



AI4GEO: An automatic 3D geospatial information capability

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The availability of **3D Geospatial information** is a key stake for many expanding sectors such as autonomous vehicles, business intelligence and urban planning.

The availability of huge volumes of satellite, airborne and in-situ data now makes this production feasible on a large scale. It needs nonetheless a certain level of skilled manual intervention to secure a certain level of quality, which prevents mass production.

New artificial intelligence and big data technologies **are key in lifting these obstacles.**

The AI4GEO project aims at developing an automatic solution for producing 3D geospatial information and offer new value-added services leveraging innovative methods adapted to 3D imagery.

The AI4GEO consortium consists of **institutional partners** (CNES, IGN, ONERA) **and industrial groups** (CS-SI, AIRBUS, CLS, GEOSAT, QWANT, QUANTCUBE) covering the whole value chain of Geospatial Information.

With a 4 years' timeline, the project is structured around 2 R&D axes which will progress simultaneously and feed each other.

The first axis consists in **developing a set of technological bricks allowing the automatic production of qualified 3D maps composed of 3D objects and associated semantics**. This **collaborative work** benefits from the latest research from all partners in the field of AI and Big Data technologies as well as from an **unprecedented database** (satellite and airborne data (optics, radars, lidars) combined with cartographic and in-situ data).

The second axis consists in deriving from these technological bricks **a variety of services for**

different fields: 3D semantic mapping of cities, macroeconomic indicators, decision support for water management, autonomous transport, consumer search engine.

Started in 2019, the first axis of the project has already produced very promising results. A first version of the platform and technological bricks are now available.

This paper will first introduce AI4GEO initiative: context and overall objectives.

It will then present the current status of the project and in particular it will focus on the innovative approach to handle big 3D datasets for analytics needs and it will present the first results of 3D semantic segmentations on various test sites and associated perspectives.