

GISCAD-OV: Galileo High Accuracy Service: a contribution of Surveyors to GNSS

Maurice Barbieri (Switzerland), Florian Lebourdais (France), Ivars Nudiens (Latvia) and Enrico Rispoli (Italy)

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SUMMARY

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Origins of the project:

EUSPA, the European GNSS Agency (former GSA) who supervises Galileo would like to see the deployment of a "GNSS" geolocation system, i.e. to the nearest centimetre, independent of other international players.

To this end, the European Commission has released several hundred million euros under the Horizon 2020 programme to encourage all actors in European R&D to develop applications that would use the full potential of Galileo in all sectors.

Who better than the profession of surveyors to articulate extreme precision and land measurement? On the side-lines of the FIG 2018 Congress in Istanbul, the idea of a joint response from several players in the profession, from different European countries, became obvious.

A project was born: "Galileo Improved Services for Cadastral Augmentation Development On-field Validation". The project started on 1 December 2019 and will last 42 months, for a total budget of 3.23 M€ financed by EUSPA.

To implement it, a large consortium was therefore set up around a coordinator GeoWeb S.p.A., seconded by SOGEI S.p.A. for technical leading (both Italian companies), including the contribution of European surveyors to the project is steered by CLGE. The CLGE plays an essential role, mainly in the definition of user needs, pilot projects and dissemination of

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results.

GISCAD-OV Solution:

The main scope of the GISCAD-OV project is to design, develop and validate an innovative and cost-effective High Accuracy Service for cadastral and property surveying applications, based on GPS and Galileo High Accuracy Services (HAS) and advanced techniques of Precise Point Positioning-Ambiguity Resolution quick convergence (PPP-AR).

The project aims also to set up a GISCAD-OV Service Operator Centre, able to fully integrate the existing augmentation and national infrastructures for improving efficiency and effectiveness of cadastral operations, reducing cadastral procedures' time for the benefit of its many users, including surveyors, and ultimately for the good of all European citizens.

Europe-wide Pilot Project campaign:

Since fall 2021, and after 18 months of software development and hardware settings, the project has entered its truly operational phase.

A Europe-wide pilot project campaign (Croatia, Czech Republic, Estonia, France, Germany, Italy and Spain) is currently carried out for validating the implemented solution, applying single countries cadastral regulations. These tests are conducted with the contribution of benevolent local surveyors who help in selecting survey sites for each required cadastral scenario (division / sub-division of parcel, empty plot or building) and environmental condition (rural, peri-urban, dense urban...).

Expected Project Impacts:

Each stakeholder of the project expects a certain number of returns, benefits and gains, whether in terms of profitability (time, infrastructure) or new technical and commercial opportunities.

For the Surveyors, expected returns, benefits and gains beyond improved availability in urban areas or one-time terminal configuration, may consist in opportunities of new markets due to HAS availability.

As the high-accuracy positioning market is very dynamic, currently driven by emerging applications such as autonomous vehicles and drones, agriculture2.0, all of which is leading to the democratisation of high accuracy.

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New markets and applications where surveyors, as professionals in the field of measurement, can be providers of high quality and accurate data

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