OPUS Projects

National Geodetic Survey

OPUS – Projects Training

Dates: October 28 – 29, 2014 (two days)

Times: 8:00 AM Check In, Class time - 8:30 AM - 4:00 PM each day.

Location: NOAA Disaster Response Center, 7344 Zeigler Blvd., Mobile, AL 36608.

Link for information on the NOAA DRC

Workshop Cost: Free

Registration: The class size will be limited and attendance is on a first come first serve basis. To register for the class, please connect to the "Upcoming Classes" webpage on the NGS website or use the following link:

NGS Upcoming Classes Webpage

*** Note:** A second Mobile class might be added for the same week, please see website for details.

*** You must attend both days of training to receive credit.**

For several years now the National Geodetic Survey has provided users survey grade single point GPS positions through the use of the Online Positioning User Service or OPUS. OPUS-Projects is an extension of that online service to provide the user with the knowledge and capability to complete an entire GPS campaign or project on line from downloading the data to least squares adjustment. Access to OPUS-Projects is restricted to individuals who have successfully completed training and this course will provide the attendee with that training. This is a hands-on seminar and for this training you will need:

1. **A computer with wireless internet access capability (internet access will be provided).**
2. **Should be able to access your email from the training location. For the best class experience, it is advised that access to your email should be through your computer and not on a smart phone.**

   *** Note: The email address you provide in registering for this class is important because that address is what will be registered in the NGS database for your future use of OPUS Projects.**
3. **Pre-established project and project data (training data & individual projects will be provided, but you may also bring your own data if you like).**

What is OPUS Projects?

OPUS-Projects is a web-based utility that provides access to the National Geodetic Survey's (NGS) precise GPS positioning software for processing and adjusting survey projects spanning multiple observing sessions. It provides geodetic network solutions utilizing baseline processing of project sessions comprised of simultaneous GPS observations followed by a least squares adjustment of all project sessions. OPUS-Projects begins by creating a network project on the OPUS-Projects home page. Next, data is uploaded through the standard OPUS web page with the project Key Word generated at project creation. Project managers receive copies of the OPUS reports and can monitor project performance and progress via maps and tabular formats as the project is taking place. Once a project's data has been uploaded, session processing provides options for designing baseline connections and mark constraints. The position solutions from each session may be viewed and evaluated graphically prior to the final network adjustment.

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Materials: A memory stick with all needed files will be provided by the instructor for hand-outs, glossary, notes about hardware and browsers, and a training package of GPS data files, mark descriptions, and photos.

Day 1: Introduction

- What's in this training? What's not? What's the bottom line?
- A project has been created for you.
- The training package. What's in the ZIP file? What is the training data set?
- A brief overview of OPUS-Projects.
    - What is OPUS-Projects? What does that mean operationally?
    - Steps 1 – 4 represented graphically.
    - Do we really need another OPUS flavor?
- A little OPUS-Projects history.
- What does being a BETA version mean?

Step 1: Creating a Project

You'll need your email, the project title, type, approximate location, starting date, & size.

- Navigating to the OPUS-Projects gateway.
- The project creation confirmation.
- Setting the preferences
    - Navigating to the preferences form.
    - Changing the project title, ID or keywords.
    - Setting the solution quality thresholds.
    - Setting the data processing defaults.
    - Changing the session definition.
    - Changing the mark co-location definition.

Step 2: Uploading Data

You'll need any valid email address, a data file, the antenna type, height, & project ID.

- Uploading a project data file to OPUS.
    - Entering a project ID in OPUS options.
    - The upload confirmation page, Is this a new or recovered mark?
    - The new mark description.
    - The recovered mark description.
- What a field member would see after OPUS processing.
    - The OPUS report.
    - The OPUS-Projects solution quality report.

Step 3: Session Processing

You'll need any valid email address, the project ID & session OR manager keyword.

- Navigating to a project's session summary page.
- Showing baselines on the map.
- The layout of a session summary page.
- The session processing set up form.
    - The session processing name & data span.
    - The mark and CORS controls.
        - Including or excluding marks.
        - Designating hub marks
        - Selecting the constraint type.
        - The coordinates used in the constraint.
    - Processing Preferences.
        - The output reference frame.
        - The output geoid model.
        - The tropo model and interval.
        - The elevation cutoff.
        - The constraint weights.
        - Default network designs.
    - Submitting to the processing queue.
- The processing report email.
- The session summary page after processing.

Step 4: Network Adjustment and Publishing

You'll need the project ID & manager keyword.

- Navigating to the project manager's page.
- Showing baselines on the map.
- The layout of the manager's page.
- Navigating to a session & mark summary pages.
- The layout of a mark summary page.
- The adjustment set up form.
    - The adjustment name.
    - Including session processing results in the adjustment.
    - The mark and CORS controls.
        - Selecting the constraint type.
        - The coordinates used in the constraint.
    - Processing Preferences.
        - The output reference frame.
        - The output geoid model.
        - The constraint weights.
    - Submitting to the processing queue.
- The adjustment report email.
- The manager's page after an adjustment.

Day 2: Carry-over from day 1, Group discussion, Individual practice & instruction. Wrap-up and closing remarks.