United States and Taiwan scrap mission for next generation radio occultation satellites

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The United States' National Oceanic and Atmospheric Administration (NOAA) and Taiwan's Ministry of Science and Technology agreed in a joint memorandum that the two agencies would halt plans to develop a second set of Constellation Observing System for Meteorology, Ionosphere and Climate (COSMIC) 2 satellites, known as COSMIC-2B. The project would have produced next-generation global positioning system (GPS) radio occultation data for weather forecasting from six high orbit satellites. The radio occultation satellite data feeds into weather forecast models, and has improved the prediction capabilities of four-day model forecasts by an additional eight hours. COSMIC-2B was initially planned to complement the low orbit COSMIC 2A satellites that are set to launch in early 2018.

The program has failed to gain significant traction due to reported funding issues for both countries since the U.S.-Taiwan agreement was signed in 2010. Under the original agreement, the Taiwanese were to provide six spacecrafts, integration of the payloads, and a mission operation center. The United States' responsibilities included providing six sensors, data recovery stations, command and control stations, and payload data processing and archival.

While the Weather Research and Forecasting Innovation Act of 2017 instructed NOAA to complete and operationalize the entire COSMIC-2 mission, no money was appropriated in the fiscal year (FY) 2017 budget, and the appropriations legislation called for NOAA to report analysis of commercial alternatives to COSMIC-2B. For FY 2018, President Donald Trump's budget request did not include funding for COSMIC-2B.

The discontinuation of the COSMIC-2B satellite project comes at a time when commercial companies are developing private GPS radio occultation systems. In FY 2016, Congress initiated a Commercial Weather Data Pilot program, with $3 million allocated to assess the potential viability of using commercial weather data in NOAA's weather modeling and forecasting. GeoOptics, Inc. and Spire Global, Inc. were awarded contracts in September 2016 to provide space-based radio occultation data, and NOAA is now analyzing data collected by Spire Global's satellites.

Sources: Earth Observation Portal, Library of Congress, National Oceanic and Atmospheric Administration, SpaceNews, University Corporation for Atmospheric Research