URBAN GEOmatics for **B**ulk **I**nformation **G**eneration, **D**ata **A**ssessment and **T**echnology **A**wareness

PRESENTATION

FUNDS FOR UNIPD - Full Researcher for 2 years
Sector ERC - PE10 - 36 months
RESEARCH UNITS

- **Politecnico di Milano (Principal Investigator)** Maria Antonia Brovelli
- **ISPRA (sub-unit)** Michele Munafò
- **IREA-CNR** Riccardo Lanari
- **Politecnico di Torino -** Piero Boccardo
- **Università di Padova** Francesco Pirotti
- **Università di Roma "La Sapienza" -** Mattia Giovanni Crespi

PRESENTATION

- collection, integration and sharing of reliable and open spatial information benefiting both of different space (Earth Observation (EO) satellites and Global Navigation Satellite Systems (GNSS)) and ground (low-cost devices networked in the Internet of Things (IoT)
- for long-term monitoring, understanding and possibly addressing the urban processes; E.G. from soil consumption to mobility

ROLES OF UNIPD RESEARCH UNIT (UR)

TARGETS RESULTS

- Collect “traditional” urbanscape data
- Create an extended 3D data model from existing successful ones and validate it throughout the project by means of cross-checking with project partners’ data
- Deploy and share the collected geo data on the Web in compliance with OGC standard web services
- Software tools and procedures for urbanscape data representation and integration
- Extended 3D data model white sheet
- Extended 3D data model dedicated web page
- Implementation code for integration with the virtual globe webgis

R.U. UNIPD - ACTIVITIES

WP1 (Requirements analysis) - month 1-2

Role: participant (POLIMI responsible partner)

Objective: identification of the most important priorities and issues related to the mobility and soil consumption topics, on the basis of the state-of-the-art literature.

Expected target: detailed list of the geospatial data and their features, which have to be considered in the SDI

R.U. UNIPD - ACTIVITIES

WP2 (Data model) - month 2-18 + 28-30

Role: **RESPONSIBLE** (with POLIMI mainly and others)

Objective: development and tuning of the data model

Expected target: achieve an effective, efficient and comprehensive model for all the data considered within the SDI

R.U. UNIPD - ACTIVITIES

WP3 (Architecture design and implementation) month 2-12

WP3.1 (server side)

Role: participant (POLITO+CNR responsible + POLIMI participant)

Objective: implementation of a distributed, acentric and interoperable SDI, able to manage and share the data at federated servers nodes based at different RUs

R.U. UNIPD - ACTIVITIES

WP3 (Architecture design and implementation) month 2-12

WP3.2 (client side)

Role: POLIMI responsible

Objective: designing and implementing: I) a customizable and interactive platform for the multidimensional visualization and basic processing of the geospatial data; ii) a collaborative platform for the management and cross-validation of VGI data

WP3 Expected target: design and implementation of the SDI, by means of FOS (Free and Open Source) technologies compliant with OGC standard web services

R.U. UNIPD - ACTIVITIES

WP4: Data collection, processing and validation

- WP4.1 (URBANSCAPE DATA)
- Role: **RESPONSIBLE**
- Objective: 3D models of the urban reality. Work using existing models (i.e. CityGML) with the target of extending the model structure to allow linking all data from other partners.

The partner which will collaborate mostly will be POLIMI as it is responsible for client design and implementation (WP3.2)

R.U. UNIPD - ACTIVITIES

WP4: Data collection, processing and validation

- WP4.2-8

2. TRANSPORTATION DATA - POLITO
3. STATISTICAL / EO SOIL CONSUMPTION DATA - ISPRA
4. SAR AND InSAR DATA - CNR
5. LOCATION TRACKS + IoT (VGI (ACTIVE) – CROWDSOURCING (PASSIVE)) - UNIRM
6. USER-GENERATED DATA - POLIMI
7. TELECOMMUNICATION DATA- POLITO
8. DATA SELECTION THROUGH QUALITY EVALUATION - CNR

R.U. UNIPD - ACTIVITIES

WP5 (Testing)

- Role: participant (with all)
- Objective: test all the tools of the implemented SDI
- Expected target: detailed list both of the fully operational tools / functionalities and of the encountered problems

R.U. UNIPD - ACTIVITIES

WP6 (Functionalities)

- Role: participant
- Objective: application of the functionalities for the topics of interest
- Expected target: establish best practice cases for mobility and soil consumption