



NSRS Modernization News

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geodesy.noaa.gov/datums/newdatums/TrackOurProgress.shtml

Industry Workshop

On May 7-8, NGS hosted select industry partners for two days of focused discussion regarding the modernized NSRS. Based on these discussions, NGS will begin accelerating the creation of prototypes of various products and services that will support the 2022 modernization. These prototypes will enable industry partners to begin testing their implementation over the next year. Find related workshop materials and presentations on NGS' New Datums Industry Engagement web page.

Recent Decisions

Some critical decisions were made recently:

- The four terrestrial reference frames (TRFs) of the modernized NSRS will be defined relative to IGS 14.
- The reference epoch of the four TRFs, as well as that of GEOID2022 and other static components of NAPGD2022 will be 2020.00.

“Standard Operating Procedure”

NGS has held numerous internal discussions in an attempt to codify the exact operating procedures in 2022 and beyond. The decisions resulting from the discussions will be presented in “*Blueprint for 2022, Part 3: Using the modernized NSRS*”. Answers to questions such as “will GNSS be required in a leveling survey?” and “how will NGS detect and correct a CORS position that is drifting from its predicted behavior?” are nearly finalized, and will soon be included in the draft form of Blueprint Part 3.

Progress in Ongoing Projects

There are currently 18 ongoing projects around NGS that directly related to NSRS modernization. Here are highlights from a select few:

• xGEOID18

Project Manager: Dr. Yan Wang

New this year will be the release of the xGEOID in the areas of Guam/CNMI and American Samoa, as well as a companion deflection of the vertical model, xDEFLEC18.

• Leveling in NAPGD2022

Project Manager: Kendall Fancher

The mathematical model which will combine GNSS data and leveling data has been finalized and codified in the recently released NOAA Technical Memorandum NOS NGS 74: “*On Least-Squares Adjustments within the Variance Component Model with Stochastic Constraints*”. This math model will be incorporated in the upcoming Leveling expansion to OPUS-Projects.

• VERTCON 3

Project Manager: Dr. Dru Smith

NGS has completed a complete re-build of the software needed to make VERTCON grids. Planned grids for VERTCON 3 include a re-build of the NGVD29/NAVD88 grid in CONUS, as well as a first-of-its-kind transformation grid for these same datums in Alaska. We're also investigating transformations between local tidal datums and official NSRS vertical datums in various island territories. Once in place, these new transformations will be added to the NGS toolkit and be used to create prototype transformations between current vertical datums and NAPGD2022.

