



CGMS-36, NOAA-WP-22
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Agenda Item: II/7
Discussed in WG II

Report on Radio Occultation Measurements

In response to CGMS Recommendation 35.05

NOAA-WP-22 provides a short status report on plans and evaluation for the continuation of radio-occultation measurements at NOAA.



In view of the positive impact of radio-occultation measurements on NWP forecasts CGMS expresses strong support to future plans for the continuation of radio-occultation measurements from constellations with adequate coverage.

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The continuation of future radio-occultation (RO) missions is being supported in different ways.

NOAA is currently developing a follow-on plan for the Constellation Observing System for Meteorology, Ionosphere, and Climate (COSMIC) for use in the current FY11-14 PPBES cycle. The evaluation of different RO constellations proposals is intended to ensure the continuation of RO measurements for NWP forecasts. Several of the constellation options were identified during the 2007 WMO workshop and some others were presented to NOAA in response to Solicitation 2008-RFI-Earth-Ops. The objective of this solicitation was to provide a conceptual understanding of the costs, benefits and configuration options for a Global Navigation Satellite System (GNSS) RO constellation.

Most of the missions under evaluation allow the capability to track GALILEO signals in addition to GPS. The missions vary in the number of Low-Earth Orbit (LEO) satellites being deployed, the orbit configuration and downlink frequencies. The selection of the proposals is being based on funding and technology capabilities.

In addition, considerations on the optimal number of LEOs to be deployed and adequate coverage are being addressed in CEOS Category I, Action WE-07-03. The action assesses the requirements needed to perform Observation System Simulation Experiments (OSSEs) to compare operational benefits of the various constellation options. This action has been recently closed. Based on funding availability, NOAA can perform OSSEs with RO measurements in the near future. The experiments will provide answers on the optimal number of LEO satellites and orbit configuration to ensure maximum benefit from the RO observations.