

Summary of the 27 January 2015 Federal Geodetic Control Subcommittee Meeting

Meeting Chair: Juliana Blackwell, Director of the National Geodetic Survey

FGCS Membership and Attendance

Department of Agriculture

US Forest Service – [Absent]

Farm Service Agency – [Absent]

Department of Commerce

US Census Bureau – Frederick Malkus III

National Geodetic Survey – Juliana Blackwell, Tatiana Bowie, Neil Weston, Rick Foote, Dru Smith, Julie Prusky, Joe Evjen, Vicki Childers, Christine Gallagher, Kendall Fancher, David Conner

Center for Operational Oceanographic Products and Services (CO-OPS) - Michael Michalski, Artara Johnson

Department of Homeland Security

US Coast Guard – LT Hermie Mendoza,

Federal Emergency Management Agency – [Absent]

Department of Defense

National Geospatial-Intelligence Agency – [Absent]

US Army Corps of Engineers - Mark Huber, James (Jim) Garster

US Naval Observatory – Christine Hackman

Department of the Interior

Bureau of Indian Affairs – [Absent]

Bureau of Land Management – Mike Londe

Bureau of Ocean Energy, Management – [Absent]

Fish and Wildlife Service – [Absent]

National Park Service – Tim Smith, Neil Winn

Office of Surface Mining, Reclamation, and Enforcement – [Absent]

US Bureau of Reclamation – [Absent]

US Geological Survey – [Absent]

Department of State

International Boundary Commission – [Absent]

International Boundary and Water Commission – [Absent]

Department of Transportation

Federal Aviation Administration - [Absent]

Independent Agencies

National Aeronautics and Space Administration – [Absent]

Tennessee Valley Authority – [Absent]

Federal Communications Commission – [Absent]

Juliana Blackwell (Chair, NGS) – Welcome and introductions

Juliana- We appreciate your time, and want to make the most use of it. I want to thank Neil with his fantastic job with assisting with the FGCS. We have a new chair for the vertical reference system work group submeeting (thank you Dru Smith). We will here from the work group submeeting today briefly to hear what was shared yesterday. We will also here from Julie Prusky in relation to Bluebook changes.

[Roll call led by Tatiana Bowie]

Work Group Leads - Reports from yesterday's work group submeetings (5 reports, 10 min each)

Vertical Reference Systems Work Group (Dru Smith)

Dru: replacement of the vertical datum (NAD88), reissuing of field procedures (ellipsoid and orthometric heights in GPS), ongoing discussion b/w Canada → what are we going to do about sea level change in relation to the vertical datum?, discussed how NGS will be involved with passive control (step functions), Question: NGS role in continuing collection of passive control (receive information from NSRS→ FGCS members, states, DOTs) → what is the benefit to NGS and the nation? (gravimetric geoid and CORS are the way we are moving towards).

*OMB A-16: passive control (mission)

Action item: need to have a number of follow up meetings before the Geospatial summit

Fixed Reference Stations Work Group (Neil Weston)

Neil: CORS program (2100 stations)→ cooperative endeavor, types of CORS sites & geodetic quality they will need, types of data (RINEX, Orbit products), HTDP, User-friendly CORS, relationships with US Coast Guard and FAA, benefits of CORS (short-term weather modeling, crustal motion communities, structural monitoring etc.) and how it serves other agencies, discussion of CORS sites/ selection criteria/ guidelines and where they should be placed (how to build a CORS, power consumption, types of antennas etc.), managing the CORS network (consumes a lot of human resources and data), how many CORS do we need to support the NGS and supporting agencies mission, scientific reasoning to have multiple CORS in one particular area (Houston/Galveston area), want to be a part of the GGOS community, geometric datum in 2022 (earth centered/ fixed)→ ITRF compatibility and neighbors while simplifying NAD83, global geospatial information management (UN)→ IAG/ IGS→ buy-in for various countries in the world.

Spectrum Work Group (Larry Hothem)

Neil: GPS band compatibility, GPS signal re-radiators (internal positioning) ie. Firefighters, LightSquared→ spectrum resourced (ie. Google), GPS signal modernization (GNSS systems use band within spectrum allocated→ compete with GLONASS and Galileo)→ discussion held at the PNT meeting, power limits and interference (FCC is paying attention to this topic)→ ie. Jammers & associated fines.

Instrument Work Group (Kendall Fancher)

Kendall: plans that NGS wants to get involved with (calibration baseline changes), development of alternate river crossing, evaluating the ability to measure the difficult environments

Methodology Work Group (Joe Evjen)

Joe: Recent guidelines and how FGCS has not recognized recent guidelines, GPS height guidelines, OPUS guidelines, GPS manual (Mark Huber), minimum requirements for GPS control (Larry Hothem).

[Joe discussed a spreadsheet showing minimum required metadata for geodetic control]

Comments:

Mike Londe: We need to look at this with a wider perspective (broader usable standard)

Joe: This is a test of what do you have to have on a record to have it be a geodetic control? What elements?

Neil: Were you interested in the methods to exchange data? XML came up when we were doing work with the sensors. We do know it's working in some areas of our profession.

Joe: Do we have any agencies that are exchanging data in formal standards?

*USMART

Tim Smith: What are we looking at this for?

Joe: This is in response to a FGDC data call → they asked us to update a standard document and this is part of what needed to be updated.

Dru: I'm not sure of the purpose either. What's mandatory? I can't say I agree with this as a mandatory list. I don't think this list is complete yet.

Mike: Maybe you can allow people to set up a cascade datasheet.

Neil: Work with the Army of Corps of Engineers to see what they would want to include on their datasheet.

Tim Smith: How did you all decide what attributes should be put on the datasheets?

Julie Prusky: It was decided by committees. This happened overtime. We are hoping a committee will be created sometime in the future in the development of the 2022 datums.

Dru: What about this idea? We should generate datasheets based on your desires (pre-selected default).

Julie: We disbanded the datasheet committee. We hope to have young, savvy individuals who are interested in creating a new look.

Julie Prusky (NGS) - Bluebook changes

Julie: The bluebook had not been updated since major policy changes were implemented. Additionally, the bluebook had duplicate information in multiple places. It would benefit from some revision. Three documents, "Preface and Content, Chapter 1, and Annex L were combined into one document, Introduction. Chapter 2 will be retired and superseded by a new chapter. Some of the major changes include:

Removed references to terrestrial observations –

Removed reference to station order-type and project order-class

- Removed instrument code for any and all "Unknown" instruments from Annex F
- Removed GNSS Antenna and receiver list
- Removed obsolete data entries such as
 - o cable length
 - o , L1 phase center antenna height
- weather and temperature information
 - o Removed obsolete and superseded records: *28, 29, 71, 81-85*
- Added Geoid12B code
- Allow for negative antenna heights
- Allow special characters in the station designation

Sent out for review to a half dozen coworkers→ one review from (Maralyn Vorhauer)

Questions:

Joe: How much federal bluebooking do we have?

Julie: The FAA and Army Corps of Engineers provide bluebooked data.

To the question of who approved the changes Julie responded It's my understanding that this has to be approved by my boss, then HQ which can then present the final bluebook to the FGCS.

[Julie showed the "NGS Bluebook" website]

- Chapter. 2 will be superseded by the new chapter.4
- Julie has documented all changes made to the bluebook

Break

Open Discussion

#1: Passive marks and NGS's role? (Question by Jim Garster)

Dru: Neil, Juliana and I have discussed how we will implement the 10 year plan. It's not quite detailed enough on how we will accomplish things on the plan. We need to figure out how we will tackle the new datums of 2022.

Question: Should NGS continue to take in passive control data to give information back out to the public? NGS bluebook→ became the FGCS bluebook.

[Looked at the "data submission policy" that was proposed in 2012]

We believe strongly that the right way to collect data are through CORS and the geoid:
- know where they are

- detect changes in a systematic way
- provide differential values

NGS: NGS does QA on the data, stores the data and then provides the data back to public. Do we need to continue to do so?

Army Corps of Engineers: We think that putting the information in there is very valuable. There are other methods that we use to track changes over time. Moving to active control is great because we can track changes over time.

Mark: Passive control is extremely important. We think that NGS should continue to maintain passive control marks. Passive/local control should be available to the public. Have you looked at the effect that it would have on bluebooking, height modernization, etc?

Dru: If you convince us to keep passive control, we will, and we will place the correct people in those positions.

**Example: Hurricane Katrina: we need to work together to share control points to make sure we are working together and saving enough money in the government.*

Neil Winn: National park service is getting into OPUS projects. We don't use bluebooking.

Dru: The ITRF changes have gotten small. Coordinates do change, but the datums change over time. **Why are we in the business of taking in your passive control data? We have provided you with the tools in order to store it yourself.**

Tim Smith: It is NGS responsibility to maintain a central repository. We know that NGS can handle this in a professional manner.

Question (Neil Winn): Could CORS turn into a real time system instead of removing a passive system?

***revisit this decision to make sure we are on track for 2022.**

-precise point positioning

Neil: time-varying datum. We don't need real-time data to fulfill NGS's mission. There will still be an evolution in this area moving forward. **How do you address that we haven't accounted for unobserved marks?**

Mike Londe: This depends on the usage needed. I see passive as important now and into the future.

#2: Conversion tools: horizontal and vertical datums (Question by Jim Garster)

Dru: Last year I developed GeoCon. We have a variety of programs here at NGS.

Jim: How do I know if I'm looking at valid conversion methods?

Joe: NADCON was the official transformation that agencies enjoyed.

Dru: We need to define an official way for the FRN (Federal Register Notice)

#3: Datasheets

Joe: One of the objectives of the NGS ten-year plan is to reinvent bluebooking. We have moved information from Sybase to Oracle. Are people using our shapefiles?

Dru: We should think of ways on how to make datasheets more user-friendly.

[Dru discussed PowerPoint “thought experiment concerning “plate fixed” coordinates: How and why?]

Dru wants to know from users: Do you really want your old survey longitude to match a new survey longitude in an Earthquake area? Do you really want to ignore the fact that the point isn't rotating?

General Questions:

Jim: Did CORS go through bluebooking procedures to go through the NSRS?

Neil: No.

Dru: Bluebooking is a way to put campaign data into the NSRS.

Juliana Blackwell - Plans for April 13-14th 2015 Geospatial Summit (including another FGCS meeting) with NSPS and closing remarks and closing remarks

Juliana update on Geospatial summit & outreach activities (data modernization)

- Brief FGDC members (mid-December briefing)
 - National Geospatial Advisory members special briefing (webinar for NGAC and other FGDC members- Jan. 16th 2015)
 - Looking at using outreach group on monthly topics (constituent resource committee)→ webinars related to specific information regarding NGS programs
 - Geospatial summit is free! (if you plan on attending the MAPPS portion there is a fee).
- Here is the link: <http://www.geodesy.noaa.gov/2015GeospatialSummit/>

Juliana Blackwell (NGS)- Thank you for your participation today! We appreciate your input and feedback. In some cases the things that were raised were to generate strong opinions on federal needs for geodetic control. As far as the passive control topic, we need some strong justification on the next steps on the needs and uses of passive control in the future. I gathered that NGS should share geodetic transformation information with the FGCS. Lastly with datasheets, we have to put effort into planning and framing. There will be small groups to develop a structure focused on what data sheets should look like. It's important to count on having work groups outside of the FGDC so that there is commitment to moving ahead with these topics. I did receive a note from Larry Hothem that will be shared with the meeting notes. **Our next meeting will be April 14 from 1-5pm Eastern time at the Hilton hotel in Crystal City, VA.** Please send any ideas for the next meeting to the secretariat.