The GNSS Working Group of the IGS - Challenges of the GNSS Modernization Programs

1   R. Weber

Institute of Geodesy and Geophysics, TU-Vienna, Austria (rweber@mars.hg.tuwien.ac.at /
Fax: +43 1 58801 12896 / Phone: +43 1 58801 12865)

For more than 10 years the International GNSS Service (IGS) has demonstrated a knack for innovation to maximize the benefits of GPS/GNSS signals in space. Today the IGS provides a large set of high quality products for a huge number of applications e.g. in geodynamics, surveying or atmosphere monitoring. A key objective of the IGS is to provide users anywhere in the world access to highest level GNSS data, products and resources for scientific applications, through an "open data policy". This is naturally dependent upon the availability and performance of the various satellite systems.

Recognizing the importance of the upcoming new European satellite navigation system (GALILEO) and of the modernization programs planned for GPS and GLONASS the IGS decided to set up a GNSS-Working Group. Major goals of this WG are to prepare a consolidated feedback to GNSS system engineering based on relevant IGS experience of providing highest accuracy products for the existing systems and concerning the work of IGS Analysis Centres as well as other IGS Working Groups to reflect opportunities of the various GNSS modernization programs.

The recent launches of the first GPS IIR-M satellite as well as two GLONASS-M satellites offers new opportunities and signals for IGS data processing but also carries the risk of introducing new intra- and intersystem biases e.g. Satellite Antenna Offsets or Differential Code Biases. An upcoming additional challenge obviously will be the launch and data processing of the GALILEO IOV satellites in 2007. Thus special emphasis is given to calibration characterization issues such as the role of SLR for

orbit determination, estimation of inter-system and inter-frequency biases, clock and orbit prediction as well as reference frame definition and realization.

This presentation will give a summary of the activities of this GNSS-WG and touch upon the strategies of the International GPS Service for optimizing the future use of multiple integrated GNSS.