

Title: Galileo is Coming! - How Should It be Used in DP?

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Abstract

Fugro provides GNSS (Global Navigation Satellite System) augmentation services using geostationary satellites for distribution of corrections. The high end service is a GPS and GLONASS Precise Point Positioning (PPP) service with decimeter accuracy named G2. This service uses Fugro's network of reference stations distributed around the world to generate accurate corrections to the GNSS satellites orbits and clock valid all over the globe. It is Fugro's policy to include additional GNSS as they become available.

EU is developing the Galileo GNSS system which will have an Initial Operational Capability (IOC) in 2014-2015. The launching of these satellites has started and 4 In Orbit Validation (IOV) satellites are in orbit now.

Fugro has implemented the capability to track and generate high accuracy orbit/clocks for the Galileo system for use in Fugro's high performance PPP service. In March 2013 the first Galileo only PPP positioning using the 4 Galileo IOV satellites was demonstrated with similar or better performance as GPS and GLONASS. Performance plots using Galileo in PPP will be presented. It should be noted that these satellites are not set healthy yet, and cannot be used in operational services.

With the introduction of additional GNSS systems like Galileo and the Chinese BeiDou, the redundancy is not only increased with respect to satellites visible, but there will be better redundancy at GNSS system level too. For DP operations it could be considered to configure two independent setups instead of mixing systems into one solution. As more Galileo satellites become available, one setup could for instance include GPS only and a second setup a combination of GLONASS and Galileo. Examples of different ways to mix GNSS system are provided.

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