



URBAN-GEO BIG DATA

RU : CNR – IREA

Consiglio Nazionale delle Ricerche Istituto per il Rilevamento Elettromagnetico dell'Ambiente <u>www.irea.cnr.it</u>

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Activities involving CNR-IREA



RU permanent employees: 5.7 Months



Activities involving CNR–IREA



RU contracts of non-employees (to be recruited):

1 research fellow for 12 months; 1 research fellow for 10 months

Activities involving CNR-IREA



- **WP1:** collect requirements for Quality indicators for the distinct types of Data themes
- WP2: contribute to define the Data Model (unique vs federated Data Model)
- **WP3.1:** provide the GET-IT tool (developed in RITMARE SP7) to deploy geo Big Data on the Web to implement a distributed, acentric SDI at each RU node (<u>http://www.get-it.it/</u>)
- **WP3.2**: provide EDI, GET-IT metadata editor, to easily create semantic enriched metadata based on INSPIRE/RNDT/ SensorML
- **WP4.4:** perform SAR image and InSAR analyses to investigate the changes in the reflectivity properties and to measure slow-moving displacements
- **WP4.8:** development of an empowered discovery service, based on quality indicators and relevance ranking of results
- **WP5:** testing of the SDI

WP3.1: Guided Web deploy of Geo Big Data through GET-IT

Ruolo



Web Services di GET-IT

GET-IT fornisce i seguenti servizi web interoperabili pe visualizzazione ed il download dei datasets geografici s standard OGC.



WP4.8: development of an empowered discovery service, based on quality indicators and relevance ranking of results



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WP3.2: Guided creation of metadata by means of EDI editor



WP4.4: SAR image analysis

Investigate the soil consumption effects through the analysis of the detected reflectivity changes and of the retrieved surface displacements

- sigma naught (σ⁰) maps: SAR images have to be properly radiometrically calibrated (including the effect of topography) and geocoded.
- Multitemporal analysis of the σ⁰ variation
- Vegetation consumption, vegetation mortality, soil alteration



ASAR/ENVISAT data



Activities involving CNR–IREA



What else?

- Highly detailed information on the spatial and temporal evolution of urban scenarios
- Survey on smart cities & urban data projects etc.
- Definition of new quality indicators for Urban data (focus on soil consumption)

What we would also like to do

- Implementation of procedures to compute quality indicators
- Case study user-evaluation of the discovery service
- Definition and implementation of an exploratory service of the whole distributed Urban Geo BIG Data Repository to obtain summaries of its content