Title:

Scent: Smart Toolbox for Engaging Citizens into a People-Centric Observation Web

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Summary:

In environmental policy-making, Citizen Observatories (CO) is an innovative approach that integrates the countless off-the-shelf personal mobile devices into a crowd-sensing network. The Scent project is a comprehensive framework that enables citizens to become the 'eyes' of the policy makers by monitoring land-cover/use changes in their everyday activities. More importantly, citizens will support this tracking process using their everyday mobile devices like smart-phones and tablets. These information will constitute additional and constantly updated annotation to the associated maps in GIS used by the Civil Protection for flood prevention and emergency planning.

Scent is a European Union research project funded under the Horizon 2020 programme. The project runs between 2016 (September) and 2019 and comprises 10 partner organizations across six countries and a wide range of expertise. This brief presents the general Scent approach and the results of the first stages of the system design.

User needs assessment has been completed based on a set of questionnaires, starting from stakeholder identification with the method of focus group and semi-structured interviews, as well as a subsequent compilation of end-user needs and expectations. Based on this comprehensive analysis, the Scent system functional requirements were specified in detail and an architectural design has been established. The finalized Scent Toolbox includes a web-enabled crowd-sourcing platform, mobile gaming applications for user engagement, an authoring tool for back-end content management, an intelligence engine for automated data analysis, as well as numerical models for the determination of flooding patterns and the generation for risk maps.

The Scent Toolbox and the CO approach in general will be assessed in two real-world operational pilot cases. Specifically, one pilot will run in the Danube Delta (Romania) for addressing its use in rural areas and another will run in the river basin of Kifisos in Attica (Greece) for addressing the urban case. Each of these two deployments will provide valuable operational feedback from field experts, as well as end-user feedback regarding the actual experience with the Scent Toolbox. The goal is to evaluate its contribution in preventive planning, facilitating emergency response and

contributing to damage assessment in relation to flood risks and flooding patterns in rural and urban areas. Both pilots are currently under preparation for kick-off within the next few months.

It is expected that Scent will improve the accuracy of existing flood risk maps by more than 15% and thus make areas close to floodplains less vulnerable to disasters. It will also lead to a significant pool of observations on changes in land cover and related environmental phenomena. Collected data will be published via web services into existing repositories, such as the Global Earth Observation System of Systems (GEOSS) portal. Finally, Scent introduces low-cost state-of-the-art tools that will encourage further innovation and boost the development of new people-centric applications, products and services.