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Federal Geodetic Control Subcommittee Meeting

Juliana Blackwell Chair, FGCS

February 7, 2023



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Time	Торіс	Presenter
1:00 – 1:10	Welcome and Introductions	Juliana Blackwell
1:10 – 1:20	NGS Activities	Juliana Blackwell
1:20 – 1:40	NSRS Modernization Efforts	Dru Smith
1:40 – 2:00	OPUS Projects 5	Heather Nicholson
2:00 – 2:15	NGS 58 Rewrite	Dave Zenk
2:15 – 2:25	Constituent Update	Galen Scott
2:25 – 2:40	SPCS/USSF Update	Michael Dennis
2:40 – 3:10	Chief Geodesist Update	Dan Roman
3:10 – 3:30	Standards for Ground Control for Geospatial Data and Dual Sensor Configurations	Chris Parish
3:30 - 4:00	Work Group Updates, Open Discussion, Closing Remarks	Work Group Chairs Everyone 2

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FGCS Member Roll Call

This subcommittee coordinates geodetic data-related activities among 24 Federal and non-Federal agencies and will report its activities to the FGDC. <u>https://www.fgdc.gov/organization/working-groups-subcommittees/fgcs</u>



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NGS Workforce Update

- Dr. Shachak Pe'eri Chief, Geosciences Research Division
- Dr. Dan Gillins acting Chief, Spatial Reference System Division
 - This position will be advertised on USAJOBS.
 - Located in Silver Spring, MD
- Senior Advisor for Geodesy selection made, announcement pending
- Vacancy announcement for two Geodesists (equivalent to GS-13/14)
 - Mid-Atlantic Regional Advisor (Silver Spring, MD or Woodford, VA) and Alaska Regional Advisor (Anchorage, AK) positions
 - Closes February 14
- NGS Silver Spring, MD office under renovation
- NGS Field Operation group relocated to Chesapeake, VA

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PNT Activities

- Strategic Plan for Potential Interference
- PNT Advisory Board meeting <u>https://www.gps.gov/governance/advisory/meetings/2022-11/</u>
- National Space-Based Positioning, Navigation, and Timing Executive Steering Group meeting -February 24, 2023

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PNT Activities

T-CORS at Virginia DoT Reston Road Yard (<200 m from Ligado HQ)

T-CORS on Mitre 4 building in McLean, Virginia



Two geodetic-grade GNSS receiver/antenna pairs at each Test CORS – one pair resilient against Ligado L-band interference, one pair is potentially <u>not resilient</u>. Stations are completely autonomous – solar powered with cellular telemetry.

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Geodesy Crisis

Lack of available trained geodesists poses major risks to national security and economy

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NATIONAL GEOSPATIAL ADVISORY COMMITTEE - RESOLUTION ON GEODESY

"The decline of geodetic academic programs in the United States and the resulting shortage of practicing geodesists threatens our international technological competitiveness in Earth and space science, affecting our economic health and security. The National Geospatial Advisory Committee (NGAC) supports the findings, which include challenges, threats, and opportunities, outlined in the "Geodesy Crisis" white paper¹ authored by Dr. Michael Bevis et al. and discussed with NGAC members.

The NGAC strongly recommends that these serious national challenges be addressed immediately through an ambitious program of educational support, research funding, and government agency action including:

- Address the challenges and opportunities for augmenting geodesy capabilities in support of the National Spatial Reference System and within relevant Federal Geographic Data Committee (FGDC) agencies.
- Promote understanding within FGDC agencies and across the geospatial community about how geodesy expertise advances socio-economic, environmental, ecological, intelligence, and military programs to advance national security and economic growth.
- Augment budgets to sponsor academic training and research work in geodesy and allied geospatial fields (the NGAC commends the National Geospatial-Intelligence Agency for providing its leadership and financial commitment to this effort).
- Act expediently."

(Adopted by the NGAC on December 7, 2022)

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The Geodesy Crisis



Gedesy is the fundamental science of geospace. It supports and drives innovation in geospatial technology, the ~ \$1 tilliorly-ver geospatial economy, and the geospatial systems of nearly all military platforms and activities. In the early 1990s the U.S. government, especially the Department of Defense (DDD), largely disinvested in academic research and education in geodesy. In contrast, the countrise of the European Line in the contributed the most to the development of geodesy in the preceding centuries have maintained healthy ecademic training and research programs, which is also the case in Jagan, Canada, Australia and Neix Zealand. Furthermore, in the early 2000s, China began to make large and ever-growing investments in geodetic training and research. It now has more Ph.D. geodesits than the rest of the world combined, Juning this time period the greatest national collapse in geodetic capability occurred in the U.S., as its geodesits steadily retired, and most were not replaced. The Chinese military and defense industries now have access to hundres of Ph.D. geodesits in the entre DDD, including the National Geospatial-Intelligence Agency (NGA), is now approaching zero. The same is traving to the U.S. is on the verse of being permanently eclipsed in geodesy and in the downstream geospatial technologies. This threatens our national security and poses major risks to a economy that is strongly tied to the geospatial revolution, on Earth and, eventually, in space.



The inverted geospatial pyramid shows our vulnerability

November 1, 2022 - By David B. Zilkoski

Est. reading time: 14 minutes 🕒

Last year I was privileged to be part of a Blue-Ribbon Review Panel for an American Society of Civil Engineers (ASCE) surveying publication. The book is Surveying and Geomatics Engineering Privojeds, Technologies, and Applications. I recently received my copy of the published book in the mail and decided to highlight some sections. While preparing this column, the chapters reminded me of how geodesy has expanded into columns.

I first mestioned this in my July 2020 article for the "First First First Column of GPS Work, where I statef bath the buttering of American trained geodesistist poses a significant economic tisk for the United States. In that column, I mentioned how geodetic science and technology now underpin many sciences, large areas of engineering (such as dirivetiess vehicles and drones), navgalance and engineering (such as dirivetiess vehicles and drones), navgalance, precision agriculture, smart Ciles and location-based services. That is with police understanding geodesy is more critical today than even in January 2022, Mike Bevis, collaborating with others, prepared a white baper titler The Geoderg Crisis, " documenting the concern about the tack of trained geodests is in the United States.



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Geodesy Crisis

NGS activities:

- Support professional development and advanced education
- Raise awareness and communicate the risks and impacts to leadership
- Collaborate with NGA, NASA, and others on Geodesy Community of Practice
- Pursue direct hire authority and senior level position
- Provide grant opportunity focused on geodetic needs

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Workgroup Updates and Discussion