



**Call:**

UCPM-2019-PP-AG  
(INT)

**Duration:**

24 months

**Start Date:**

01 Jan 2020

**Total eligible cost:**

€1,082,831.44

**Requested EU Contrib.:**

€920,406.73

# Real-time Artificial Intelligence for decision support via RPAS data analytics: AIDERS - 873240

## Project tasks and deliverables

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# Project consortium

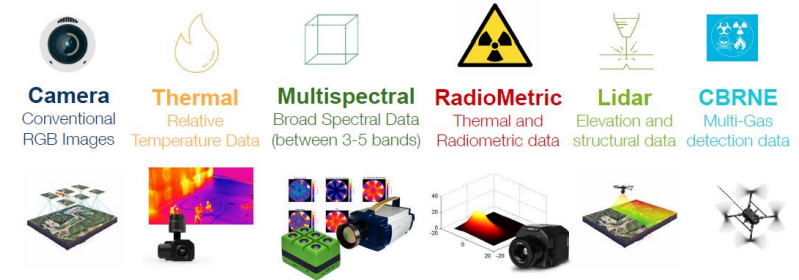


- **Coordinator: KIOS** Research and Innovation Center of Excellence, University of Cyprus, has strong research and innovation background on drone technologies applied in the field of safety, security and emergency response
  - EU R&D funding to develop technologies for first responders
  - Industry R&D funding from national first responders
  - UCPM trainings including the **Exchange of Experts** and the **AMC**
- **Cyprus Civil Defence** is a department of the Ministry of Interior of the Republic of Cyprus employing 80 people including 15 scientific officers
  - 24/7 basis operation and connection to ERCC
  - Island-wide electronic Early Warning System
  - 24-hour Contact Point for the ECURIE System, for EMSA
- **Entente pour la Forêt Méditerranéenne** is a public organization, coordinating the efforts of the 14 departments most affected by natural hazards of the South of France
  - CEREN was officially created in 1979 as the Test and Research Center of EPLFM and is in charge of carrying out all the necessary tests in the area of Civil Protection aiming at implementing new systems and for their efficiency evaluation
- **CRISTAL, University of Lille**, is a laboratory of the National Center for Scientific Research, University Lille and Centrale Lille in partnership Inria and Institut Mines Telecom with focus on
  - Big Data, software engineering, image and its uses, human-computer interaction, robotics, control and supervision of large systems.
- **Corpo nazionale vigili del fuoco (CNVVF)** is a State organization responsible for prevention, rescue and relief services in natural or manmade disasters.
  - Provide emergency planning, industrial risk management and training within the Ministry of Interior, in close cooperation with the National Civil Protection Department within the Prime Minister's Office
- **Center for Security Studies (KEMEA)** is a think tank on homeland security policies and an established research center since 2005 within the Hellenic Ministry of Citizen Protection, aiming to support security policy implementations in Greece
  - A main objective of KEMEA is to bring together all national Law Enforcement Agencies (Police, Fire Service, Coast Guard, Civil Protection agency, etc.)



# Area of Activity & Project objectives

- **Strengthening preparedness for responding to multi-sector emergencies, including health, CBRN, environment and marine pollution in Europe and its neighborhoods**
  - **Developing operational tools to facilitate emergency response**
- **Develop algorithms and tools that will harness the large volume of data collected using drones (including visual, thermal and multispectral cameras, LIDAR, CBRN sensors, etc.) and converting that data into actionable decisions for improved emergency response**
  - Identify which information needs to be extracted from the collected data
  - Design online machine learning algorithms to process and analyse the received data in real-time in order to build knowledge maps
  - Implement novel visualizations that higher-command can use to take intelligent decisions.
- **Test in small and large scale exercises**
- **Share knowledge through dedicated workshops and trainings**





# Background information



- Ample experience in the field of RPAS deployments in emergency response for DG ECHO



- PREDICATE (PREventing Disasters by CAPITALizing on unmanned aerial systems Technology)
- SWIFTERS (Safe and Rapid Evacuation Facilitated by drone Swarms)
- Buffer-capacity LEAPFROG (Leading Activities for enrolment of RPAS units in the voluntary pool)
- Trainings of the UCPM including the AMC and the Exchange of Experts



# Implementation Plan



WP	Month																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Management		M1							M2															
Needs assessment						M3																		
Real-time algo.				M4		M5			M6															
Data analytics																			M7		M8			
Testing & Exercises													M9											
Dissemination		M10										M11											M12	

- ◇ M1: Kick-off meeting
- ◇ M2: Project monitoring
- ◇ M3: Requirements and technical specs
- ◇ M4: First batch of collected data
- ◇ M5: Geo-temporal graph database
- ◇ M6: Trained algorithms
- ◇ M7: Development of ground-control ML algorithms
- ◇ M8: Cascading effects analysis
- ◇ M9: Testing, field exercises and evaluation results
- ◇ M10: Project website
- ◇ M11: Interim report
- ◇ M12: Outreach pre-final check

## Tentative dates and major events

- **Project meetings**
  - 2nd project meeting (Month: 6) @ Greece
  - 3rd project meeting (Month: 12) @ Italy
  - 4th project meeting (Month: 18) @ France
  - Final project meeting (Month: 24) @ Cyprus around Nov. 2021
- **Exercise participation**
  - Multi-national exercises (Eggelados 20-21, Lellapa 20-21, Argonaut 20-21)
  - Greece-Cyprus joint exercise April 20-21
  - Small scale exercises in Italy, France, Greece and Cyprus

