



UNIPD RESEARCH UNIT

Progress Report

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PRIN PROJECT: *URBAN GEOmatics for Bulk Information Generation, Data Assessment and Technology Awareness*



MINISTERO DELL'ISTRUZIONE DELL'UNIVERSITA' E DELLA RICERCA





UR UniPD - Team



Targets for UNIPD

Expected results for UNIPD

Progress report



finished



close



work in progress



not started yet

Next steps





UR UniPD - TARGETS



1.1 Collect “traditional” urbanscape data (UNIPD)

criticalities: Rome and Naples - still need shapefiles of the cartography (for now only OpenStreetMap = LOD 0)

```
wkt_geom  OID  UUID  DATA_ACQ  DATA_AGG  DATA_FIN  ENTE_FOR  ENTE_PROD  MODO_PROD  SC_ACQ  UN_VOL_AV
UN_VOL_POR  UN_VOL_QE  UN_VOL_EX  FME_BASENA  FME_DATASE  FME_FEATUR

POLYGON((394604.79277411504881456 4989547.85229585040360689,394610.62482659798115492 4989559.340253960341215189 , ...))
901757566  9d526b1e-6caf-42fb-a14c-02dfd9a57233  20171231000000  20171231000000  99991231000000  REGIONE PIEMONTE  ARPA
PIEMONTE  banche dati esterne - geometrie da catasto, altezza volumi da ARPA PIEMONTE (DSM-DTM,LAS)  1:10000  16  Non conosciuto
91  BDTRE  BDTRE  bdtre_dbzero.v_un_vol
```





UR UniPD - TARGETS



2. Create an extended 3D data model from existing successful model and validate it throughout the project by means of cross-checking with project partners' data (**UNIPD**).

Created Python script *shp2city*

Validation: problems in original cartography + validation through TUDelft software for topological coherence

Paper @ ISPRS TC IV Mid-Term Delft





UR UniPD - TARGETS



- 4. Deploy and share the collected geo data on the Web in compliance with OGC standard web services (CNR, POLITO: server side; POLIMI, **UNIPD**: client side). The visualisation will be through an ad hoc intelligent geoportal, allowing the 4D navigation as well as some processing of the data

See next point...





UR UniPD - Expected Results



10. Software tools and procedures for urbanscape data representation and integration (**UNIPD**)

See point before on shp2city - data ETL

Waiting for VSIX/CIRGEO/TESAF buying server in VSIX-GARR Node

Linux VM will provide access to UNIPD's CityGML model in different ways: direct download, link to data for Viewer by POLIMI





UR UniPD - Expected Results



- 11. Extended 3D data model white sheet (**UNIPD**).
shp2city manual page
- 12. Extended 3D data model dedicated web page (**UNIPD**)
Web tool ZCityGML





UR UniPD - Expected Results



- 13. A distributed and acentric interoperable geo-spatial data infrastructure sharing on the Web the project's multi source heterogeneous geo-data (CNR, POLITO: server side design; **POLIMI**, UNIPD: client side design; every RU: implementation).

UNIPD will provide access to CityGML models of cities through its portal





UR UniPD - Expected Results



- 14. An INSPIRE metadata record enriched with quality indicators for each GEO BIG DATA element managed by the SDI (CNR, UNIPD).

Data sent

- 18. Implementation code for integration with the virtual globe webgis (**UNIPD**).

Integration with POLIMI (Eylul)





UR UniPD - Progress



shp2city

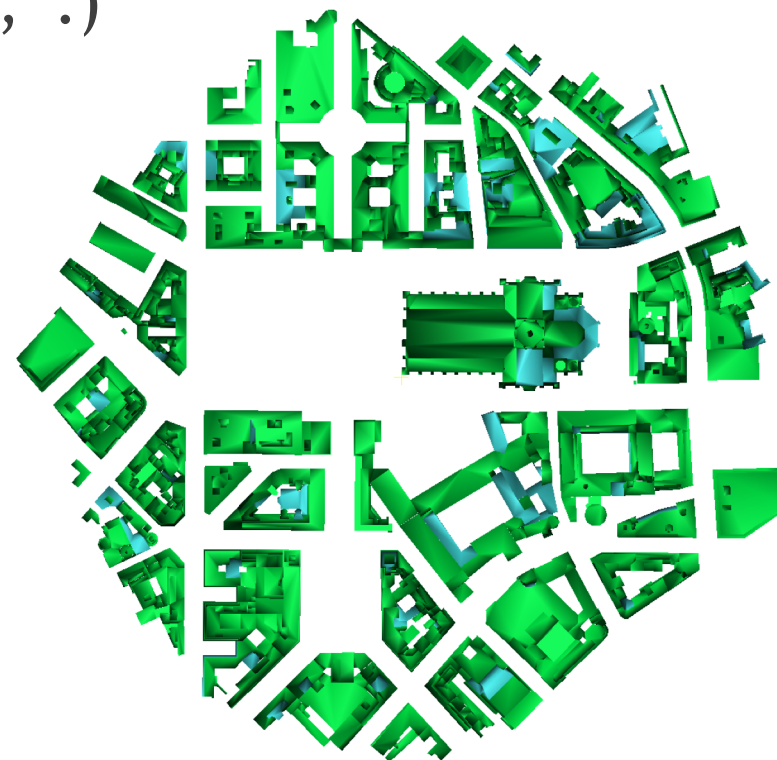
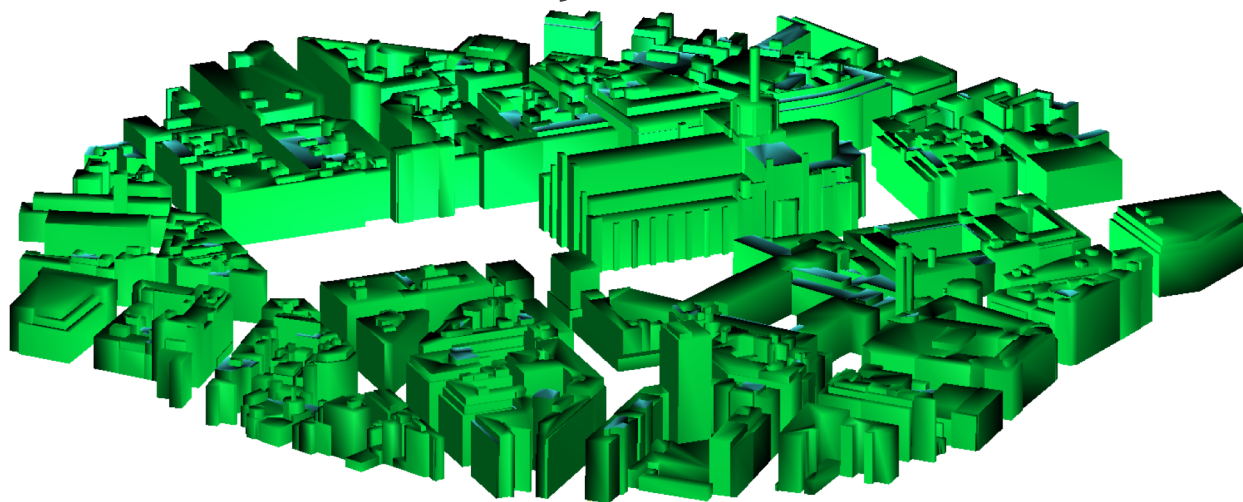
(1) Geopandas (“GeoPandas 0.3.0,”.)

(2) lxml (“lxml”)

3rd party validators

CityGML-schema-validation

val3dity



THANK YOU

TIME FOR DISCUSSION

