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CIGALA: an FP7 innovative activity to tackle the threat of Ionospheric Scintillation to GNSS operations in Latin America

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Drifting ionospheric electron density irregularities may lead to the scintillation of transionospheric radio waves, as in the case of signals broadcast from artificial satellites. Scintillations can not only degrade signal quality but also cause receiver loss of lock on GNSS satellites, therefore posing a major threat to GNSS based applications demanding high levels of accuracy, availability and integrity, including EGNOS-based applications notably in low latitude areas. The problem is particularly acute in Latin America and will be further amplified with the next solar maximum, predicted for 2013. The CIGALA (Concept for Ionospheric Scintillation Mitigation for Professional GNSS in Latin America) project, led by Septentrio NV and co-funded by the European GNSS Supervisory Authority (GSA) through the European 7th Framework Program, will tackle this problem. The aim of the CIGALA project is to develop ionospheric scintillation mitigation countermeasures to be implemented in Septentrio's professional multi-frequency multi-constellation GNSS receivers and tested in Latin America. The project will leverage research and development activities coordinated between European and Brazilian experts and will involve a wide scale ionospheric measurement and test campaigns that will be conducted in Brazil with the support of several local academic and industrial partners. Details on the objectives, current status, and workflow of the project will be presented and discussed.