

Proposal for pre-conference workshop – AGILE 2014

Castellón, Tuesday 2 June 2014



1. Workshop name/title (and acronym is applicable)

Valarm-Esri ad-hoc, real-time mobile sensor networks in the cloud

2. Description of the workshop by listing topic(s), objective(s) and planned outcome(s)

2.1 Topic(s)

Sensors, environmental monitoring, data acquisition, tracking, cloud platform

2.2 Objective(s)

Show affordable remote environmental monitoring and sensor networks using commodity hardware. Show how a small business uses the cloud and Esri platform to provide services.

2.3 Planned outcome(s)

Publication of a report and open to additional publications, e.g., journals, book chapters, web, data repositories, etc. that come out of the workshop.

3. Abstract

More and more mobile devices enter the world every day with the majority aimed for consumer use, however there is a growing potential for commodity mobile devices (phones, tablets, mini-PCs, etc.) to be used in combination with internal and external sensors (via Bluetooth and USB) to perform remote environmental monitoring, mobile data acquisition, asset tracking, and other applications around the globe. Yesterday's as well as today's mobile devices are powerful, mobile computers with GPS that are able send data to the internet from the field in real-time from countries around the world via 3G/4G cell networks, Ethernet, and WiFi. Hence Valarm has shown that mobile devices, as well as other widely available connector hardware, are quite capable for monitoring, measuring, and responding to environmental factors like air quality, humidity, gases, pressure, and temperature. We also show how this set of services utilizes the Esri platform on the cloud to

build its business and to connect sensors to the world of geoprocessing.

4. Short description of the intended length (half or full day) and the format of the workshop

This workshop will be formatted to cover the topics below with time in between each for discussion and what directions to take.

- 1) Examination of easily available, standard sensors that are useful for those utilizing geographic information for real-world applications.
- 2) Analysis of how these sensors networks can be used: e.g., agriculture/viticulture, fleet tracking, chemical plants, office rooms, energy production/consumption, air quality, biodiversity, water quality, student projects, flood alerts, *in situ* mobile data acquisition, factories, school rooms & campuses.
- 3) How much sensor data is enough or are we getting too much? Feeling overwhelmed by lots of data? Gather everything possible from the field or do you think there is a solution?
- 4) Show how the Esri ArcGIS Online platform plays a role in making all of this work.
- 5) Takeaways and summary of how we as geographic information experts can take advantage of this growing availability of affordable and easy-to-gather real-world, real-time data.

Breakout groups will be formed as deemed necessary by the participants based on how many there are and what their specific interests are. The length can be half or full day depending on what is available and how much interest there is as well as the number of participants.

5. Brief statement of the relevance of the workshop for AGILE

This workshop is relevant for AGILE since it covers multiple AGILE conference topics such as geosensor networks, sensor webs, spatiotemporal data acquisition, big spatial data: analysis and visualization, smart cities, natural resources management and monitoring.

6. Names and e-mail addresses of the organizing member(s)

Leading AGILE member (or sponsor) and contact person: Marco Painho, UNL Lisbon. Michael Gould, UIJ and Esri.

Contributing AGILE members (including the persons involved) – at least one seconding AGILE

member is needed; Oscar Belmonte from University Jaume I

Contributing non-AGILE members (including the persons involved) – if applicable: Edward Pultar, www.Valarm.net

Organizing Committee (if applicable): NA

Programme Committee (if applicable): NA

7. Additional information about previous workshops, if held.

This will be the first.

8. Expected resources needed

Internet connection and multiple power plugs for plugging in multiple mobile devices.

9. Other information

Valarm will provide a variety of environmental and electrical sensors for attendees to use and experiment with during the workshop.

Submission by e-mail to: agile2014@uji.es