FORMOSAT-3/COSMIC FOLLOW-ON MISSION PLAN AND CURRENT PROGRESS

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FORMOSAT-3/COSMIC mission is to demonstrate the value of near-real-time GPS Radio Occultation (GPS-RO) observations in operational numerical weather prediction. The satellite system is currently providing global GPS-RO data in near-real-time to over 1,400 users in more than 51 countries. The GPS-RO data has been demonstrated to be a valuable asset to the climate, meteorology, and space weather communities. These communities include global real-time forecasting users/centers as well as international research communities. The FORMOSAT-3/COSMIC mission will reach the end of its design life in 2011, and the critical real-time satellite observing capability will begin to degrade as satellites become no longer operational. In order to continue to meet the data continuity requirements, National Oceanic and Atmospheric Administration (NOAA) and National Space Organization (NSPO) intend to provide a high-reliability next generation follow-on satellite system: FORMOSAT-7/COSMIC-2 Mission. The objective of FORMOSAT-7/COSNIC-2 is to collect a large amount of atmospheric and ionospheric data primarily for operational weather forecasting and space weather monitoring as well as meteorological, climate, ionospheric, and geodetic research. It is expected to be a much improved constellation system consisting of a new constellation of 12 satellites for an operation mission. The primary mission payload will be a GNSS RO receiver and will collect more soundings per receiver by adding European GALILEO system and Russians Global Navigation Satellite System (GLONASS) tracking capability, which will produce a significantly higher spatial and temporal density of profiles. These will be much more useful for weather prediction models and also for the severe weather forecasting including typhoons and hurricane, as well as for the related research in the fields of meteorology, ionosphere and climate. In addition to the mission payload, there will be several science payloads that may be complement to the GNSS RO payloads, as required. The FORMOSAT-7/COSMIC-2 program is implemented in accordance with the AIT/TECRO (US-Taiwan) Agreement, which has been sign-off in May of 2010. This Agreement provides a framework through which NOAA and NSPO will implement a joint mission in the areas of mutual interest in the development, launch and operation for an operational weather system mission. The talk will provide an update of the current progress toward the implementation of the joint mission that intends to have 12-satellites constellation, and the multiple launch periods are between 2014 and 2017.