



# SCENT: A Smart Toolbox for Engaging Citizens into a People-Centric Observation Web

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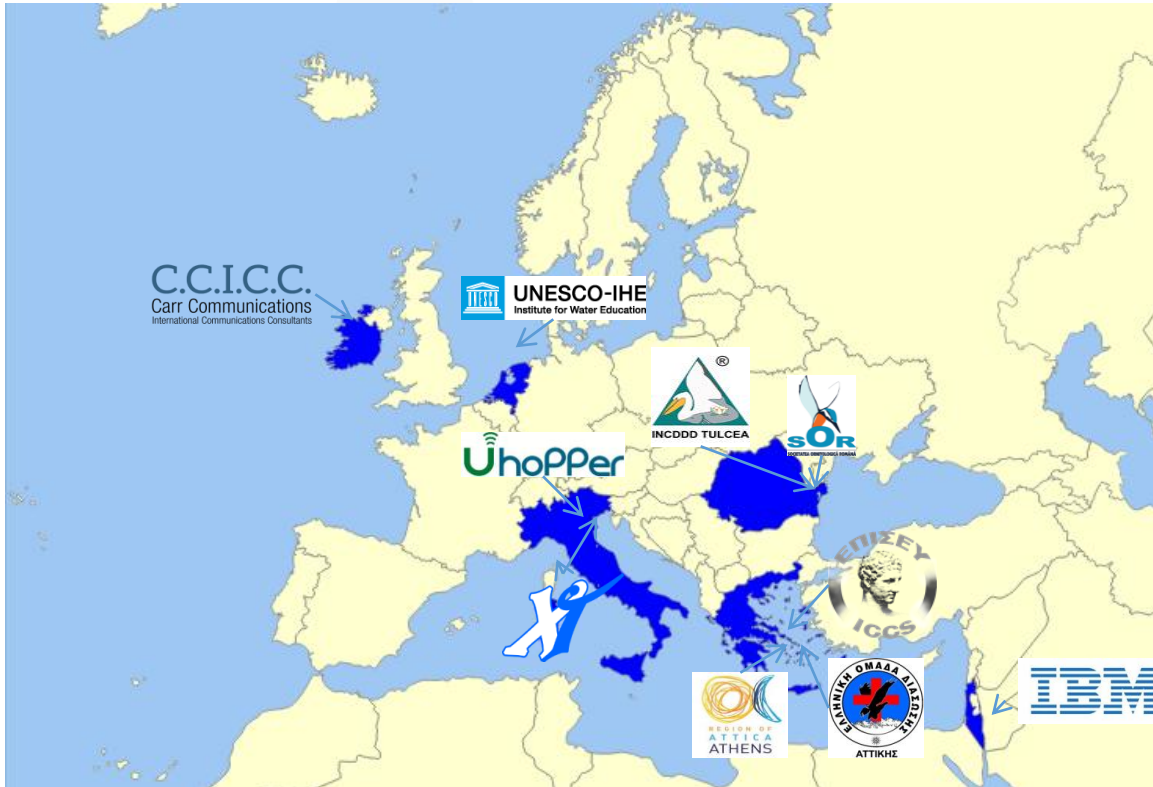
Harris Georgiou (MSc,PhD) – Hellenic Rescue Team Attica (HRTA)



# Summary

- SCENT Facts & figures
- Motivation
- HRTA @ SCENT
- SCENT @ a glance
- SCENT objectives
- SCENT architecture
- Large scale demonstrations
- Dissemination channels
- Target markets
- SCENT current status
- YOU can contribute to SCENT!

# SCENT facts & figures



H2020 Call:

SC5-17.2015 Demonstrating the concept of 'Citizen Observatories'

EC requested funding 3,264,675 €

Duration 09/2016 – 08/2019

2 Large scale demos

3 Research institutes

1 Large industry

3 SMEs

3 NGOs / public bodies



# Motivation

- Flooding is a major environmental issue related to land-cover/use
  - ➔ urban development, critical infrastructure, soil fertility
- Assets close to flood plains
  - ➔ driver for economic development
  - ➔ societal risk in case of flood loss potential



*Pluvial flooding in Coimbra, [Source: Imperial College]*



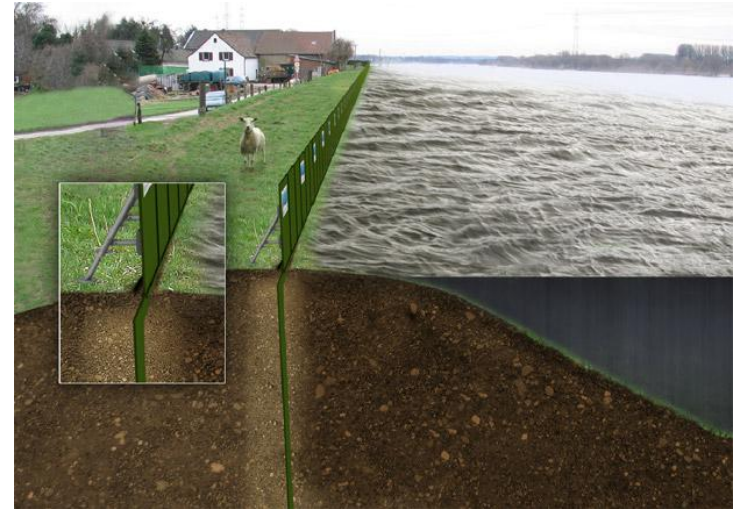
*Flooding in Chennai, [Source: Oxford Analytica]*



*Flooding in Vietnam, [Source: Floodlist]*

# Land-cover/use influences flooding

- Large scale diversions, earthworks
- Flood embankments
- Urbanisation, changing natural surfaces to artificial areas



[Source: Noah systems]



[Source: Telegraph]

- Agricultural practices related to choice of crop, cropping pattern & soil drainage system
- Forestation: density of forest, canopy, soil cover
- Land-use malpractices, e.g. excessive logging, conversion of forested areas into other land-use types, conversion of land through forest fires.

# Hellenic Rescue Team Attica (HRTA)

- Independent NGO, 100% volunteers, field-specific & first-aid training, certified experts
  - ➔ officially active since 1999, part of Civil Protection general plan (when needed)
  - ➔ emergency response, first-responders, safety, SAR, humanitarian aid, training
- Motivation for getting involved in SCENT
  - ➔ field experts, well-equipped for river operations, first-aid providers (safety)
  - ➔ strong support for community work, flood response & civil protection planning



LANDSAR: Wilderness, non-urban  
(mountain, canyon/river, forest)

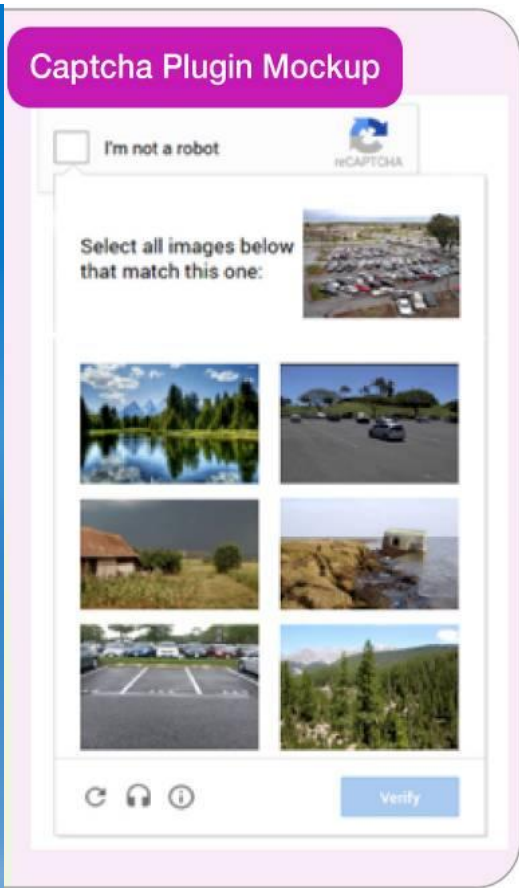


WATERSAR: Surface, underwater, shore  
(sea, large river, lake)



URBANSAR: emergency response, disaster relief  
(earthquake, flood, fire, large-scale accidents)

# SCENT @ a glance



# SCENT objectives



- People-centric Observation Web
  - ➔ Develop OGC-compliant web services and resources for GEOSS portal
- SCENT crowd-sourcing platform
  - ➔ Collect image & text from citizens, thus extend the in-situ infrastructure with citizen-sourced observations
- SCENT intelligence engine
  - ➔ Implement innovative machine learning to classify & annotate images/text sourced from citizens & existing open platforms.
- Serious gaming applications
  - ➔ Annotate unutilised images from popular platforms, e.g. Flickr, Panoramio





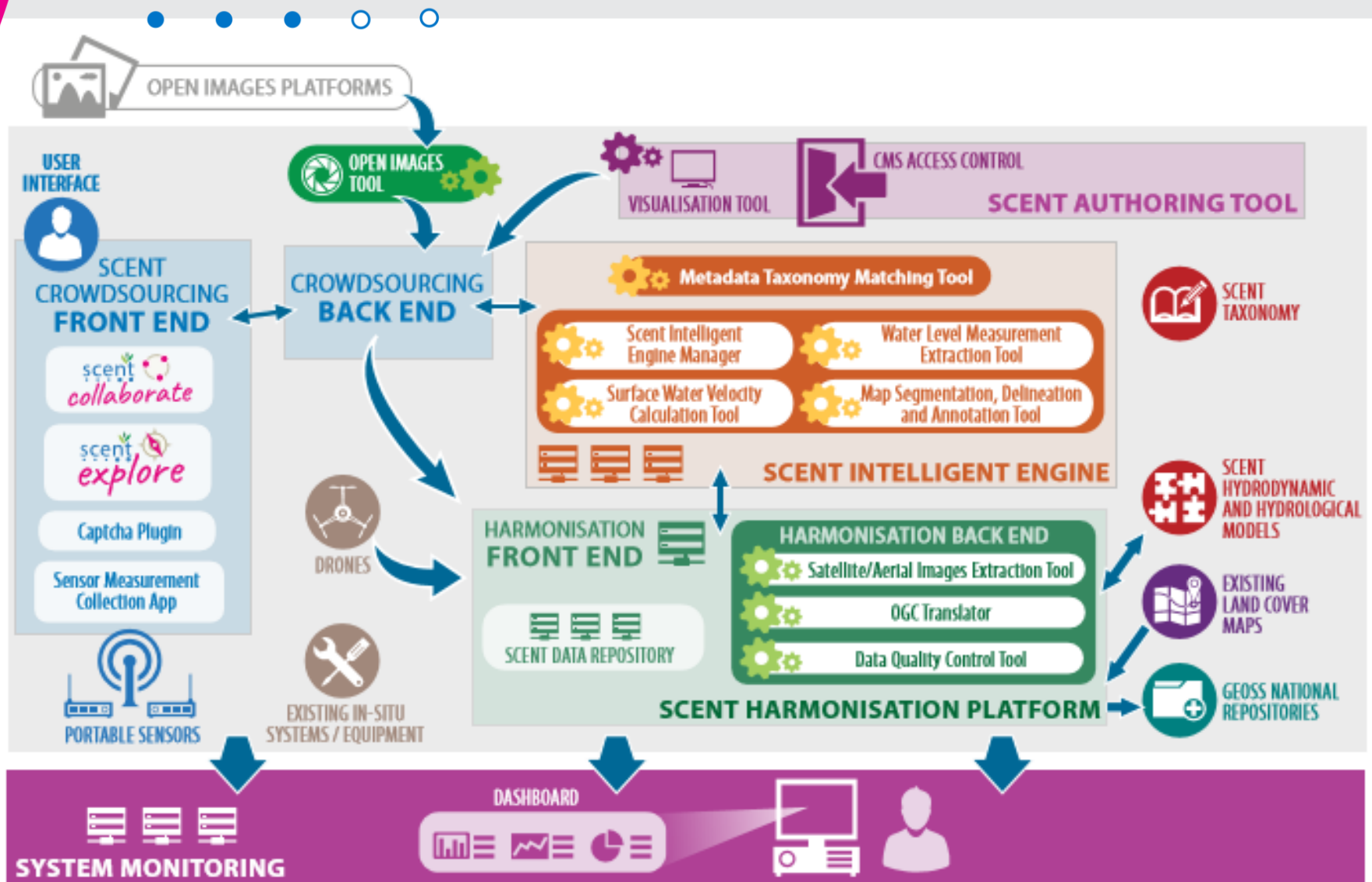
# SCENT objectives (2)



- Quantification of impact of land-cover/use changes
  - ➔ Improve flood risk maps and spatio-temporal flooding patterns.
- Simple authoring tool for policy makers
  - ➔ Customise SCENT toolbox according to target group, regional or social characteristics.
- Testing & validation of the SCENT smart toolbox
  - ➔ Run 2 large scale pilots of great environmental impact; the urban case of Kifisos river in Attica and the rural case of Danube Delta.
- Increase active engagement of citizens, associations, local authorities
  - ➔ Create a sustainable citizen movement

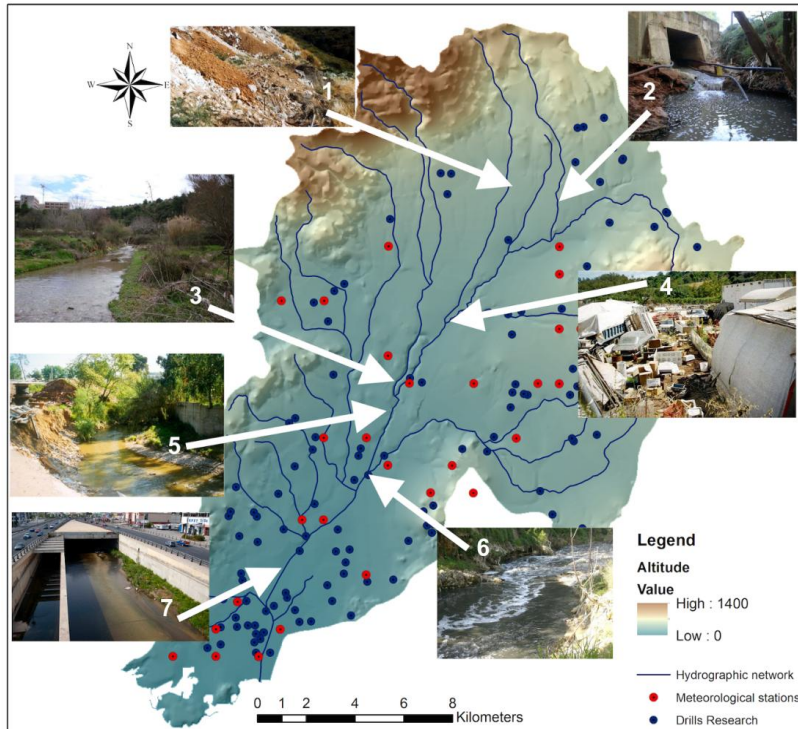


# SCENT architecture

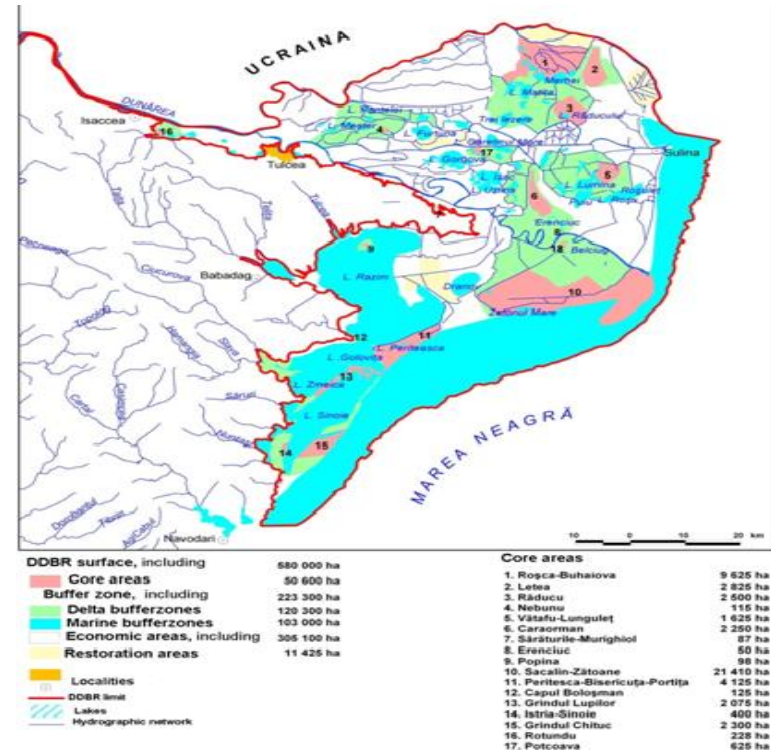


# SCENT large-scale pilots

## Urban demo: Kifisos river catchment in Attica, Greece



## Rural demo: Danube Delta in Tulcea, Romania



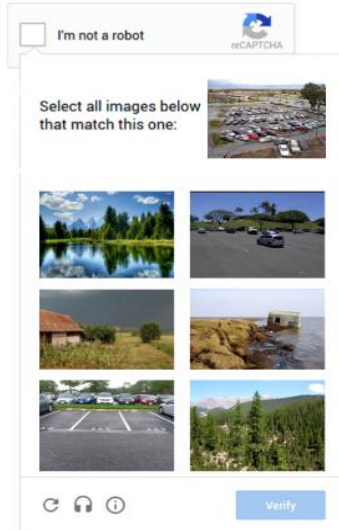
# SCENT large-scale pilots (2)

- At least 200 participants in each demo, aiming to reach ~ 1000

- SCENT NGOs (HRTA, SOR)
- 5 municipalities around Kifisos mobilised by Attica regional authority
- External volunteer groups & environmental associations
- Individual citizens mobilised through SCENT dissemination campaigns



*Birdwatchers @ Danube Delta*



- Online SCENT toolbox validation
  - Download gaming app in personal devices for image annotation from Flickr, Panoramio
  - Use CAPTCHA plugin and implicitly annotate pool of images from open repositories

# SCENT targets (audience)



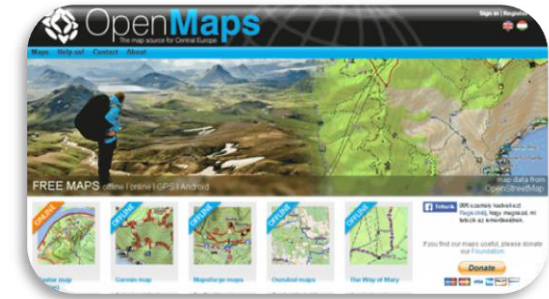
Municipalities, regional governments, ministries of environment



MINISTRY OF ENVIRONMENT ENERGY & CLIMATE CHANGE



Website developers



Open & commercial map providers



Social network providers



Photo-sharing platforms



Education ministries, schools



Civil protection agencies, NGOs

# SCENT Dissemination channels



Networking with environmental associations, grassroots orgs & NGOs



Training



Dissemination material, website, social media



Publications, Conferences



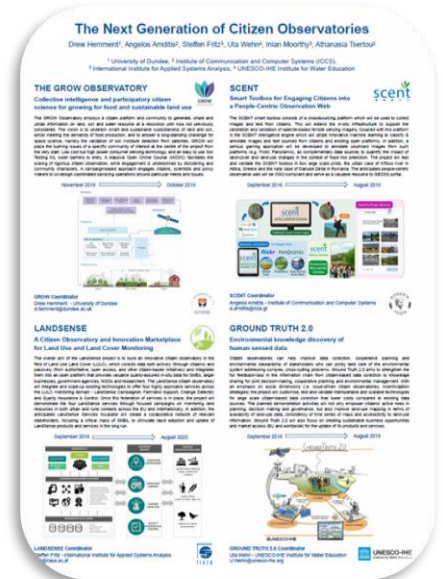
SCENT Brand identity



Early childhood education programmes



TV documentary



Links with other Citizen Observatories

# SCENT Current status



- Focus groups
  - ➔ Already conducted events with focus groups (experts) and plain citizens (end-users)
- SCENT crowd-sourcing
  - ➔ Available via web platform & mobile app, prototypes currently under development
- SCENT internals
  - ➔ Architecture, design, SIE, taxonomy, mockups (GUIs), data fusion, image semantics
- Pilots in Attica & Danube Delta
  - ➔ Preparing both closed- and open-call events for test deployments (2018+)



# SCENT citizen online survey



Please indicate in the table below how often you engage in the following:

	Several times per day	Once per day	Few times per week	Few times per month	Rarely	Never
Use social networks, e.g. Facebook, Twitter, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contribute to public forums or blogs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use your phone to take pictures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use messaging apps (WhatsApp, Facebook Messenger, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Share content online e.g. upload pictures, share articles, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

YOU can contribute to SCENT user requirements!

[https://survey.eu.qualtrics.com/SE/?SID=SV\\_39u237uwhSr8am9](https://survey.eu.qualtrics.com/SE/?SID=SV_39u237uwhSr8am9)

It will only take you 10-15 minutes!







Find SCENT online:

Website: [scent-project.eu](http://scent-project.eu)

Twitter: [@SCENT\\_EU](https://twitter.com/SCENT_EU)

YouTube: [scent EU](https://www.youtube.com/scentEU)

Facebook: [facebook.com/ScentEU](https://facebook.com/ScentEU)

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