

Recommendation for Committee Decision

Prepared by: Working Group B
Date of Submission: 13 November 2014
Issue Title: Nequick Ionospheric Model

Background/Brief Description of the Issue:

Ranging errors induced by ionospheric effects constitute one of the largest error source for a single frequency GNSS user. Ionospheric models are capable to estimate the ionospheric impact on the ranging measurement and compensate for it. Good ionospheric models are important to enhance the ranging accuracy for single frequency GNSS users.

Discussion/Analyses:

Results obtained applying the Nequick ionospheric model implemented in Galileo indicates good ionospheric error compensation capability. WG-B members showed interest in this model and encouraged to gain further insight regarding the implementation of the Galileo Nequick model at receiver level such as to allow for comparisons wrt. alternative ionospheric compensation models.

Recommendation of Committee Action:

- *To distribute to the Service Providers and Users the document providing the detailed description of the Nequick algorithm implemented in Galileo for the correction of the ionospheric error in single frequency users;*
- *For the Service Providers and interested users participating in the ICG, to assess the performance and usability of a Nequick ionospheric correction algorithm for the single frequency users similar to the one adopted by Galileo in view of its expected good performance compared with other models, i.e. at low latitudes.*

Recommendation for Committee Decision

Prepared by: Working Group

Date of Submission: 13 November 2014

Issue Title: Interoperable GNSS Space Service Volume (SSV) Characterization Outreach

Background/Brief Description of the Issue:

WG-B has followed in the last period the Recommendation to establish an “Interoperable GNSS Space Service Volume”. WG-B has addressed this topic at technical level at several Meetings and has identified the advantages of an Interoperable GNSS SSV for the Space User community. So far several GNSS service providers supported this initiative either providing already their SSV characterization or indicating their intention to do so in the near future.

Discussion/Analyses:

In order to communicate to the public domain the advantages of an interoperable GNSS SSV and the relevant support of every GNSS service provider, interested members of WG-B have agreed to elaborate a booklet identifying

- The advantages of an interoperable GNSS SSV for space users
- The support of every GNSS service provider to an interoperable GNSS SSV based on an agreed comprehensive template
- An estimation of the capabilities of the identified interoperable GNSS SSV, given the individual SSV characteristics per service provider as input

This booklet is considered of particular interest for GNSS space-receiver manufacturers. The booklet is meant to characterize the contribution of the different GNSS to an interoperable GNSS SSV for the benefit of the users, but shall not induce commitments as they are handled by the individual GNSS Providers in their respective Performance Commitment Documents.

The booklet shall be worked out by WG-B members representing GPS, GLONASS, BeiDou, Galileo, QZSS, IRNSS and they shall organize the necessary work to have a version for final commenting and approval within WG-B at ICG10 ready.

Recommendation of Committee Action:

GNSS Providers are recommended to support the SSV outreach by making the booklet on “Interoperable GNSS Space Service Volume” available to the public through their relevant websites once the booklet is available.