Ref no.	Project title		"HERO20FF": New Generation (NewGen) Recoverable Low Cost UAS/UAV FOR FOREST FIRES MANAGEMENT					
Epsilon	Countr y	Overall contract value (€)	Proportion carried out by legal entity (%)	No of staff provide d	Name of client	Origin of funding	Dates (start/end)	Name of consortium members, if any
	Greece Israel	452.640€ Greece only Total > €1 mi	100% (GR/EPSILON)	10 (GR)	GSRT (GR)	ESPA/EC	01/2014 12/2015	EPSILON (GR) UVISION (IL)

Detailed description of project

With the rise of Forest Fires (FF) in the Mediterranean in the recent years and climate change becoming a permanent and unpredictable reality, the need for Forest Fire Management (FM) solutions is mandatory. Once such solution supporting a FM System is the deployment of Unmanned Autonomous Systems (UAS) and Unmanned Aerial Vehicles (UAVs) targeted to: (i) collecting aerial information prior-, during-, and after- a Forest Fire) and (ii) providing important gu idance to the Fire-Fighting resources on the ground and in the air (e.g., Firebrigade, aircrafts, police, emergency units, hospital, people), next to offering specialised information during the FF (e.g., communication with ground emergency resources, mapping of the Fire evolution) and after the FF (e.g., land resources lost, evaluation of cost, lessons learned).

The Hero20FF™ system is being developed by EPSILON International SA (www.epsilon.gr) in cooperation with UVision Global Aerosystems™ (http://www.uvisionuav.com/). Development has been funded under the Greece-Israel Technology Cooperation Agreement (National Research Directorate, GR; Chief Scientist, IL) and delivers a NewGen recoverable-, low cost-, tube-launched-, micro-UAV platform aimed to:

- Accurately measure, estimate and predict in real-time wind-field and other along an erupted FF.
- Encounter FF rekindling and FF propagation including FF fate.
- Provide accurate accessibility parameters through land observation.
- Deliver and enrich simulation scenarios with real-time data.
- Transfer data to a webservice for FF Management (FM).
- Deliver a full web-mapping service of the event and its management (WFS/WMS)
- Deliver added value services and training to authorities and organizations for FM as of 1/1/2016



Type and scope of services provided

- UAV technologySmall size portable UAV
- Proprietary high value sensors system
- Low cost UAS (3+ UAVs)
- Easy automated deployment
- Easy preprogrammed operations by a 2 man team

UAS contribution to an FF Integrated Management:

- Web service and WFS/WMS
- Fire-front movement simulation and forecasting
- Fire area micro-climate near-real time mapping
- Wind field mapping (for aerial firefighting units)
- Firefighting forces routing
- Fire-front real-time video and imaging
- Real time data delivery to the ground and via SMS or other comm.-means to authorities
- Part of the ArcFIRE System of EPSILON



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