Recent technological advances, such as mobile internet, smart phones and the Internet of Things (IoT), resulted in an unprecedented wealth and diversity of data. Big Data, i.e. tailored knowledge extraction from these new sources, became popular in almost all sectors of industry and research. Especially user-generated Web content from crowd sensing provides new and sometimes unique sources of environmental information. The integration and application of these sources – often termed crowdsourced Geographic Information or Volunteered Geographic Information (VGI) – creates a novel inter-disciplinary research area involving diversified topics across multiple spatial and temporal scales.

EU-funded COST actions, such as ENERGIC (IC1203) or Mapping and the Citizen Sensor (TD1202) already contribute to this research field. The FP7-funded Citizens’ Observatories projects (http://www.citizen-obs.eu/), Citclops, Citi-SENSE, COBWEB, Omniscientis and WeSenselt, collectively develop novel technologies and applications in the domain of Earth Observation and citizens’ involvement, aiming at crowd sensing of observations in various domains such as air quality, water quality, flooding, land use and biodiversity. A new set of Citizens’ Observatories is now proposed as part of the Horizon 2020 call SC-5 in order to ensure further development, testing and demonstration in real conditions. All together, these activities help to quickly advance the theoretical underpinnings of Environmental Crowd Sensing and Big Data, but also propose new methods and tools for data capture, information extraction and knowledge creation.

This workshop particularly addresses the technologies, technical infrastructures, platforms and services that are originated or used by these projects. We are especially interested in exploring the synergies between ongoing efforts, the exchange of lessons learned and potentially required standardisation work to ensure interoperability of the developed solutions. Accordingly, this half-day event intends to bring together architects and developers working on crowd sensing infrastructures, architectures and platforms and related Environmental Big Data including sensing data through the IoT. We will especially debate the questions: (1) Which functional components are essential to support our work? (2) Can we create a common data model for citizens’ observations? (3) Can we create a common framework for smart phone apps for crowd sensing? (4) How might we sustain infrastructures and platforms that enable Environmental Big Data and Crowd Sensing? (5) Where do we see most urgent needs for additional research and development?

The workshop topics will extend from the recent Crowdsourcing workshop during the INSPIRE’2015 conference in Lisbon (on Friday, 29 May 2015), http://geospatialworldforum.org/workshop.asp?Sp_Department=Crowdsourcing

After this workshop at EnviroInfo'2015, participants will be invited to continue and intensify the discussion with the wider community, including extended debates during a follow-up event later in the fall, and contributions to a special issue of the Journal for Spatial Data Infrastructure Research (IJDISR) on Crowd Sensing. This collection of full scientific papers shall then reflect the latest state of play with respect to Environmental Crowd Sensing and Big Data and point to the required research for the years to come.

ATTENDANCE:

The target audience includes representatives of relevant projects and activities, as well as public authorities involved in data production or in the development of environmental information systems, people involved in ongoing initiatives (e.g. citizenship, community mapping, environmental monitoring), young researchers
and doctoral students, academia, other organizations which can benefit from crowd sensing results (e.g. participatory mapping for development-oriented interventions), citizens (user generated content is an enabling technology to exchange information with others), teachers, Web operators, IT companies and public institutions that, for different purposes, make use of geographic information.

The typical workshop attendee is assumed to be involved in the development or use of the infrastructures, architectures, apps, or platforms for Crowd Sensing, Citizens’ Observatories and Environmental Big Data.

In order to prepare for a productive dialogue, please submit a (1 page) position statement by e.mail to the workshop organisers before July 31st, 2015.

ORGANISERS:
Arne J. Berre, SINTEF, Oslo, Norway (Arne.J.Berre at sintef.no)
Sven Schade, JRC- DG Joint Research Centre, Ispra, Italy, (sven.schade at jrc.ec.europa.eu)

WEBSITE:  http://envip.wikidot.com/