Germany

Expected Results

Development, experimental implementation and testing of ASPires integrated advanced platform for early forest fire detection and monitoring that integrates sensor networks, mobile, drone technologies and cloud computing for data collection at CMISs.

Implementation of new models for initial stage warning, localization and organization of the fire fighting teams and tactics to suppress the disaster.

Improved forest area monitoring in the places of importance, e.g. national parks with endemic species of flora and fauna.

Sharing of data for forest fires between different levels of prevention, preparedness and rescue agencies, services, and institutions using virtualized services.

Cost reduction of real-time approach in forest fire detection and monitoring by automatic processing of information and system alert generation.

Possibility of management in command various types of barriers, tourniquets, locks and locking mechanisms in the protected or surround areas including object tracking option or intruder.

Identification of safety standards for communication, access control, sharing and dissemination of the data in use.

Coordination and cooperation of services included in the prevention, preparedness and rescue process.

Improved protection of people and properties from forest fires and reduction of negative impact on the climate.

Improved person power and technical equipment management related to the crisis situations and definition of possible new virtualized services.

Creation of interoperable platform with virtualized services in Europe allowing integration of many existing and future systems through standardized interfaces and protocols.

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