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Author: Dr. Ignacio Fernandez Hernandez
European Commission, Belgium, Ignacio.FERNANDEZ-HERNANDEZ@ec.europa.eu

Mr. Giovanni Vecchione
Rhea Group, Belgium, g.vecchione@rheagroup.com

Mrs. Flor Diaz Pulido
European Commission, Belgium, Flor.Diaz-Pulido@ec.europa.eu

Mr. Marc Jeannot
European Commission, Belgium, marc.jeannot@ec.europa.eu

Ms. Giedre Valentaite
European Commission, Belgium, giedre.valentaite1@ec.europa.eu

Mr. Reinhard Blasi
European Union Agency for the Space Programme (EUSPA), Czech Republic,
reinhard.blasi@gsa.europa.eu

Mr. Joaquin Reyes
European Union Agency for the Space Programme (EUSPA), Czech Republic, joaquin.reyes@gsa.europa.eu

Mr. Javier Simon
European Union Agency for the Space Programme (EUSPA), Czech Republic, javier.simon@gsa.europa.eu

GALILEO HIGH ACCURACY: A PROGRAM AND POLICY PERSPECTIVE

Abstract

In February 2017, the Commission formalised the addition of a High Accuracy service to Galileo, the European GNSS, through the transmission of Precise Point Positioning (PPP) corrections. One year later the decision has been taken to offer this service for free. This new approach implies that Galileo takes on-board the definition and provision of the service, first as a demonstrator (2019), and later as an operational service (2020). The Commission's goal is to offer a free HA signal with a minimal impact on established providers while allowing innovation to flourish in both consolidated markets (e.g. land surveillance, high precision agriculture or maritime economic sectors, including off-shore renewable energy) and emerging markets, notably in key areas such as drones and autonomous cars.

While high accuracy services are already widespread in professional sectors, providing them on a worldwide basis is a novel service that Galileo will offer for the first time by 2020. At a regional level other GNSS systems such as Beidou in China or QZSS in Japan are providing or announced High Accuracy data dissemination through signal in space. Galileo will be the first global constellation able to provide this service globally.

Typically, high accuracy services are based on the provision of accurate satellite data (clocks, orbits and biases) and atmospheric data (mainly ionospheric corrections). For Galileo, this data will be transmitted through an open format in the Galileo E6-B signal (around 450 bits per satellite per second). Definition of format and scheduling of HA corrections, considering available bandwidth and Galileo uplink strategy, will be critical to maximize user performance.

This paper will describe the recent history in the Galileo programme regarding the high accuracy service, including the rationale that led to the adoption of the free scheme, its current status, and main directions.