



RAWFIE

RAWFIE (Road-, Air- and Water- based Future Internet Experimentation) is a project funded by the European Commission (FIRE+ challenge, Horizon 2020) that aims to provide research and experimentation facilities through the growing domain of unmanned networked devices. The project will establish a unique, mixed experimentation environment across the space and technology dimensions by integrating numerous testbeds for experimenting in vehicular (road), aerial and maritime environments. RAWFIE targets to bring EU in the foreground of Future Internet (FI) research and experimentation while facilitating the scientific osmosis between acknowledged IoT research groups with testing infrastructures world-wide.

HOW DOES IT WORK?

The basic idea behind RAWFIE is the automated, remote operation of a large number of robotic devices for assessing the performance of different technologies in networking, sensing and mobile/autonomic application domains. These robotic devices will be: (a) Unmanned Ground Vehicles (UGV), (b) Unmanned Aerial Vehicles (UAVs) and (c) Unmanned Surface Vehicles (USVs). Devices will be hosted on a respective testbed and RAWFIE will feature a significant number of UxV nodes for exposing a vast test infrastructure to experimenters. All these items will be managed by a central controlling entity which will be programmed per case and it will fully overview/drive the operation of the respective mechanisms (e.g., auto-pilots, remote controlled ground vehicles). Internet connectivity will be extended to the mobile units in order to enable the remote programming (over-the-air), control and data collection. The project will deliver the required software for experiments management, data collection and post-analysis. The vision of Experimentation-as-a-Service will be realized by virtualizing the provided software, making the framework available to any experimenter around the globe.

KEY OBJECTIVES

- The development of a strategic experimental infrastructure for mobile IoT.
- To support of the entire experiment lifecycle with fully detailed, controllable and replicable conditions.
- The integration of Cloud resources and networking facilities provided by the Europe's Research and Education Network (GEANT).
- The provision of a proof of concept for extending the IoT paradigm in the world of autonomous mobile devices and remote piloted systems with real time characteristics.
- The implementation of a reusable architecture that facilitates the testing of hardware, protocols, algorithms, middleware and application protocols.

HOW TO GET INVOLVED?

Users will be able to access RAWFIE resources and services through the portal and experimentation suite. The portal will include a user-friendly interface to illustrate all the essential information for the RAWFIE federation (i.e., authorization, documentation, testbeds and resources). In addition, the experimentation suite will provide a number of functionalities for the definition of experiment scenarios such as booking, monitoring and authoring tools. The set of RAWFIE partners will be supplemented through 2 Open Calls cycles (accounting for the 50% of the RAWFIE budget) in the direction of expanding the infrastructure and allowing a wide spectrum of experiments to be undertaken prior to the RAWFIE self-sustainability, resource autonomy phase. Third parties that will join RAWFIE consortium through the Open Calls are experimenters providing specific experiment applications, testbed operators and UxV manufacturers.

PROJECT FACTS

COORDINATOR: Stathes Hadjiefthymiades, National and Kapodistrian University of Athens

EXECUTION: From 2015-01-01 to 2018-12-31

PARTNERS: National and Kapodistrian University of Athens (Greece) (Coordinator), CSEM Centre Suisse d'électronique et de Microtechnique SA (Switzerland), Intelligence for environment and security SRL IES Solutions SRL (Italy), FRAUNHOFER-Gesellschaft zur Förderung der angewandten Forschung e.V (Germany), EPSILON (Bulgaria), Hellenic Aerospace Industry (Greece), Association Pegase (France), Centre for research and technology Hellas (Greece), OCEAN-SCAN - marine systems & technology LDA (Portugal), Haute école spécialisée de Suisse occidentale (Switzerland), ROBOTNIK automation SLL (Spain), AVIONTEK GMBH (Germany), Ministry of National Defense (Greece).



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