

OPUS Projects Manager Training

Step 4 : Network Adjustment

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I've advanced to the second slide and I'm reading it.

- Can you read this slide and hear me as I read it?
- Can you access the web?
- Is everyone comfortable?
- Does anyone have any questions before we begin?

Outline

- Introduction
- Step 1 : Creating a Project
- Step 2 : Uploading Data
- Step 3 : Session Processing
- **Step 4 : Network Adjustment**

A few words before beginning.

OPUS Projects is a web-based utility implying that access to the internet and use of a web browser are required. JavaScript must be enabled in your browser and pop-up blocking may have to be turned off. If you have difficulty configuring your browser, contact your instructor or the OPUS Projects team.

The OPUS Projects look and feel.

The overall layout and appearance of OPUS Projects will be very similar to that shown here regardless of the browser you use. For this reason, the browser window's frame is not shown in the figures.


What's in this training?

This presentation begins after all session processing has been completed and describes how to perform a network adjustment. The format is as a series of steps like a cookbook. Like most cookbooks, the justification for and discussion of variations in those steps will be minimal. The intent is to get you started quickly, then leave you free to explore OPUS Projects on your own.

OPUS Projects

National Geodetic Survey

NGS Home About NGS Data & Imagery Tools Surveys Science & Education Search



OPUS Projects gives users web-based access to simple management and processing tools for projects involving multiple sites and multiple occupations. The advantages of OPUS Projects are:

- Data uploading through OPUS.
- Customizable data processing via the PAGES software suite.
- Visualization and management aids.

Create a new project.

Create **RESTRICTED** to trained project managers. If you have completed OPUS Projects training, you are registered and may create a new project. All others, see the **Training Schedule**.

Configure, edit, and process individual network sessions.

Session **Project Identifier:**

Session Keyword:

Your Email:


Manage, edit, process, and publish the project.

Manage **Project Identifier:**

Manager Keyword:

[<- back](#)

The project ID and manager keyword are required to access the manager's page from the OPUS Projects gateway page:
<http://geodesy.noaa.gov/OPUS-Projects/>.




OPUS Projects

National Geodetic Survey

NGS Home
About NGS
Data & Imagery
Tools
Surveys
Science & Education

Search



Tools/OPUS Menu

- Upload
- About OPUS
- OPUS Projects
- Published Solutions

[<- back](#)

OPUS Projects gives users web-based access to simple management and processing tools for projects involving multiple sites

Scanning Project

Your project is being scanned and web page prepared.

This is a normal operation, but may take a few moments to several minutes depending upon the size of the project and the number of changes.

Website Owner: National Geodetic Survey / \$Revision: 51114 \$Created: 2010-12-13

Session **Project Identifier:**

Session Keyword:

Your Email:

Manage, edit, process, and publish the project.

Manage **Project Identifier:**

Manager Keyword:

The project is always scanned for changes when accessed so the information will be up-to-date.

Results From ALL SESSION SOLUTIONS

Controls

Preferences
Project List
Design
Serfil
Solutions
Show File
Send Email
Set up Adjustment
Review and Publish
Delete Project

LEGEND

MARKS: ● meet preferences ● do not meet preferences ⊗ are not included ⊗ have error

CORS: ● meet preferences ● do not meet preferences ⊗ are not included

Baselines: ———

Map Satellite Terrain

LEGEND

MARKS

● 2123
● 2126
● 2137
● 2139

MARKS

● 2123
● 2126
● 2137
● 2139

LEGEND

MARKS

● 2123
● 2126
● 2137
● 2139

POWERED BY Google

Map data ©2013 Google - Terms of Use

MARKS	Sessions & Solutions						MARKS
	2006-274 A	2006-275 A	2006-275 B	2006-276 A	2006-276 B	2006-277 A	
2123			●	●	●	●	2123
2126	●	●	●	●			2126
2137	●		●	●			2137
2139			●	●	●	●	2139

Results From ALL SESSION SOLUTIONS

LEGEND

MARKS: ● meet preferences ● do not meet preferences ⊗ are not included ⊗ have error

CORS: ⚠ meet preferences ⚠ do not meet preferences ⚠ are not included

Baselines: ——

LEGEND

MARKS

- 2123
- 2126
- 2137
- 2139

Controls

Preferences
Project List
Design
Serfil
Solutions
Show File
Send Email
Set up Adjustment
Review and Publish
Delete Project

Map Satellite Terrain

Map data ©2013 Google - Terms of Use

LEGEND

MARKS

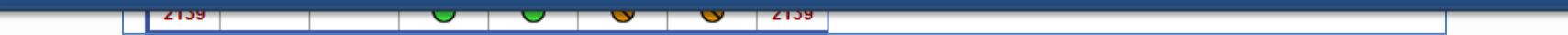
- ⚠ covg
- ⚠ dstr
- ⚠ hamm
- ⚠ msht
- ⚠ mssc
- ⚠ nola

Add MARKS

CORS

Add CORS

In a few moments, the manager's page appears. It looks different now that the data have been uploaded and session processing completed, so lets explore this page.



Results From ALL SESSION SOLUTIONS

LEGEND MARKS: ● meet preferences ○ do not meet preferences ⊗ are not included ⊗ have error
 CORs: ▲ meet preferences ▲ do not meet preferences ▲ are not included
 Baselines: ————

Controls: ? ← ↻

Preferences: Project List, Design, Serfil, Solutions, Show File, Send Email, Set up Adjustment, Review and Publish, Delete Project

Map: + Marks Marks&CORs - Map Satellite Terrain

LEGEND MARKS: ○ 2123 ○ 2126 ○ 2137 ⊗ 2139

Add MARKS

CORS: ▲ covg ▲ dstr ▲ hamm ▲ msht ▲ mssc ▲ nola

Add CORS

The page is built around a Google Map Services™ interactive map showing the locations of your project's marks and CORS.

2126	○	○	○	○	2126
2137	○	○	○	○	2137
2139	○	○	⊗	⊗	2139

Results From ALL SESSION SOLUTIONS

Controls

MARKS: ● meet preferences ● do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: —————

Map Satellite Terrain

Map showing a network of baselines and control points in the Louisiana region. A mouse cursor is over the 'Marks' tab. The map includes labels for locations like Kerwood, Amite City, and Harahan. A scale bar shows 10 miles and 10 kilometers.

MARKS

- 2123
- 2126
- 2137
- 2139

CORS

- covg
- dstr
- hamm
- msht
- mssc
- nola

Here again, you can use the controls on the map to zoom in (+) or out (-) ...

2126	○	○	○	○	2126
2137	○	○	○	○	2137
2139	○	○	⊗	⊗	2139

Results From ALL SESSION SOLUTIONS

LEGEND
 MARKS: ● meet preferences ○ do not meet preferences ⊗ are not included ⊗ have error
 CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included
 Baselines: —

Controls: ? ← ↻

Preferences: Project List, Design, Serfil, Solutions, Show File, Send Email, Set up Adjustment, Review and Publish, Delete Project

Map: + Marks Marks&CORS - Map Satellite Terrain

Map Labels: Chitto, Franklinton, Bogalusa, Bogue Chitto State Park, Amite City, Loranger, Bush, Bogue Chitto National Wildlife Refuge, Harmon, Fairview, Cowden

Scale: 5 km

Map data ©2013 Google - Terms of Use

LEGEND
 MARKS
 ○ 2123
 ○ 2126
 ○ 2137
 ⊗ 2139

Add MARKS

CORS
 ▲ covg
 ▲ dstr
 ▲ hamm
 ▲ msht
 ▲ mssc
 ▲ nola

Add CORS

Sessions & Solutions

... center and zoom to show the project's marks in this session ...

2123			○	○	○	○	2123
2126	○	○	○	○			2126
2137	○		○	○			2137
2139			○	○	⊗	⊗	2139

Results From ALL SESSION SOLUTIONS

Controls

MARKS: ● meet preferences ● do not meet preferences ● are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: —————

Map Satellite Terrain

Map data ©2013 Google - Terms of Use

LEGEND MARKS

- 2123
- 2126
- 2137
- 2139

Add MARKS

CORS

- ▲ covg
- ▲ dstr
- ▲ hamm
- ▲ msht
- ▲ mssc
- ▲ nola

Add CORS

... or center and zoom to show the marks and included CORS.

2123			○	○	○	○	2123
2126	○	○	○	○			2126
2137	○		○	○			2137
2139			○	○	⊗	⊗	2139

Results From ALL SESSION SOLUTIONS

Controls
 ? ← ↻

Preferences
 Project List
 Design
 Serfil
 Solutions
 Show File
 Send Email
 Set up Adjustment
 Review and Publish
 Delete Project

LEGEND
 MARKS: ● meet preferences ● do not meet preferences ⊗ are not included ⊗ have error
 CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included
 Baselines: ————

Map Satellite **Terrain**

LEGEND
 MARKS
 ○ 2123
 ○ 2126
 ○ 2137
 ⊗ 2139

LEGEND
 Add MARKS
 CORS
 ▲ covg
 ▲ dstr
 ▲ hamm
 ▲ msht
 ▲ mssc
 ▲ nola
 Add CORS

Map data ©2013 Google - Terms of Use

Sessions & Solutions

You can set the map's background to look like a digital elevation terrain rendering with towns and roads indicated ...

2137	○	○	○	○	○	○	2137
2139	○	○	○	⊗	⊗	⊗	2139

Results From ALL SESSION SOLUTIONS

Controls

Preferences
Project List
Design
Serfil
Solutions
Show File
Send Email
Set up Adjustment
Review and Publish
Delete Project

LEGEND

MARKS: ● meet preferences ○ do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: ————

Map Satellite Terrain

20 mi
20 km

Imagery ©2013 TerraMetrics - Terms of Use

LEGEND

MARKS

- 2123
- 2126
- 2137
- 2139

Add MARKS

CORS

- covg
- dstr
- hamm
- msht
- mssc
- nola

Add CORS

... satellite imagery (if available) ...

2123			○	○	○	○	2123
2126	○	○	○	○			2126
2137	○		○	○			2137
2139			○	○	⊗	⊗	2139

Results From ALL SESSION SOLUTIONS

LEGEND

MARKS: ● meet preferences ● do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: —————

LEGEND

MARKS

- 2123
- 2126
- 2137
- 2139

MARKS

- ▲ covg
- ▲ dstr
- ▲ hamm
- ▲ msht
- ▲ mssc
- ▲ nola

Controls: ? ← ↻

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

Map Satellite Terrain

Map

Show street map

Map data ©2013 Google - Terms of Use

... or a simple map.

2123								2123
2126	●	●	●	●	●	●	●	2126
2137	●		●	●	●	●	●	2137
2139			●	●	⊗	⊗	⊗	2139

Results From **ALL SESSION SOLUTIONS**

LEGEND
MARKS: ● meet preferences ○ do not meet preferences ⊗ are not included ⊗ have error
CORS: ▲ meet preferences ○ do not meet preferences ⊗ are not included

Baselines: [Blue line icon]

Map Satellite Terrain

Map data ©2013 Google - Terms of Use

POWERED BY Google

20 mi / 20 km

2123
2126
2137
2139

Add MARKS

CORS
 ▲ covg
 ▲ dstr
 ▲ hamm
 ▲ msht
 ▲ mssc
 ▲ nola

Add CORS

You can “drag” the map if you’d like examine a nearby area.

2123			○	○	○	○	2123
2126	○	○	○	○			2126
2137	○		○	○			2137
2139			○	○	⊗	⊗	2139

Results From ALL SESSION SOLUTIONS

LEGEND MARKS: ● meet preferences ○ do not meet preferences ⊗ are not included ⊗ have error
 CORs: ● meet preferences ○ do not meet preferences ⊗ are not included
 Baselines: ————

Map Satellite Terrain

2137

Map data ©2013 Google - Terms of Use

LEGEND MARKS
 ● 2123
 ● 2126
 ● 2137
 ○ 2139

LEGEND CORs
 ● covg
 ● dstr
 ● hamh
 ● msht
 ● mssc
 ● nola

Holding the cursor over a map icon causes its mark ID to appear.

Sessions & Solutions

2123			●	●	●	●	2123
2126	●	●	●	●			2126
2137	●		●	●			2137
2139			●	●	○	○	2139

Results From ALL SESSION SOLUTIONS

Controls

LEGEND MARKS: ● meet preferences ○ do not meet preferences ⊗ are not included ⊗ have error
 CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included
 Baselines: —

Map Satellite Terrain

2137

STATUS	ANTENNA	HEIGHT	DATA FILE	UPLOADED	OBSERVER
●	TRM55971.00 NONE	2.000 m	2137274u.06o	2011-06-13T15:12 UTC	mark.schenewerk
●	TRM55971.00 NONE	1.500 m	2137275u.06o	2011-06-13T15:48 UTC	mark.schenewerk
●	TRM55971.00 NONE	1.500 m	2137276g.06o	2011-06-13T15:56 UTC	mark.schenewerk

Map data ©2013 Google - Terms of Use

LEGEND MARKS: ● 2123 ● 2126 ● 2137 ○ 2139

Add MARKS

CORS: ▲ covg ▲ dstr ▲ hamm ▲ msht ▲ mssc ▲ nola

Add CORS

Sessions & Solutions

Clicking on a map icon will cause information about the data files for that mark to be shown in a “bubble.”

2137	●	●	●	○	○	2137
2139		●	●	○	○	2139

Results From ALL SESSION SOLUTIONS

Controls: ? ← ↻

LEGEND MARKS: ○ meet preferences ☒ do not meet preferences ⊗ are not included ⊗ have error
 CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: + Marks Marks&CORS -

Map Satellite Terrain

2137

STATUS	ANTENNA	HEIGHT	DATA FILE	UPLOADED	OBSERVER
○	TRM55971.00 NONE	2.000 m	2137274u.06o	2011-06-13T15:12 UTC	mark.schenewerk
○	TRM55971.00 NONE	1.500 m	2137275u.06o	2011-06-13T15:48 UTC	mark.schenewerk
○	TRM55971.00 NONE	1.500 m	2137276g.06o	2011-06-13T15:56 UTC	mark.schenewerk

Map data ©2013 Google - Terms of Use

LEGEND MARKS: ○ 2123 ○ 2126 ○ 2137 ○ 2139

Add MARKS

CORS: ▲ covg ▲ dstr ▲ hamm ▲ msht ▲ mssc ▲ nola

Add CORS

Sessions & Solutions

In this bubble, the mark's ID is a convenience link to navigate to the summary page for that mark ...

2137	○	○	○	○	○	2137
2139	○	○	○	☒	☒	2139

Results From ALL SESSION SOLUTIONS

Controls: ? ← ↻

LEGEND MARKS: ○ meet preferences ☉ do not meet preferences ⊗ are not included ⊗ have error
 CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: + Marks Marks&CORS -

Map Satellite Terrain

2137

STATUS	ANTENNA	HEIGHT	DATA FILE	UPLOADED	OBSERVER
○	TRM55971.00 NONE	2.000 m	2137274u.06o	2011-06-13T15:12 UTC	mark.schenewerk
○	TRM55971.00 NONE	1.500 m	2137275u.06o	2011-06-13T15:48 UTC	mark.schenewerk
○	TRM55971.00 NONE	1.500 m	2137276g.06o	2011-06-13T15:56 UTC	mark.schenewerk

Map data ©2013 Google - Terms of Use

LEGEND MARKS: ○ 2123 ○ 2126 ○ 2137 ○ 2139

Add MARKS

CORS: ▲ covg ▲ dstr ▲ hamm ▲ msht ▲ mssc ▲ nola

Add CORS

Sessions & Solutions

... and the observers names are convenience links to send an email.

2137	○	○	○	○	○	2137
2139	○	○	○	☉	☉	2139

The brightly colored lines on the map represent baselines used in the processing. Note that the processing solutions are associated with line colors in the table below the map.

Sessions

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

Map data ©2013 Google - Terms of Use

Add MARKS

CORS

- covg
- dstr
- hamm
- msht
- mssc
- nola

Add CORS

Sessions & Solutions							
MARKS	2006-274	2006-275	2006-275	2006-276	2006-276	2006-277	MARKS
	A	A	B	A	B	A	
2123							2123
2126							2126
2137							2137
2139							2139

In the case of session solutions, moving the cursor over the label in the table causes only those baselines to be shown.

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

Map data ©2013 Google - Terms of Use

2139

Add MARKS

CORS

- covg
- dstr
- hamm
- msht
- mssc
- nola

Add CORS

Sessions & Solutions							
MARKS	2006-274	2006-275	2006-275	2006-276	2006-276	2006-277	MARKS
	A	A	B	A	B	A	
2123			●	●	●	●	2123
2126	●	●	●	●			2126
2137	●		●	●			2137
2139			●	●	●	●	2139

Results From ALL SESSION SOLUTIONS

Controls

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

LEGEND

MARKS: ● meet preferences ● do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: —

Map Satellite Terrain

LEGEND

MARKS

- 2123
- 2126
- 2137
- 2139

MARKS

- ▲ covg
- ▲ dstr
- ▲ hamm
- ▲ msht
- ▲ mssc
- ▲ nola

Add MARKS

Add CORS

MARKS	Sessions & Solutions						MARKS
	2006-274	2006-275	2006-275	2006-276	2006-276	2006-277	
	A	A	B	A	B	A	
2123			●	●	●	●	2123
2126	●	●	●	●			2126
2137	●		●	●			2137
2139			●	●	⊗	⊗	2139

Results From **ALL SESSION SOLUTIONS**

Controls

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

LEGEND

MARKS: ○ meet preferences ⊗ do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: ———

Map Satellite Terrain

Map data ©2013 Google - Terms of Use

LEGEND

MARKS

- 2123
- 2126
- 2137
- ⊗ 2139

MARKS

Add MARKS

CORS

- ▲ covg
- ▲ dstr
- ▲ hamm
- ▲ msht
- ▲ mssc
- ▲ nola

Add CORS

Sessions & Solutions

2123			○	○	○	○	2123
2126	○	○	○	○			2126
2137	○		○	○			2137
2139			○	○	⊗	⊗	2139

To the right of the map is a list of the marks in the project.

Note that mark 2139 has not met all the solution quality threshold preferences in session 2006-277-A.

Project List

- Design
- Serfil
- Solutions**
- Show File
- Send Email
- Set up Adjustment
- Review and Publish
- Delete Project

Map data ©2013 Google - Terms of Use

2139

Add MARKS

CORS

- covg
- dstr
- hamm
- msht
- mssc
- nola

Add CORS

MARKS	Sessions & Solutions						MARKS
	2006-274 A	2006-275 A	2006-275 B	2006-276 A	2006-276 B	2006-277 A	
2123			○	○	○	●	2123
2126	○	○	○	○			2126
2137	○		○	○			2137
2139			●	●	○	○	2139

Results From ALL SESSION SOLUTIONS

Controls
 ? ← ↻

LEGEND
 MARKS: ● meet preferences ● do not meet preferences ⊗ are not included ⊗ have error
 CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included
 Baselines: ————

Map Satellite Terrain

LEGEND
 MARKS
 ● 2123
 ● 2126
 ● 2137
 ● 2139

LEGEND
 Add MARKS
 CORS
 ▲ covg
 ▲ dstr
 ▲ hamm
 ▲ msht
 ▲ mssc
 ▲ nola
 Add CORS

Map data ©2013 Google - Terms of Use

Although difficult to show here, moving the cursor over a mark or CORS ID causes the corresponding map icon to “lighten.”

2137	●		●	●		2137
2139			●	●	●	2139

Results From ALL SESSION SOLUTIONS

LEGEND MARKS: ● meet preferences ○ do not meet preferences ⊗ are not included ⊗ have error
 CORs: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: —

Map Satellite Terrain

STATUS	ANTENNA	HEIGHT	DATA FILE	UPLOADED	OBSERVER
●	TRM55971.00 NONE	2.000 m	2123275u.06o	2011-06-13T16:03 UTC	mark.schenewerk
●	TRM55971.00 NONE	2.000 m	2123276g.06o	2011-06-13T16:08 UTC	mark.schenewerk
●	TRM55971.00 NONE	2.000 m	2123276s.06o	2011-06-13T16:07 UTC	mark.schenewerk
●	TRM55971.00 NONE	2.000 m	2123277g.06o	2011-06-13T16:07 UTC	mark.schenewerk

2123

LEGEND MARKS: ● 2123 ● 2126 ● 2137 ○ 2139

Add MARKS

CORS

- ▲ covg
- ▲ dstr
- ▲ hamm
- ▲ msht
- ▲ mssc
- ▲ nola

Add CORS

Clicking on a list entry also causes that mark's information bubble to appear on the map.

2137	●	●	●	○	○	2137
2139		●	●	○	○	2139

Results From **ALL SESSION SOLUTIONS**

Controls

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

LEGEND

MARKS: ○ meet preferences ⊗ do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: ———

Map Satellite Terrain

Show street map

LEGEND

MARKS

○ 2123

○ 2126

○ 2137

⊗ 2139

Add MARKS

CORS

▲ covg

▲ dstr

▲ hamm

▲ msht

▲ mssc

▲ nola

Add CORS

The "Add MARKS" button acts as a link to the OPUS upload page.

Sessions & Solutions							
2123			○	○	○	○	2123
2126	○	○	○	○			2126
2137	○		○	○			2137
2139			○	○	⊗	⊗	2139

Results From **ALL SESSION SOLUTIONS**

Controls
 ? ← ↻

Preferences
 Project List
 Design
 Serfil
 Solutions
 Show File
 Send Email
 Set up Adjustment
 Review and Publish
 Delete Project

LEGEND
 MARKS: ○ meet preferences ☒ do not meet preferences ⊗ are not included ⊗ have error
 CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included
 Baselines: ————

Map | **Satellite** | **Terrain**
 Show street map

LEGEND
 MARKS
 ○ 2123
 ○ 2126
 ○ 2137
 ⊗ 2139

Add MARKS
CORS
 ▲ covg
 ▲ dst
 ▲ hamm
 ▲ msht
 ▲ mssc
 ▲ nola
Add CORS

Map data ©2013 Google - Terms of Use

Below that is a list of the CORS included in this project. Note that DSTR and NOLA were not included in any session processing.

Session ID	Meet Preferences	Do Not Meet Preferences	Are Not Included	Have Error	Session ID
2137	○	○	○	○	2137
2139	○	○	⊗	⊗	2139

Results From **ALL SESSION SOLUTIONS**

Controls

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

LEGEND

MARKS: ○ meet preferences ⊗ do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: ———

Map Satellite Terrain

Show street map

LEGEND

MARKS

○ 2123

○ 2126

○ 2137

⊗ 2139

Add MARKS

CORS

▲ covg

▲ dstr

▲ hamm

▲ msht

▲ mssc

▲ nola

Add CORS

Map data ©2013 Google - Terms of Use

Sessions & Solutions						
2137	○	○	○	○	○	2137
2139	○	○	○	⊗	⊗	2139

At the bottom-right is the "Add CORS" button. Clicking that opens a window with controls to add other CORS to the project.

Results From ALL SESSION SOLUTIONS

Controls	LEGEND	MARKS:	● meet preferences	● do not meet preferences	⊗ are not included	⊗ have error	LEGEND	MARKS
		CORS:	● meet preferences	● do not meet preferences	⊗ are not included		●	2123

Let's take a moment to explore this new window.

Design
2139

?
Add Cors
X

Enter the 4-char site IDs of, or click its marker on the map, to make the corresponding CORS available to your project.

LEGEND **CORS:**

- existed > 7 years (recommended)
- existed < 7 years (use freely)
- existed < 5 years (use with caution)
- existed < 3 years (avoid if possible)

To Be Added:

MARKS 200

Add MARKS
CORS
 covg
 dstr
 hamm
 msht
 mssc
 nola

2123			●	●	●	●	2123
2126	●	●	●	●			2126
2137	●		●	●			2137
2139			●	●	●	●	2139

Add CORS

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Results From ALL SESSION SOLUTIONS

LEGEND MARKS: ● meet preferences ● do not meet preferences ● are not included ✗ have error

CORS: ● meet preferences ● do not meet preferences ● are not included

LEGEND MARKS ● 2123

The map in this window is similar to the map on the primary page: you can zoom in and out, drag the map to other areas ...

Solution ?
Add Cors X

Enter the 4-char site IDs of, or click its marker on the map, to make the corresponding CORS available to your project.

LEGEND CORS:

● existed > 7 years (recommended)
● existed < 5 years (use with caution)

● existed < 7 years (use freely)
● existed < 3 years (avoid if possible)

To Be Added:

Add MARKS

CORS

- covg
- dstr
- hamm
- msht
- mssc
- nola

Add CORS

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Website Owner: National Geodetic Survey / \$Revision: 54685 \$Created: 2011-04-26

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MARKS	200						
2123			●	●	●	●	2123
2126	●	●	●	●			2126
2137	●		●	●			2137
2139			●	●	●	●	2139

Results From ALL SESSION SOLUTIONS

Controls	MARKS:	● meet preferences	● do not meet preferences	⊗ are not included	⊗ have error	LEGEND	MARKS
	CORS:	● meet preferences	● do not meet preferences	⊗ are not included			● 2123

... you can move the cursor over a map icon to see the mark's ID or click on it for more information.

Add Cors

Enter the 4-char site IDs of, or click its marker on the map, to make the corresponding CORS available to your project.

LEGEND	● existed > 7 years (recommended)	● existed < 7 years (use freely)
	● existed < 5 years (use with caution)	● existed < 3 years (avoid if possible)

To Be Added:

MOB1
 civil name: 49863S001; Mobile Point 1; Mobile, Alabama USA
 antenna: ASH700829.3 SNOW
 ARP height: 0.0000 m
 has existed: 17.0584 years

Add to List

Map data ©2013 Google - Terms of Use

Website Owner: National Geodetic Survey / \$Revision: 66817 \$Created: 2013-04-11

MARKS							
2123			●	●	●	●	2123
2126	●	●	●	●			2126
2137	●		●	●			2137
2139			●	●	●	●	2139

Results From ALL SESSION SOLUTIONS

Controls	MARKS:	● meet preferences	● do not meet preferences	⊗ are not included	⊗ have error	LEGEND	MARKS
	CORS:	● meet preferences	● do not meet preferences	⊗ are not included			● 2123

To add a CORS to all sessions in the project, click the “Add to List” button in its information bubble or type its four character ID into the “To Be Added” box on the left.

Enter the 4-char site IDs of, or click its marker on the map, to make the corresponding CORS available to your project.

LEGEND CORS:

- existed > 7 years (recommended)
- existed < 7 years (use freely)
- existed < 5 years (use with caution)
- existed < 3 years (avoid if possible)

To Be Added:

Website Owner: National Geodetic Survey / \$Revision: 66817 \$Created: 2013-04-11

MARKS	2123	2126	2137	2139	2123
	●	●	●	●	2123
	●	●	●	●	2126
	●	●	●	●	2137
			●	●	2139

Results From **ALL SESSION SOLUTIONS**

Controls LEGEND MARKS: ● meet preferences ● do not meet preferences ● are not included ● have error
CORs: ● meet preferences ● do not meet preferences ● are not included
Baselines: —

LEGEND MARKS
● 2123
● 2126
● 2137
● 2139

"my project @ 2006-10-01" CORs

? **Add Cors** **X**

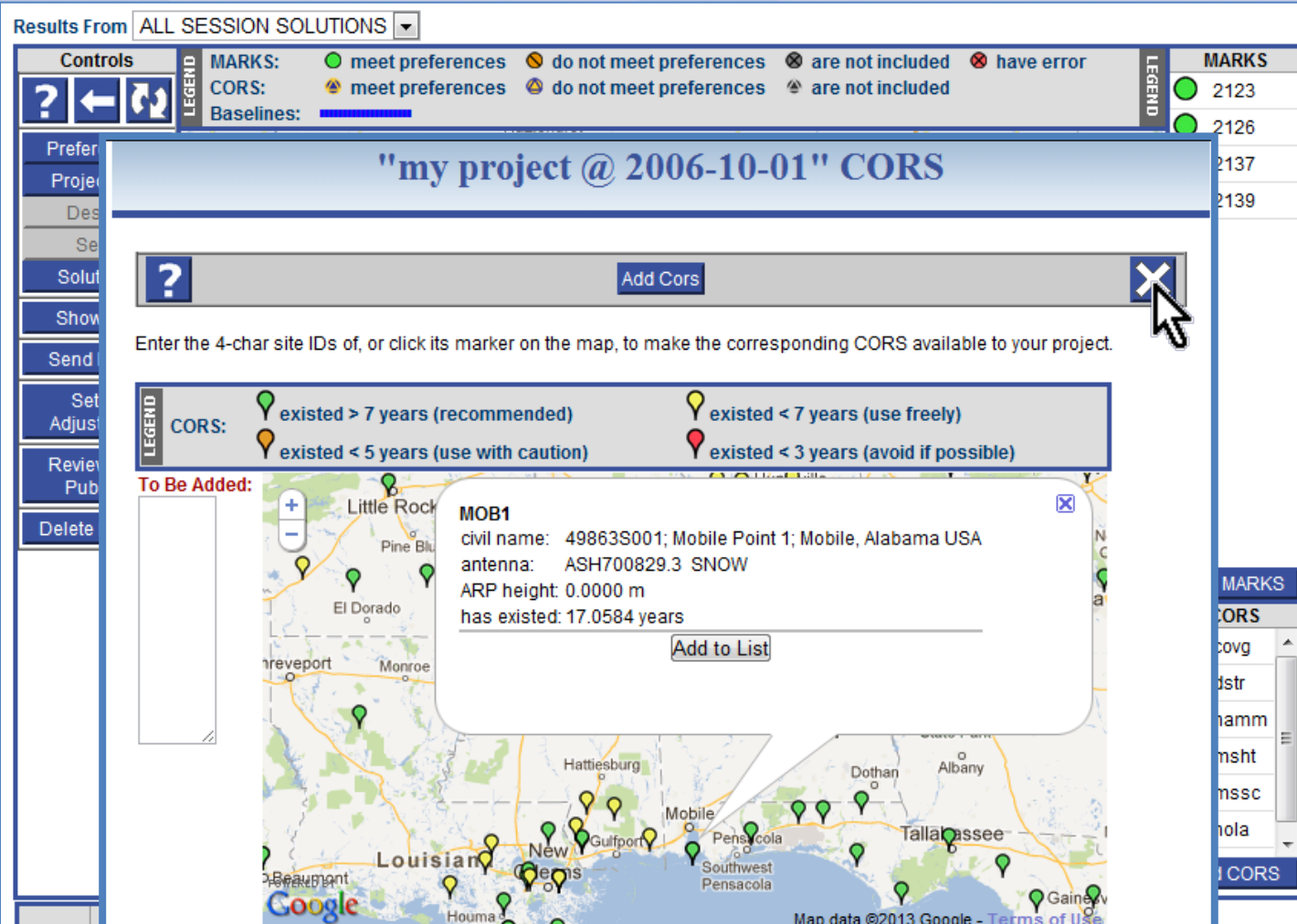
Enter the 4-char site IDs of, or click its marker on the map, to make the corresponding CORs available to your project.

LEGEND CORs: ● existed > 7 years (recommended) ● existed < 7 years (use freely)
● existed < 5 years (use with caution) ● existed < 3 years (avoid if possible)

To Be Added:

MOB1
civil name: 49863S001; Mobile Point 1; Mobile, Alabama USA
antenna: ASH700829.3 SNOW
ARP height: 0.0000 m
has existed: 17.0584 years

Add to List



When the list of CORs to be added is complete, click the “Add CORs” button on the control bar near the top of the window to begin the process. In this example, we’ll just close the window.

Results From **ALL SESSION SOLUTIONS**

Controls

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

LEGEND

MARKS: ○ meet preferences ⊗ do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: ————

Map Satellite Terrain

LEGEND

MARKS

○ 2123

○ 2126

○ 2137

⊗ 2139

Add MARKS

CORS

▲ covg

▲ dstr

▲ hamm

▲ msht

▲ mssc

▲ nola

Add CORS

The pull-down menu at the top of the page identifies the type of results shown on this page: ALL SESSION SOLUTIONS in this case.

2137	○	○	○	○	○	2137
2139	○	○	⊗	⊗	⊗	2139

Results From: ALL SESSION SOLUTIONS

Controls: ALL SESSION SOLUTIONS

2006-274-A
2006-275-A
2006-275-B
2006-276-A
2006-276-B
2006-277-A
ALL OPUS SOLUTIONS

Preferences: do not meet preferences, are not included, have error

Legend: MARKS (2123, 2126, 2137, 2139)

CORS: covg, distr, hamm, msht, mssc, nola

You can use this menu to display individual session results, the OPUS results and, eventually, individual network adjustments.

2137	●	●	●	2137
2139		●	●	●

Results From ALL SESSION SOLUTIONS

Controls

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

LEGEND

MARKS: ○ meet preferences ☒ do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: ————

Map Satellite Terrain

Show street map

Map data ©2013 Google - Terms of Use

LEGEND

MARKS

○ 2123

○ 2126

○ 2137

⊗ 2139

Add MARKS

CORS

▲ covg

▲ dstr

▲ hamm

▲ msht

▲ mssc

▲ nola

Add CORS

Sessions & Solutions

2123			○	○	○	○	2123
2126	○	○	○	○			2126
2137	○		○	○			2137
2139			○	○	⊗	⊗	2139

The controls for this page are to the left of the map.

Results From ALL SESSION SOLUTIONS

Controls

Preferences
Project List
Design
Serfil
Solutions
Show File
Send Email
Set up Adjustment
Review and Publish
Delete Project

LEGEND

MARKS: ○ meet preferences ⊗ do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: ————

Map Satellite Terrain

Map data ©2013 Google - Terms of Use

LEGEND

MARKS

- 2123
- 2126
- 2137
- ⊗ 2139

Add MARKS

CORS

- ▲ covg
- ▲ dst
- ▲ hamm
- ▲ msht
- ▲ mssc
- ▲ nola

Add CORS

Sessions & Solutions

2123			○	○	○	○	2123
2126	○	○	○	○			2126
2137	○		○	○			2137
2139			○	○	⊗	⊗	2139

At the top are help, back and refresh controls.

Results From ALL SESSION SOLUTIONS

Controls

MARKS: meet p
CORS: meet p
Baselines:

LEGEND

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

Project Title, ID and Keywords

A project title, ID and keywords are required. The project title can be almost any string, but brevity is recommended. On the other hand, the ID and keywords have restrictions:

- The project ID must be unique to your project.
- The ID and keywords are not case sensitive.
- The ID and keywords can not contain more than eight characters.
- The ID and keywords can only contain letters, numbers, the dash and underscore characters.

Project Title:

Project ID: Confirm:

Manager Keyword: Confirm:

Session Keyword: Confirm:

CC Manager Emails

Copies of emails created by and sent to you from the project can be sent to others automatically.

CC Manager Emails To:

Add To CC List

Remove From CC List

Data & Solution Quality Thresholds

Thresholds are used to highlight solution results that do not meet the quality preferences for your project.

Precise Ephemeris:

Minimum ARP Height (m):

Maximum ARP Height (m):

Minimum Observations Used (%):

Minimum Ambiguities Fixed (%):

Maximum Solution RMS (m):

Maximum Height Uncertainty (m):

Maximum Latitude Uncertainty (m):

Maximum Longitude Uncertainty (m):

Data Processing Defaults

These are the defaults used in data processing. They can still be changed on a case-by-case basis during processing setup.

Output Ref Frame:

Output Geoid Model:

GNSS:

Tropo Model:

Tropo Interval (s):

Elevation Cutoff (deg):

Constraint Weights: LOOSE NORMAL TIGHT

Network Design: USER CORS MST TRI

The preference controls were explored in Step 1 : Creating a Project.

access these preferences.

adjustment results to access these preferences.

Minimum Data Duration (s):

Minimum Session Overlap Multiplier:

Group By: Mark ID Position

Maximum Position Difference (m):

Results From ALL SESSION SOLUTIONS

But notice that the "Session Definition" and Mark Co-location Definition cannot be altered now because some project processing has been completed. The text in those sections explains this circumstance.

Send Email

Set up Adjustment

Review and Publish

Delete Project

Map showing Baton Rouge area with landmarks like Zachary, South Baton Rouge, Highlands/Perkins, Plaquemine, Lake Fausse Pointe State Park, and Morgan City. Scale bar shows 20 miles and 20 kilometers.

Manager Keyword: Confirm:

Session Keyword: Confirm:

CC Manager Emails

Copies of emails created by and sent to you from the project can be sent to others automatically.

CC Manager Emails To:

Add To CC List

Remove From CC List

Data & Solution Quality Thresholds

Thresholds are used to highlight solution results that do not meet the quality preferences for your project.

Precise Ephemeris:

Minimum ARP Height (m):

Maximum ARP Height (m):

Minimum Observations Used (%):

Minimum Ambiguities Fixed (%):

Maximum Solution RMS (m):

Maximum Height Uncertainty (m):

Maximum Latitude Uncertainty (m):

Maximum Longitude Uncertainty (m):

Data Processing Defaults

These are the defaults used in data processing. They can still be changed on a case-by-case basis during processing setup.

Output Ref Frame:

Output Geoid Model:

GNSS:

Tropo Model:

Tropo Interval (s):

Elevation Cutoff (deg):

Constraint Weights: LOOSE NORMAL TIGHT

Network Design: USER CORS MST TRI

Session Definition

A data file is assigned to a session based upon its overlaps in time with other files. These parameters control how much overlap is required for a file to be assigned to a session.

Changing these values after any processing has been completed may invalidate those processing results. You must delete all existing session processing and network adjustment results to access these preferences.

Minimum Data Duration (s):

Minimum Session Overlap Multiplier:

Mark Co-location Definition

Data files can be associated with marks by using the first four characters of the file name or how closely the positions computed in the OPUS solutions agree.

Changing these values after any processing has been completed may invalidate those processing results. You must delete all existing session processing and network adjustment results to access these preferences.

Group By: Mark ID Position

Maximum Position Difference (m):

MARKS	Sessions & Solutions			
	2006-274 A	2006-275 A	2006-275 B	2006-275 A
2123			○	○
2126	○	○	○	○
2137	○		○	○
2139			○	○

Inactive on BETA version

Results From ALL SESSION SOLUTIONS

Controls

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

LEGEND

MARKS: meet preferences do not meet preferences are not included have error

CORS: meet preferences do not meet preferences are not included

Baselines:

+ Marks Marks&CORS -

Map Satellite Terrain

Show street map

Map data ©2013 Google - Terms of Use

LEGEND

MARKS

2123

2126

2137

2139

Add MARKS

CORS

covg

dstr

hamm

msht

mssc

nola

Add CORS

The page at dev.ngs.noaa.gov says:

Send a list of all projects created by this project manager to that manager's email address.

Click "OK" to continue or "Cancel" to stop this process now.

Sessions & Solutions						
2123			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2123
2126	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2126
2137	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		2137
2139			<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	2139

The button will email a list of all your projects to you.

Results From ALL SESSION SOLUTIONS

Controls

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

LEGEND

MARKS: ○ meet preferences ⊗ do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: ———

Map Satellite Terrain

Show street map

Map data ©2013 Google - Terms of Use

LEGEND

MARKS

○ 2123

○ 2126

○ 2137

⊗ 2139

Add MARKS

CORS

▲ covg

▲ dstr

▲ hamm

▲ msht

▲ mssc

▲ nola

Add CORS

The next two buttons are disabled placeholders for pending enhancements.

Sessions & Solutions						
2137	○		○	○		2137
2139			○	○	⊗	⊗ 2139

Inactive on BETA version

Results From ALL SESSION SOLUTIONS

Controls: ? ← ↻

Preferences
Project List
Design
Serial
Solutions
Show File
Send Email
Set up Adjustment
Review and Publish
Delete Project

MARKS: meet preferences do not meet preferences are not included have error

CORS: meet preferences do not meet preferences are not included

Baselines: ██████████

LEGEND MARKS

- 2123
- 2126
- 2137
- 2139

Map Satellite Terrain

Show street map

Manage Solutions for "my project @ 2006-10-01"

? ↻ Apply Changes and Close X

A SOLUTION identifier *must*:

- be unique within this project.
- be 1 to 30 characters in length.

A SOLUTION identifier *must not*:

- contain a forward- or backward-slash, e.g. "/" or "\".

A SOLUTION identifier *should*:

- be as simple and brief as possible.

SESSION SOLUTIONS			
Rename as 2006-274-	A	Confirm: A	Delete: <input type="checkbox"/>
Rename as 2006-275-	A	Confirm: A	Delete: <input type="checkbox"/>
Rename as 2006-275-	B	Confirm: B	Delete: <input type="checkbox"/>
Rename as 2006-276-	A	Confirm: A	Delete: <input type="checkbox"/>
Rename as 2006-276-	B	Confirm: B	Delete: <input type="checkbox"/>
Rename as 2006-277-	A	Confirm: A	Delete: <input type="checkbox"/>

NETWORK ADJUSTMENTS

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Sessions & Solutions

2137	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2137
2139	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	2139

The Solutions button displays the solution controls. Here, you can rename or solutions in this project.

The screenshot displays the NOAA National Geodetic Survey software interface. The main window is titled "my project @ 2006-10-01". The interface includes a sidebar with various controls and a main display area showing a session solution report for session 2006-274-A.

Results From: ALL SESSION SOLUTIONS

Controls: ? ← ↻

MARKS: meet preferences do not meet preferences are not included have error

CORS: meet preferences do not meet preferences are not included

Baselines: ██████████

LEGEND: MARKS 2123

Project List: Preferences, Project List, Design, Serfil, Solutions, **Show File**, Send Email, Set up Adjustment, Review and Publish, Delete Project

Session Solution Report:

2006-274-A.txt created: 2013-05-20 16:54 UTC downloaded: 2013-05-20 20:06 UTC

NGS OPUS-PROJECTS SESSION SOLUTION REPORT

All coordinate accuracies reported here are 1 times the formal uncertainties from the solution. For additional information:
dev.ngs.noaa.gov/OPUS/Using_OPUS-Projects.html#accuracy

These positions were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

SUBMITTED BY: your.name@your.address
SOLUTION FILE NAME: 2006-274-A.sum
SOLUTION SOFTWARE: page5 (1301.08)
SOLUTION DATE: 2013-05-20T12:40:26 UTC
STANDARD ERROR OF UNIT WEIGHT: 0.619
TOTAL NUMBER OF OBSERVATIONS: 72609
TOTAL NUMBER OF MARKS: 6
NUMBER OF CONSTRAINED MARKS: 4

OVERALL RMS: 1.2 cm
START TIME: 2006-10-01T00:00:00 GPS
STOP TIME: 2006-10-02T23:59:30 GPS
PROGRAM OPERATION: FULL RUN
FREQUENCY: L1-ONLY TO ION-FREE [BY BASELINE LENGTH]
OBSERVATION INTERVAL: 30 s
ELEVATION CUTOFF: 15 deg
TROPIC INTERVAL: 7200 s [PIECE-WISE LINEAR PARAMETERIZATION]

“Show File” displays one of the processing reports in a separate window. The controls were explained in Step 3 : Session Processing.

Results From ALL SESSION SOLUTIONS

Controls

MARKS: meet preferences do not meet preferences are not included have error

CORS: meet preferences do not meet preferences are not included

Baselines: _____

LEGEND

MARKS

○ 2123

○ 2126

○ 2137

○ 2139

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

Map Satellite Terrain

Show street map

"my project @ 2006-10-01" Email

Send Email

To: Me All Processors All Field Members OPUS Projects Team

Subject: "my project @ 2006-10-01"

Attach: Session Solution 2006-274-A

Summary Summary (XML) Processing Log SINEX

Serfil G-File G-File (pos) G-File (r80) G-File (vec)

Message:

Website Owner: National Geodetic Survey / \$Revision: 86817 \$Created: 2011-04-05

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“Send Email” opens a limited capability email tool in a separate window. Its controls were also explained in Step 3 : Session Processing.

Results From ALL SESSION SOLUTIONS

Controls

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

LEGEND

MARKS: ○ meet preferences ⊗ do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: ————

Map Satellite Terrain

Show street map

LEGEND

MARKS

○ 2123

○ 2126

○ 2137

⊗ 2139

Add MARKS

CORS

▲ covg

▲ dstr

▲ hamm

▲ msht

▲ mssc

▲ nola

Add CORS

We'll come back to "Set up Adjustment" after we finish exploring this page.

Sessions & Solutions						
2137	○	○	○	○	○	2137
2139	○	○	○	⊗	⊗	2139

Results From ALL SESSION SOLUTIONS

Controls

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

LEGEND

MARKS: ○ meet preferences ⊗ do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: ———

Map Satellite Terrain

LEGEND

MARKS

○ 2123

○ 2126

○ 2137

⊗ 2139

Add MARKS

CORS

▲ covg

▲ dstr

▲ hamm

▲ msht

▲ mssc

▲ nola

Add CORS

“Review and Publish” is deprecated and will be removed in the near future.

Sessions & Solutions						
2137	○	○	○	○	○	2137
2139	○	○	○	⊗	⊗	2139

Results From **ALL SESSION SOLUTIONS**

Controls

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

LEGEND

MARKS: ○ meet preferences ⊗ do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: —————

Map Satellite Terrain

Show street map

LEGEND

MARKS

○ 2123

○ 2126

○ 2137

⊗ 2139

Add MARKS

CORS

▲ covg

▲ dstr

▲ hamm

▲ msht

▲ mssc

▲ nola

Add CORS

Sessions & Solutions

2137	○	○	○	○	○	○	2137
2139	○	○	○	⊗	⊗	⊗	2139

Jumping to the last button, "Delete Project" sends a request to delete this project to the OPUS Project Team.

Results From ALL SESSION SOLUTIONS

Controls

Preferences

Project List

Design

Serfil

Solutions

Show File

Send Email

Set up Adjustment

Review and Publish

Delete Project

LEGEND

MARKS: ○ meet preferences ⊗ do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: ————

Map Satellite Terrain

Show street map

LEGEND

MARKS

○ 2123

○ 2126

○ 2137

⊗ 2139

Add MARKS

CORS

▲ covg

▲ dstr

▲ hamm

▲ msht

▲ mssc

▲ nola

Add CORS

Confirmation before deleting a project is required so don't worry about accidents. The steps are explained during this process.

Sessions & Solutions							
2137	○		○	○			2137
2139			○	○	⊗	⊗	2139

The table at the bottom of the page is a terse summary of the project sessions, solutions and marks.

MARKS	Sessions & Solutions						MARKS
	2006-274 A	2006-275 A	2006-275 B	2006-276 A	2006-276 B	2006-277 A	
2123			●	●	●	●	2123
2126	●	●	●	●			2126
2137	●		●	●			2137
2139			●	●	●	●	2139

The column headers across the top of the table name all the sessions, session solutions and network adjustments (no network adjustments exist yet). Session solutions and network adjustments show a baseline indicator below; sessions that haven't been processed do not. Session and session solution headers are convenience links to take you to that session's page.

		Sessions & Solutions							
MARKS		2006-274 A	2006-275 A	2006-275 B	2006-276 A	2006-276 B	2006-277 A	MARKS	
	2123			○	○	○	○		2123
	2126	○	○	○	○				2126
	2137	○		○	○				2137
	2139			○	○	○	○		2139

The row headers list all the project's marks and are convenience links to take you to that mark's page.

The interface includes a sidebar with the following buttons: Project List, Design, Serfil, Solutions, Show File, Send Email, Set up Adjustment, Review and Publish, and Delete Project. The map shows a network of points (circles and triangles) connected by lines, with labels for various locations like Natchez, Brookhaven, Hattiesburg, Bogalusa, and New Orleans. A scale bar indicates 20 miles and 20 kilometers. The 'CORS' list on the right includes: covg, dstr, hamm, msht, mssc, nola. The 'Sessions & Solutions' table is as follows:

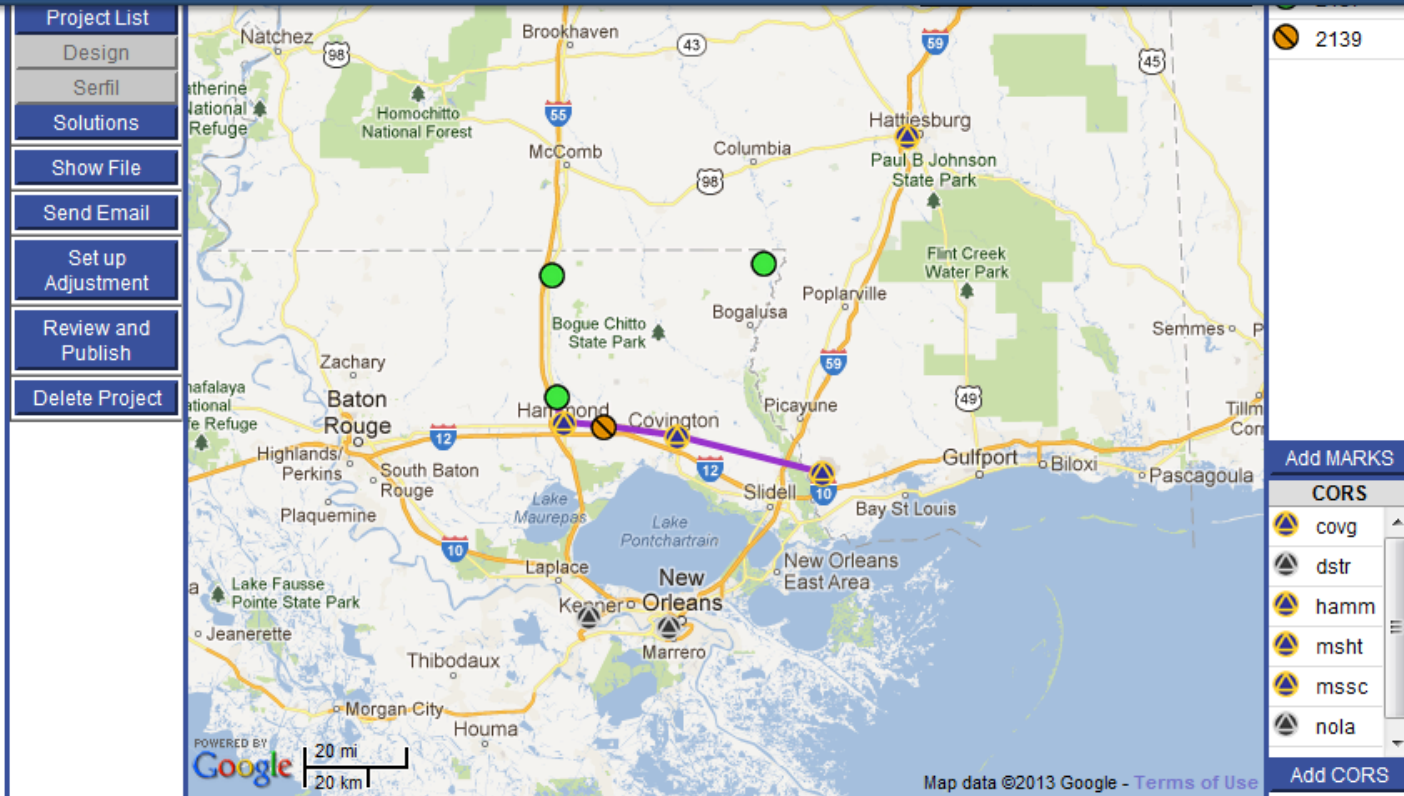
MARKS	Sessions & Solutions						MARKS
	2006-274 A	2006-275 A	2006-275 B	2006-276 A	2006-276 B	2006-277 A	
2123			○	○	○	○	2123
2126	○	○	○	○			2126
2137	○		○	○			2137
2139			○	○	⊗	⊗	2139

A mark's inclusion in a session or solution is indicated by the icons in the table. The specific icon depends upon its solution results.

The screenshot displays a software interface for CORS network management. On the left, a vertical menu contains buttons for 'Solutions', 'Show File', 'Send Email', 'Set up Adjustment', 'Review and Publish', and 'Delete Project'. The central area is a map of Louisiana showing a network of CORS stations connected by lines. Stations include Baton Rouge, Slidell, Hattiesburg, and others. On the right, a 'CORS' list shows icons for 'covg', 'dstr', 'hamm', 'msht', 'mssc', and 'nola'. Below the map is a table titled 'Sessions & Solutions'.

MARKS	Sessions & Solutions						MARKS
	2006-274 A	2006-275 A	2006-275 B	2006-276 A	2006-276 B	2006-277 A	
2123			●	●	●	●	2123
2126	●	●	●	●			2126
2137	●		●	●			2137
2139			●	●	●	●	2139

Let's use this table to investigate the possible problem with 2139 in session 2006-277-A. First, let's go to the 2006-277-A page.



MARKS	Sessions & Solutions						MARKS
	2006-274 A	2006-275 A	2006-275 B	2006-276 A	2006-276 B	2006-277	
2123			●	●	●	●	2123
2126	●	●	●	●			2126
2137	●		●	●			2137
2139			●	●	●	●	2139

In a few moments, longer for larger projects, the 2006-277-A session page replaces the manager's page.

Show File

Send Email

Set up Processing

Add MARKS

CORS

- covg
- dstr
- hamm
- mssc
- nola

Add CORS

Solution Quality Indicators

MARKS	ANTENNA	HEIGHT (m)	EPH TYPE	OBS (%)	FIXED (%)	RMS (m)	LAT (m)	LON (m)	HGT (m)	
2123	TRM55971.00	NONE	2.000	precise	95.5	84.6	0.009	0.004	0.002	0.004
2139	TRM55971.00	NONE	2.000	precise	79.8	100.0	0.021	0.004	0.002	0.004
PREFERENCES:			Best Available	≥80.0	≥80.0	≤0.025	≤0.030	≤0.030	≤0.060	

We can quickly see that the percentage of observations included in this session solution from the 2139 data file is slightly below our preferred threshold. The other solution quality control values are acceptable (although the post-fit residual RMS is near its maximum based upon our preferences).



Solution Quality Indicators

MARKS	ANTENNA	HEIGHT (m)	EPH TYPE	OBS (%)	FIXED (%)	RMS (m)	LAT (m)	LON (m)	HGT (m)	
2123	TRM55971.00	NONE	2.000	precise	95.5	84.6	0.009	0.004	0.002	0.004
2139	TRM55971.00	NONE	2.000	precise	79.8	100.0	0.021	0.004	0.002	0.004
PREFERENCES:				Best Available	≥80.0	≥80.0	≤0.025	≤0.030	≤0.030	≤0.060

Let's continue this investigation by going to 2139's page.
Remember that we can do that by clicking on the row header.

Show File

Send Email

Set up Processing

Add MARKS

CORS

- covg
- dstr
- hamm
- mssc
- nola

Add CORS

Solution Quality Indicators

MARKS	ANTENNA	HEIGHT (m)	EPH TYPE	OBS (%)	FIXED (%)	RMS (m)	LAT (m)	LON (m)	HGT (m)	
2123	TRM55971.00	NONE	2.000	precise	95.5	84.6	0.009	0.004	0.002	0.004
2139	TRM55971.00	NONE	2.000	precise	79.8	100.0	0.021	0.004	0.002	0.004
PREFERENCES:			Best Available	≥80.0	≥80.0	≤0.025	≤0.030	≤0.030	≤0.060	

Controls

MARK 2139

Project Marks,

Project CORS

Published Marks,

+ This Mark
 All Marks
Marks&CORS
-

Map Satellite Terrain

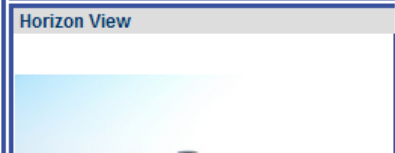
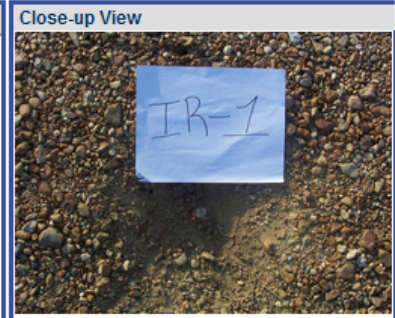
POWERED BY

Map data ©2013 Google - [Terms of Use](#)

MARK 2139 Datasheet Mock-up

Upload A Photo
Save Description

Description	
PID	
stamping*	K 383 1986
name*	K 383 1986
type*	R = Rod ▼ I = Metal rod ▼
	Rod Depth*: <input type="text" value="10.9"/> <input type="radio"/> Feet <input checked="" type="radio"/> Meters
setting*	49 = Stainless steel rod without sleeve (10FT+ or 3.048M+) ▼
	specific setting
description* <small>474 chars (500 chars max)</small>	THE MARK IS ON THE LEFT. IT IS 16.3 METERS (53.5 FT) NORTH OF THE CENTERLINE OF U.S. HIGHWAY 190, 9.8 METERS (32.3 FT) WEST OF THE CENTER OF A GATE WITH BUFORD ABOVE IT, 7.1 METERS (23.5 FT) WEST OF THE WEST GATE POST, 1.0 METERS (3.5 FT) NORTH OF A POWER POLE NUMBER 15 AND 0.45 METERS (1.5 FT) NORTH OF A CHAIN LINK FENCE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. THE MARK IS 0.30 METERS N FROM A WITNESS POST THE MARK IS ABOVE LEVEL WITH HIGHWAY 190.



In a few more moments, the 2139 summary page replaces the session page. We've visited a mark's page before, but let's explore in more detail while we continue our investigation.

DATA FILE	SPAN	HARDWARE

Controls MARK 2139 Project Marks, Project CORS Published Marks,

? ← ↺ + This Mark All Marks Marks&CORS -

Manager's Page

Show File

Send Email

Change Mark ID

Remove Mark

Verify For Publication

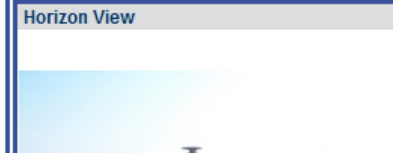
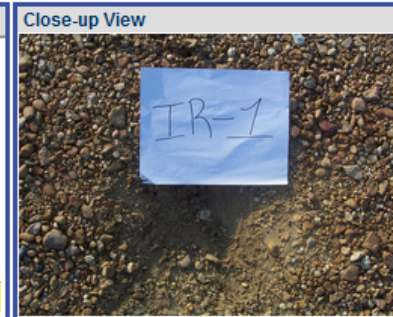
Map Satellite Terrain

Map data ©2013 Google - Terms of Use

MARK 2139 **Datasheet Mock-up**

Upload A Photo Save Description

Description	
PID	
stamping*	K 383 1986
name*	K 383 1986
type*	R = Rod
	I = Metal rod
Rod Depth*	10.9 <input type="radio"/> Feet <input checked="" type="radio"/> Meters
setting*	49 = Stainless steel rod without sleeve (10FT+ or 3.048M+)
specific setting	
description*	THE MARK IS ON THE LEFT. IT IS 16.3 METERS (53.5 FT) NORTH OF THE CENTERLINE OF U.S. HIGHWAY 190, 9.8 METERS (32.3 FT) WEST OF THE CENTER OF A GATE WITH BUFORD ABOVE IT, 7.1 METERS (23.5 FT) WEST OF THE WEST GATE POST, 1.0 METERS (3.5 FT) NORTH OF A POWER POLE NUMBER 15 AND 0.45 METERS (1.5 FT) NORTH OF A CHAIN LINK FENCE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. THE MARK IS 0.30 METERS N FROM A WITNESS POST THE MARK IS ABOVE LEVEL WITH HIGHWAY 190.



Recall that the description and occupation forms appear as simple tables and cannot be modified if you are not the project manager.

The screenshot displays the NOAA National Geodetic Survey web application interface. At the top, there is a navigation bar with a "MARK 2139" dropdown menu and buttons for "Project Marks", "Project CORS", and "Published Marks". Below this is a Google Map showing the location of Mark 2139 in Robert, Ohio, with a yellow pin icon. The map includes a scale bar (1000 ft / 200 m) and a "Map data ©2013 Google - Terms of Use" notice. To the left of the map is a "Controls" panel with buttons for "Manager's Page", "Show File", "Send Email", "Change Mark ID", "Remove Mark", and "Verify For Publication". Below the map is a "Datsheet Mock-up" section for Mark 2139, featuring a "Description" table and a "Close-up View" image of the mark.

Description	
PID	
stamping*	K 383 1986
name*	K 383 1986
type*	R = Rod
	I = Metal rod
Rod Depth*	10.9 <input type="radio"/> Feet <input checked="" type="radio"/> Meters

Close-up View: A photograph of a metal rod with a white tag attached, labeled "IR-1".

At the top of the page is a Google Map Services™ interactive map showing this mark and its immediate vicinity. Similar to but more capable than the other maps; classes of icons can be turned on/off and clicking on a published mark's icon displays its datasheet. The mark's name in the legend at the top of the map is a pull-down menu to navigate to other mark web pages.

Controls

MARK 2139

Project Marks, Project CORS, Published Marks

Map Satellite Terrain

+ This Mark All Marks Marks&CORS -

Manager's Page

Show File

Send Email

Change Mark ID

Remove Mark

Verify For Publication

Map data ©2013 Google - Terms of Use

MARK 2139 Datasheet Mock-up

Upload A Photo Save Description

Description

PID

stamping* K 383 1986

name* K 383 1986

type* R = Rod
I = Metal rod

Rod Depth*: 10.9 Feet Meters

setting* 49 = Stainless steel rod without sleeve (10FT+ or 3.048M+)

specific setting

description* 474 chars (500 chars max)
THE MARK IS ON THE LEFT. IT IS 16.3 METERS (53.5 FT) NORTH OF THE CENTERLINE OF U.S. HIGHWAY 190, 9.8 METERS (32.3 FT) WEST OF THE CENTER OF A GATE WITH BUFORD ABOVE IT, 7.1 METERS (23.5 FT) WEST OF THE WEST GATE POST, 1.0 METERS (3.5 FT) NORTH OF A POWER POLE NUMBER 15 AND 0.45 METERS (1.5 FT) NORTH OF A CHAIN LINK FENCE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. THE MARK IS 0.30 METERS N FROM A WITNESS POST THE MARK IS ABOVE LEVEL WITH HIGHWAY 190.

Close-up View

Horizon View

To the left of the map are general controls for this page. The six to the top should be familiar by this time, but the rest are specific to this web page.

Controls

MARK 2139

Project Marks, Project CORS, Published Marks

Map Satellite Terrain

Manager's Page

Show File

Send Email

Change Mark ID

Remove Mark

Verify For Publication

Map data ©2013 Google - Terms of Use

MARK 2139 Datasheet Mock-up

Upload A Photo Save Description

Description

PID

stamping* K 383 1986

name* K 383 1986

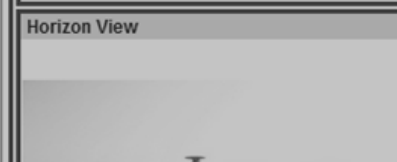
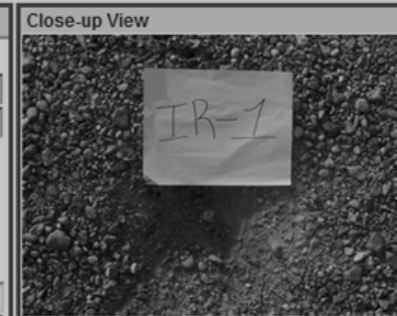
type* R = Rod
I = Metal rod

Rod Depth*: 10.9 Feet Meters

setting* 49 = Stainless steel rod without sleeve (10FT+ or 3.048M+)

specific setting

description* 474 chars (500 chars max)
THE MARK IS ON THE LEFT. IT IS 16.3 METERS (53.5 FT) NORTH OF THE CENTERLINE OF U.S. HIGHWAY 190, 9.8 METERS (32.3 FT) WEST OF THE CENTER OF A GATE WITH BUFORD ABOVE IT, 7.1 METERS (23.5 FT) WEST OF THE WEST GATE POST, 1.0 METERS (3.5 FT) NORTH OF A POWER POLE NUMBER 15 AND 0.45 METERS (1.5 FT) NORTH OF A CHAIN LINK FENCE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. THE MARK IS 0.30 METERS N FROM A WITNESS POST THE MARK IS ABOVE LEVEL WITH HIGHWAY 190.



“Change MARK ID” enables you to change the mark’s ID, 2139 in this case, to another four character string.

condition Good condition Poor, disturbed, mutilated, requires maintenance

*required fields

Controls

MARK 2139

Project Marks, Project CORS, Published Marks

Map Satellite Terrain

Manager's Page

Show File

Send Email

Change Mark ID

Remove Mark

Verify For Publication

Map data ©2013 Google - Terms of Use

MARK 2139 Datasheet Mock-up

Upload A Photo Save Description

Description

PID

stamping* K 383 1986

name* K 383 1986

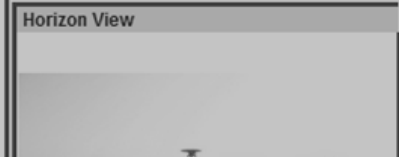
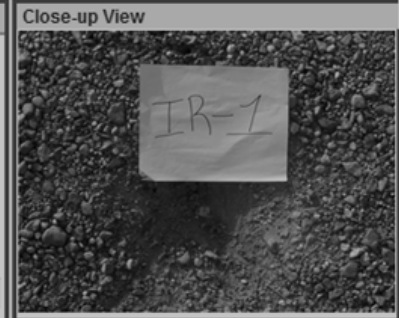
type* R = Rod
I = Metal rod

Rod Depth*: 10.9 Feet Meters

setting* 49 = Stainless steel rod without sleeve (10FT+ or 3.048M+)

specific setting

description* 474 chars (500 chars max)
THE MARK IS ON THE LEFT. IT IS 16.3 METERS (53.5 FT) NORTH OF THE CENTERLINE OF U.S. HIGHWAY 190, 9.8 METERS (32.3 FT) WEST OF THE CENTER OF A GATE WITH BUFORD ABOVE IT, 7.1 METERS (23.5 FT) WEST OF THE WEST GATE POST, 1.0 METERS (3.5 FT) NORTH OF A POWER POLE NUMBER 15 AND 0.45 METERS (1.5 FT) NORTH OF A CHAIN LINK FENCE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. THE MARK IS 0.30 METERS N FROM A WITNESS POST THE MARK IS ABOVE LEVEL WITH HIGHWAY 190.



“Remove Mark” irrevocably removes this mark and its data from this project after confirming the instruction to do so.

condition Good condition Poor, disturbed, mutilated, requires maintenance

*required fields

DATA FILE	SPAN	HARDWARE

Controls

MARK 2139

Project Marks, Project CORS, Published Marks

This Mark All Marks Marks&CORS

Map Satellite Terrain

Manager's Page

Show File

Send Email

Change Mark ID

Remove Mark

Verify For Publication

Map data ©2013 Google - Terms of Use

MARK 2139 Datasheet Mock-up

Upload A Photo Save Description

Description

PID

stamping* K 383 1986

name* K 383 1986

type* R = Rod I = Metal rod

Rod Depth*: 10.9 Feet Meters

setting* 49 = Stainless steel rod without sleeve (10FT+ or 3.048M+)

specific setting

description* 474 chars (500 chars max)

THE MARK IS ON THE LEFT. IT IS 16.3 METERS (53.5 FT) NORTH OF THE CENTERLINE OF U.S. HIGHWAY 190, 9.8 METERS (32.3 FT) WEST OF THE CENTER OF A GATE WITH BUFORD ABOVE IT, 7.1 METERS (23.5 FT) WEST OF THE WEST GATE POST, 1.0 METERS (3.5 FT) NORTH OF A POWER POLE NUMBER 15 AND 0.45 METERS (1.5 FT) NORTH OF A CHAIN LINK FENCE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. THE MARK IS 0.30 METERS N FROM A WITNESS POST THE MARK IS ABOVE LEVEL WITH HIGHWAY 190.

Close-up View

Horizon View

The "Verify For Publication" control is deprecated and will be removed in the near future.

condition Good condition Poor, disturbed, mutilated, requires maintenance

*required fluids

MARK 2139 Occupations

DATA FILE SPAN HARDWARE

Manage Data Files Save Occupations

Publication | 200 m | Map data ©2013 Google - Terms of Use

MARK 2139 Datasheet Mock-up Upload A Photo Save Description

Description

PID

stamping* K 383 1986

name* K 383 1986

type* R = Rod
I = Metal rod

Rod Depth*: 10.9 Feet Meters

setting* 49 = Stainless steel rod without sleeve (10FT+ or 3.048M+)

specific setting

description* 474 chars (500 chars max)
THE MARK IS ON THE LEFT. IT IS 16.3 METERS (53.5 FT) NORTH OF THE CENTERLINE OF U.S. HIGHWAY 190, 9.8 METERS (32.3 FT) WEST OF THE CENTER OF A GATE WITH BUFORD ABOVE IT, 7.1 METERS (23.5 FT) WEST OF THE WEST GATE POST, 1.0 METERS (3.5 FT) NORTH OF A POWER POLE NUMBER 15 AND 0.45 METERS (1.5 FT) NORTH OF A CHAIN LINK FENCE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. THE MARK IS 0.30 METERS N FROM A WITNESS POST THE MARK IS ABOVE LEVEL WITH HIGHWAY 190.

stability B = Monument will probably hold position well

magnetic I = Marker is a steel rod

application --- no selection ---

condition Good condition Poor, disturbed, mutilated, requires maintenance

* required fields

Close-up View

Horizon View

MARK 2139 Occupations Manage Data Files Save Occupations

DATA FILE	SPAN	HARDWARE				
2139275u.06o	Start	2006-10-02T20:07:30 GPS	Antenna	Model: TRM55971.00 NONE	S/N: 30255823	Height (m): 2.000
	End	2006-10-03T01:16:30 GPS	Receiver	Model: TRIMBLE NETR5	S/N: 4624K01583	Firmware:

The Datasheet Mock-up should look familiar. Remember, only the project manager can make changes. Empty optional fields are shaded yellow; empty required fields would be shaded red.

Publication | 200 m | Map data ©2013 Google - Terms of Use

MARK 2139 Datasheet Mock-up Upload A Photo Save Description

Description

PID:

stamping*: K 383 1986

name*: K 383 1986

type*: R = Rod
I = Metal rod

Rod Depth*: 10.9 Feet Meters

setting*: 49 = Stainless steel rod without sleeve (10FT+ or 3.048M+)

specific setting:

description*: 474 chars (500 chars max)
THE MARK IS ON THE LEFT. IT IS 16.3 METERS (53.5 FT) NORTH OF THE CENTERLINE OF U.S. HIGHWAY 190, 9.8 METERS (32.3 FT) WEST OF THE CENTER OF A GATE WITH BUFORD ABOVE IT, 7.1 METERS (23.5 FT) WEST OF THE WEST GATE POST, 1.0 METERS (3.5 FT) NORTH OF A POWER POLE NUMBER 15 AND 0.45 METERS (1.5 FT) NORTH OF A CHAIN LINK FENCE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. THE MARK IS 0.30 METERS N FROM A WITNESS POST THE MARK IS ABOVE LEVEL WITH HIGHWAY 190.

stability: B = Monument will probably hold position well

magnetic: I = Marker is a steel rod

application: --- no selection ---

condition: Good condition Poor, disturbed, mutilated, requires maintenance

* required fields

Close-up View

Horizon View

MARK 2139 Occupations Manage Data Files Save Occupations

DATA FILE	SPAN	HARDWARE				
2139275u.06o	Start	2006-10-02T20:07:30 GPS	Antenna	Model: TRM55971.00 NONE	S/N: 30255823	Height (m): 2.000
	End	2006-10-03T01:16:30 GPS	Receiver	Model: TRIMBLE NETR5	S/N: 4624K01583	Firmware:

In addition to controls specific to this section on the right, the label for this section includes another pull-down menu to navigate to other mark web pages.

The Occupations table lists information about the data files for this mark. Note that the antenna serial number and receiver information are not required and often left blank. However, this information is captured in bluebooking and, so, may be necessary for your project.

description* 474 chars (500 chars max)
 THE MARK IS ON THE LEFT. IT IS 16.3 METERS (53.5 FT) NORTH OF THE CENTERLINE OF U.S. HIGHWAY 190, 9.8 METERS (32.3 FT) WEST OF THE CENTER OF A GATE WITH BUFORD ABOVE IT, 7.1 METERS (23.5 FT) WEST OF THE WEST GATE POST, 1.0 METERS (3.5 FT) NORTH OF A POWER POLE NUMBER 15 AND 0.45 METERS (1.5 FT) NORTH OF A CHAIN LINK FENCE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. THE MARK IS 0.30 METERS N FROM A WITNESS POST THE MARK IS ABOVE LEVEL WITH HIGHWAY 190.

stability B = Monument will probably hold position well

magnetic I = Marker is a steel rod

application --- no selection ---

condition Good condition Poor, disturbed, mutilated, requires maintenance

* required fields



MARK 2139 Occupations

Manage Data Files Save Occupations

DATA FILE	SPAN	HARDWARE				
2139275u.06o	Start	2006-10-02T20:07:30 GPS	Antenna	Model: TRM55971.00 NONE	S/N: 30255823	Height (m): 2.000
	End	2006-10-03T01:16:30 GPS	Receiver	Model: TRIMBLE NETRS	S/N: 4624K01583	Firmware:
2139276g.06o	Start	2006-10-03T06:07:30 GPS	Antenna	Model: TRM55971.00 NONE	S/N: 30255823	Height (m): 2.000
	End	2006-10-03T10:54:45 GPS	Receiver	Model: TRIMBLE NETRS	S/N: 4624K01583	Firmware:
2139276r.06o	Start	2006-10-03T17:56:30 GPS	Antenna	Model: TRM55971.00 NONE	S/N: 30255823	Height (m): 2.000
	End	2006-10-04T00:22:30 GPS	Receiver	Model: TRIMBLE NETRS	S/N: 4624K01583	Firmware:
2139277g.06o	Start	2006-10-04T06:56:30 GPS	Antenna	Model: TRM55971.00 NONE	S/N: 30255823	Height (m): 2.000
	End	2006-10-04T10:59:45 GPS	Receiver	Model: TRIMBLE NETRS	S/N: 4624K01583	Firmware:

MARK 2139 Processing Results From 2006-275-B

Manage Coordinates

Scale uncertainties by 1.0x (68.3%)
 Coordinate source: 2006-275-B

REF FRAME:	IGS08 (2006.7534)	NAD_83(2011) (2010.0000)	COORDINATE SYSTEM:	SPC 1702 LA S	UTM 15
------------	-------------------	--------------------------	--------------------	---------------	--------

Scrolling down, we see the solution results for this mark.

End 2006-10-04T10:59:45 GPS Receiver Model: TRIMBLE NETR5 S/N: 4624K01583 Firmware:

MARK 2139 Processing Results From 2006-275-B

Manage Coordinates

Scale uncertainties by 1.0x (68.3%)

Coordinate Source: 2006-275-B

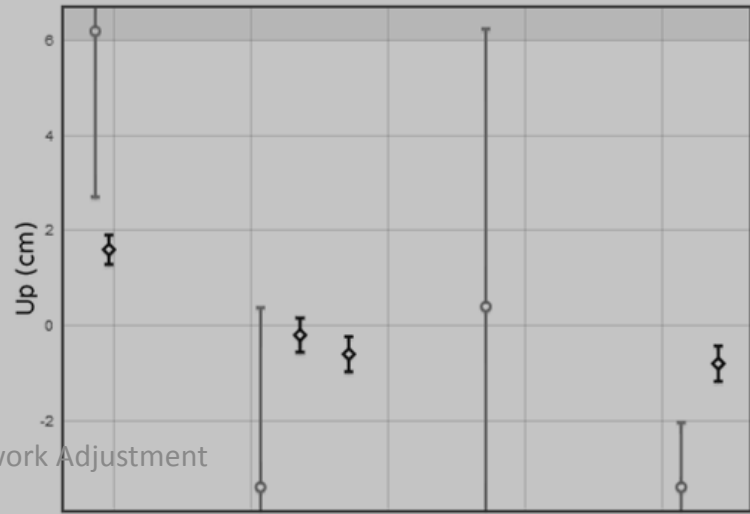
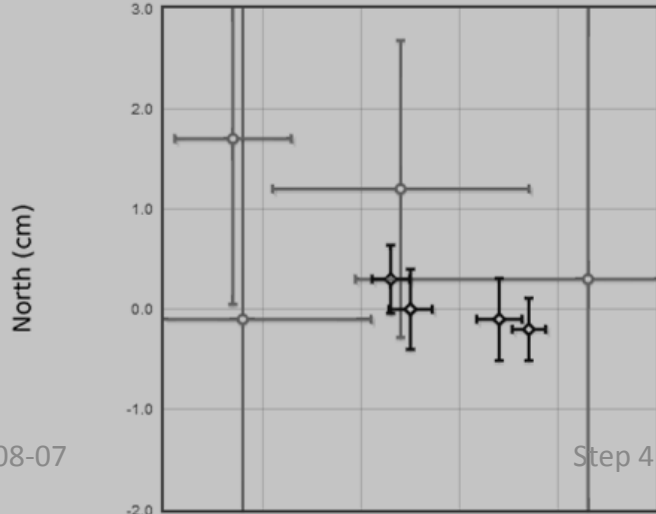
REF FRAME:	IGS08 (2006.7534)	NAD_83(2011) (2010.0000)	COORDINATE SYSTEM:	SPC 1702 LA S	UTM 15
LAT:	N30:30:19.92320 ±0.003 m	N30:30:19.90335 ±0.003 m	NORTHING:	222723.870 m	3377830.950 m
EAST LON:	E269:40:03.41841 ±0.002 m	E269:40:03.44421 ±0.002 m	EASTING:	1096080.695 m	756017.226 m
WEST LON:	W090:19:56.58159 ±0.002 m	W090:19:56.55579 ±0.002 m	CONVERGENCE:	0.50049106°	1.35488066°
EL HGT:	-19.416 ±0.003 m	-18.046 ±0.003 m	POINT SCALE:	0.99996441	1.00040867
X:	-31906.403 ±0.002 m	-31905.724 ±0.002 m	COMBINED FACTOR:	0.99996724	1.00041151
Y:	-5499912.681 ±0.003 m	-5499914.176 ±0.003 m	U.S. NATIONAL GRID:	15RYP5601777830	
Z:	3218773.309 ±0.003 m	3218773.478 ±0.003 m			
ORTHO HGT: 8.827 ±0.012 m (H = h - N WHERE N = GEOID12A HGT)					

DATA FILE	ANTENNA	HEIGHT (m)	EPH TYPE	OBS (%)	FIXED (%)	RMS (m)	LAT (m)	LON (m)	HGT (m)	SOLUTION
2139275u.06o	TRM55971.00 NONE	2.000	precise	81.9	94.4	0.018	0.003	0.002	0.003	2006-275-B
2139276g.06o	TRM55971.00 NONE	2.000	-	-	-	-	-	-	-	
2139276r.06o	TRM55971.00 NONE	2.000	-	-	-	-	-	-	-	
2139277g.06o	TRM55971.00 NONE	2.000	-	-	-	-	-	-	-	
Preferences			Best Available	≥80.0	≥80.0	≤0.025	≤0.030	≤0.030	≤0.060	Preferences

MARK 2139 Processing Results Plots

Scale uncertainties by 1.0x (68.3%) Show preferences network session OPUS published.

The "zero" point coordinates, N30:30:19.92326, W090:19:56.58186, -19.432 m el. height, are the mean of all session solutions.



Step 4: Network Adjustment

2139276r.06o	Start	2006-10-03T17:56:30 GPS	Antenna	Model:	TRM55971.00 NONE	S/N:	30255823	Height (m):	2.000
	End	2006-10-04T00:22:30 GPS	Receiver	Model:	TRIMBLE NEIR5	S/N:	4624K01583	Firmware:	
2139277g.06o	Start	2006-10-04T06:56:30 GPS	Antenna	Model:	TRM55971.00 NONE	S/N:	30255823	Height (m):	2.000
	End	2006-10-04T10:59:45 GPS	Receiver	Model:	TRIMBLE NEIR5	S/N:	4624K01583	Firmware:	

MARK Processing Results From

Manage Coordinates

Scale uncertainties by

Coordinate Source: 2006-275-B

REF FRAME:	IGS08 (2006.7534)	NAD_83(2011) (2010.0000)	COORDINATE SYSTEM:	SPC 1702 LA S	UTM 15
LAT:	N30:30:19.92320 ±0.003 m	N30:30:19.90335 ±0.003 m	NORTHING:	222723.870 m	3377830.950 m
EAST LON:	E269:40:03.41841 ±0.002 m	E269:40:03.44421 ±0.002 m	EASTING:	1096080.695 m	756017.226 m
WEST LON:	W090:19:56.58159 ±0.002 m	W090:19:56.55579 ±0.002 m	CONVERGENCE:	0.50049106°	1.35488066°
EL HGT:	-19.416 ±0.003 m	-18.046 ±0.003 m	POINT SCALE:	0.99996441	1.00040867
X:	-31906.403 ±0.002 m	-31905.724 ±0.002 m	COMBINED FACTOR:	0.99996724	1.00041151
Y:	-5499912.681 ±0.003 m	-5499914.176 ±0.003 m	U.S. NATIONAL GRID:	15RYP5601777830	
Z:	3218773.309 ±0.003 m	3218773.478 ±0.003 m			
ORTHO HGT: 8.827 ±0.012 m (H = h - N WHERE N = GEOID12A HGT)					

DATA FILE	ANTENNA	HEIGHT (m)	EPH TYPE	OBS (%)	FIXED (%)	RMS (m)	LAT (m)	LON (m)	HGT (m)	SOLUTION
2139275u.06o	TRM55971.00 NONE	2.000	precise	81.9	94.4	0.018	0.003	0.002	0.003	2006-275-B
2139276g.06o	TRM55971.00 NONE	2.000	-	-	-	-	-	-	-	
2139276r.06o	TRM55971.00 NONE	2.000	-	-	-	-	-	-	-	
2139277g.06o	TRM55971.00 NONE	2.000	-	-	-	-	-	-	-	
Preferences			Best Available	≥80.0	≥80.0	≤0.025	≤0.030	≤0.030	≤0.060	Preferences

MARK Processing Results Plots

Scale uncertainties by . Show preferences network session OPUS published.

The "zero" point coordinates, N30:30:19.92326, W090:19:56.58186, -19.432 m el. height, are the mean of all session solutions.



The label for this section includes another pull-down menu to navigate to other mark web pages, a solution selection control, and, on the right, a button to display a form controlling the a priori coordinates and preferences specifically for this mark.

Let's change to the session 2006-277-A results to confirm our findings from that session's page.

MARK 2139 Processing Results From 2006-277-A

Manage Coordinates

Scale uncertainties by 1.0x (68.3%)

Coordinate Source: 2006-277-A

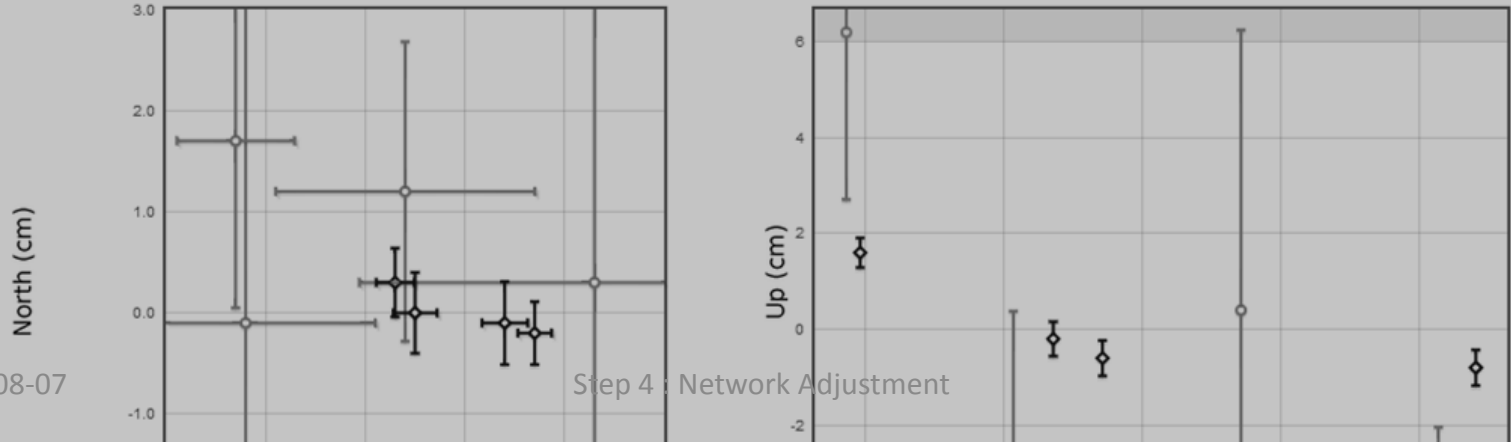
REF FRAME:	IGS08 (2006.7574)	NAD_83(2011) (2010.0000)	COORDINATE SYSTEM:	SPC 1702 LA S	UTM 15
LAT:	N30:30:19.92326 ±0.004 m	N30:30:19.90342 ±0.004 m	NORTHING:	222723.872 m	3377830.952 m
EAST LON:	E269:40:03.41796 ±0.002 m	E269:40:03.44375 ±0.002 m	EASTING:	1096080.683 m	756017.214 m
WEST LON:	W090:19:56.58204 ±0.002 m	W090:19:56.55625 ±0.002 m	CONVERGENCE:	0.50049100°	1.35488059°
EL HGT:	-19.441 ±0.004 m	-18.071 ±0.004 m	POINT SCALE:	0.99996441	1.00040867
X:	-31906.415 ±0.002 m	-31905.736 ±0.002 m	COMBINED FACTOR:	0.99996725	1.00041151
Y:	-5499912.658 ±0.004 m	-5499914.153 ±0.004 m	U.S. NATIONAL GRID:	15RYP5601777830	
Z:	3218773.298 ±0.004 m	3218773.467 ±0.004 m			
ORTHO HGT: 8.802 ±0.012 m (H = h - N WHERE N = GEOID12A HGT)					

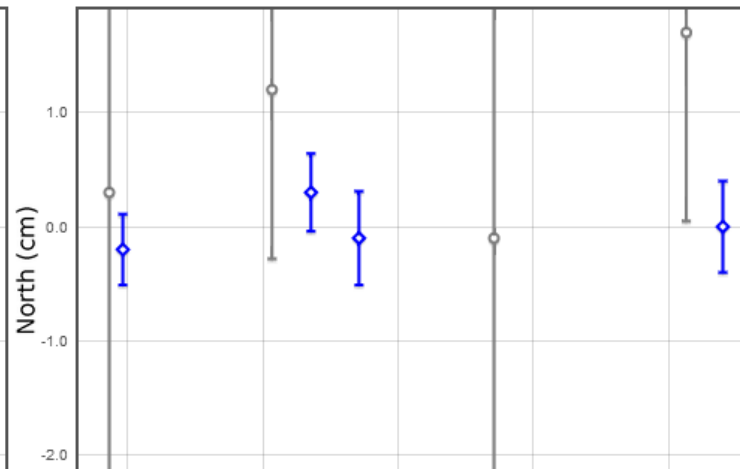
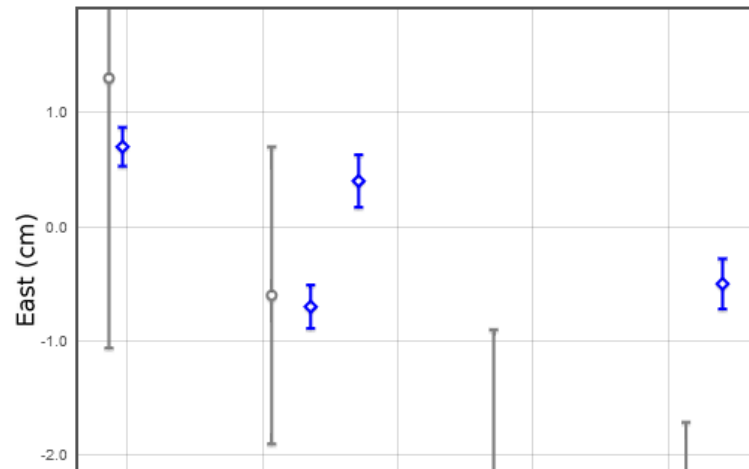
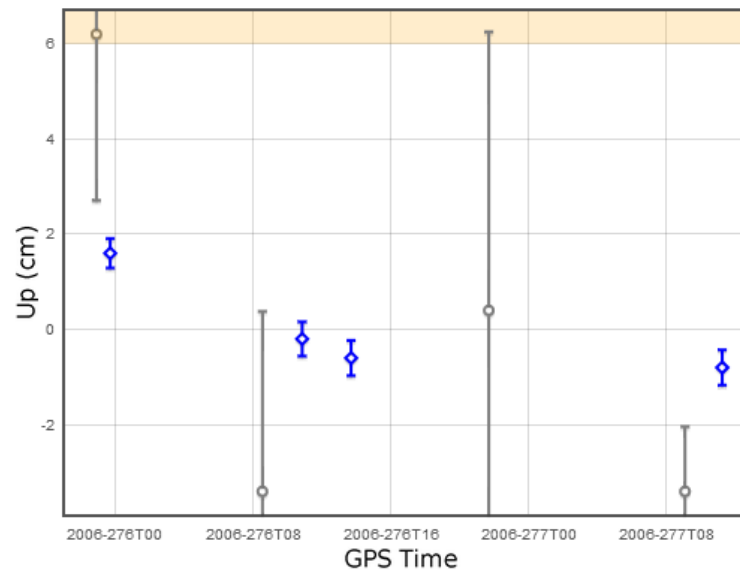
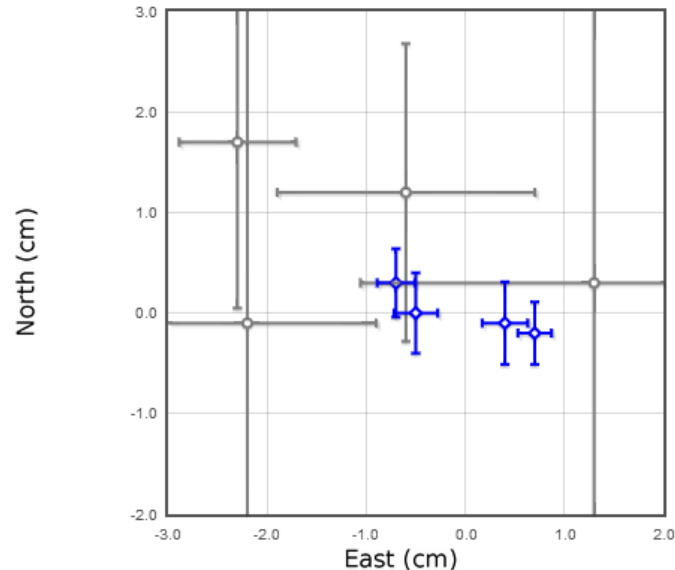
DATA FILE	ANTENNA	HEIGHT (m)	EPH TYPE	OBS (%)	FIXED (%)	RMS (m)	LAT (m)	LON (m)	HGT (m)	SOLUTION
2139275u.06o	TRM55971.00 NONE	2.000	-	-	-	-	-	-	-	
2139276g.06o	TRM55971.00 NONE	2.000	-	-	-	-	-	-	-	
2139276r.06o	TRM55971.00 NONE	2.000	-	-	-	-	-	-	-	
2139277g.06o	TRM55971.00 NONE	2.000	precise	79.8	100.0	0.021	0.004	0.002	0.004	2006-277-A
Preferences			Best Available	≥80.0	≥80.0	≤0.025	≤0.030	≤0.030	≤0.060	Preferences

MARK 2139 Processing Results Plots

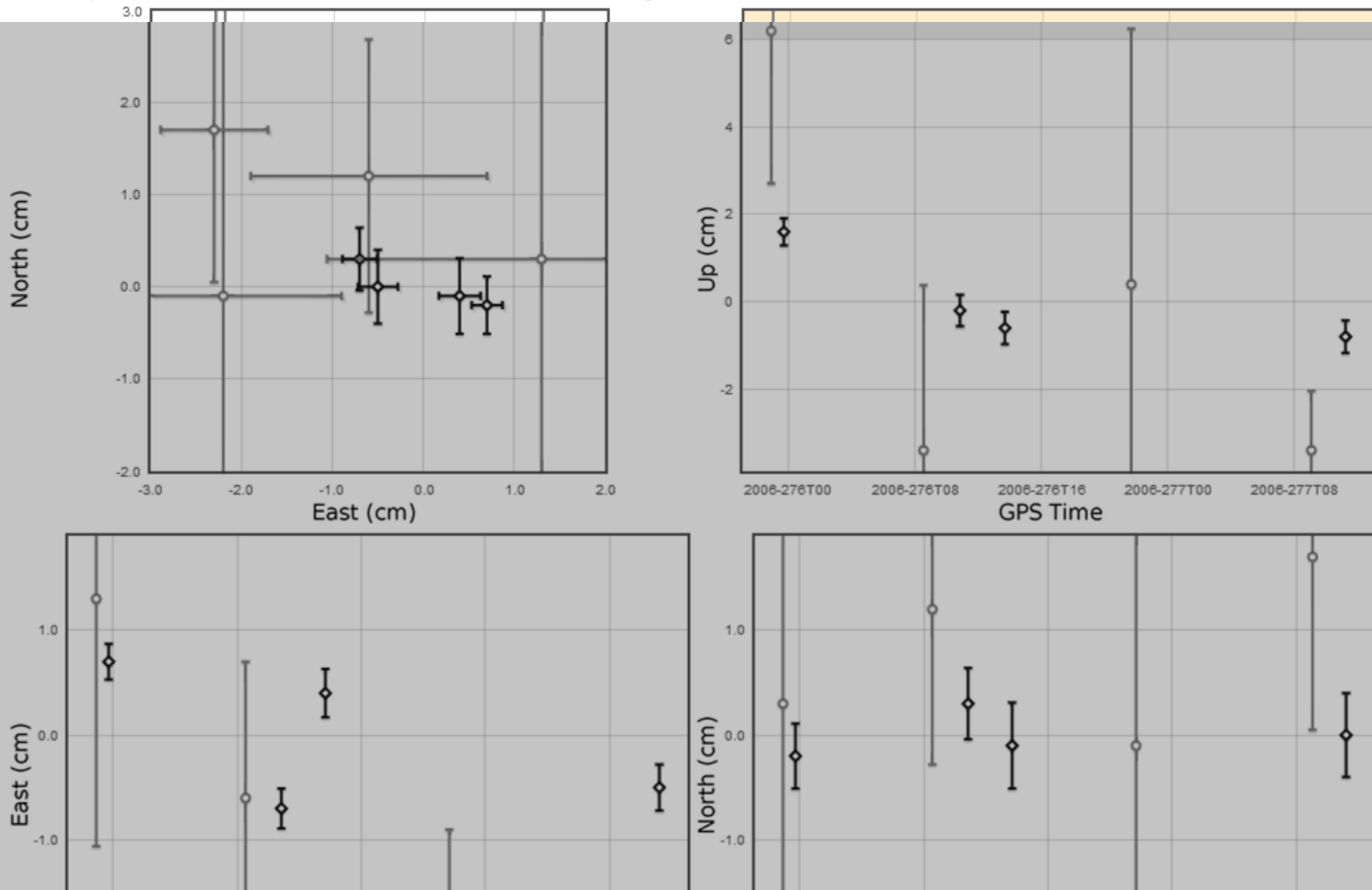
Scale uncertainties by 1.0x (68.3%) Show preferences network session OPUS published.

The "zero" point coordinates, N30:30:19.92326, W090:19:56.58186, -19.432 m el. height, are the mean of all session solutions.

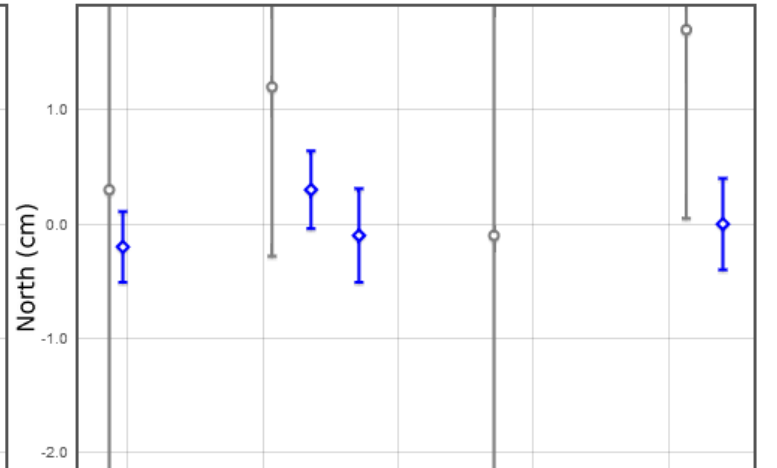
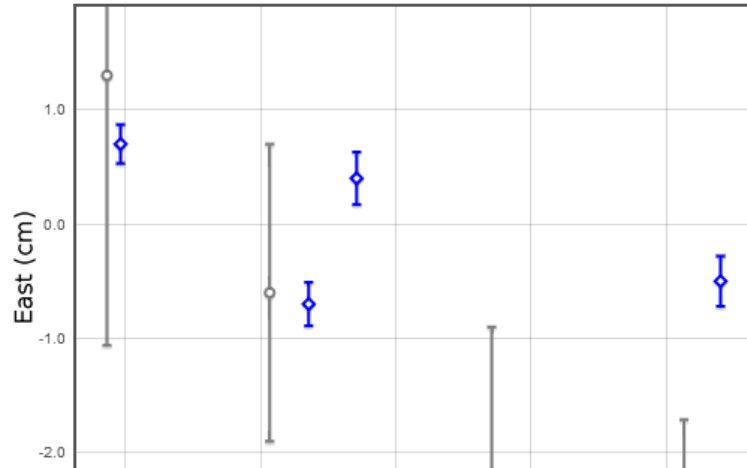
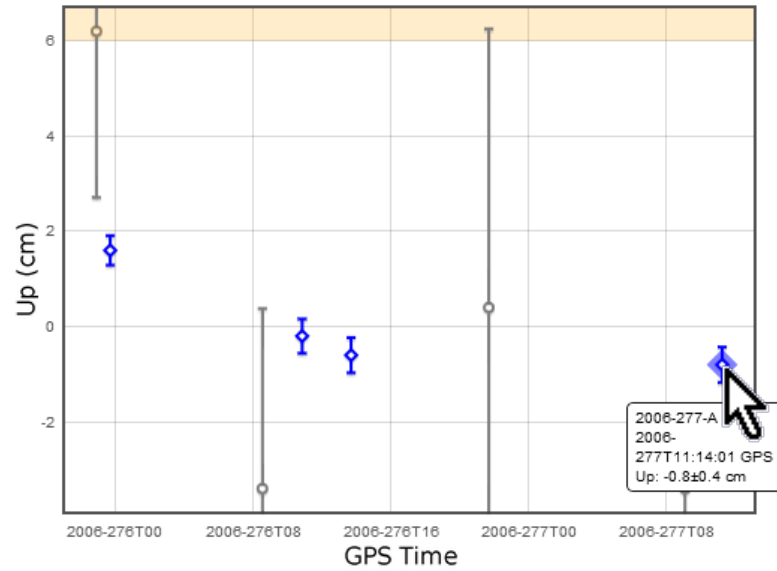
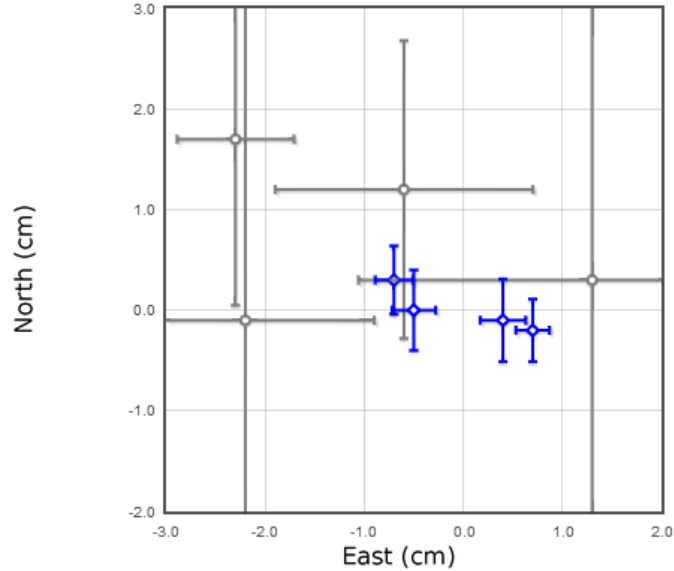




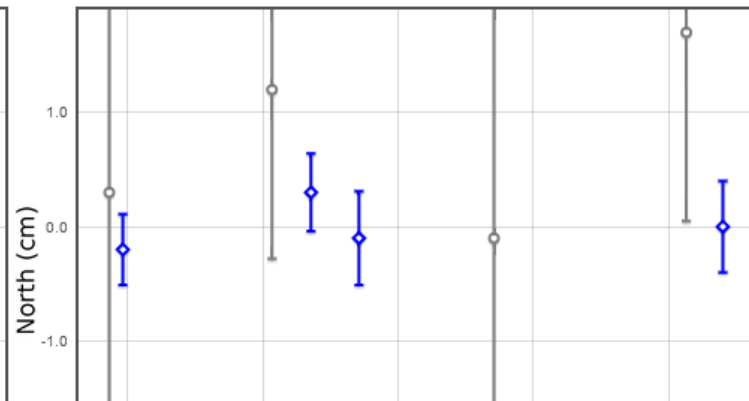
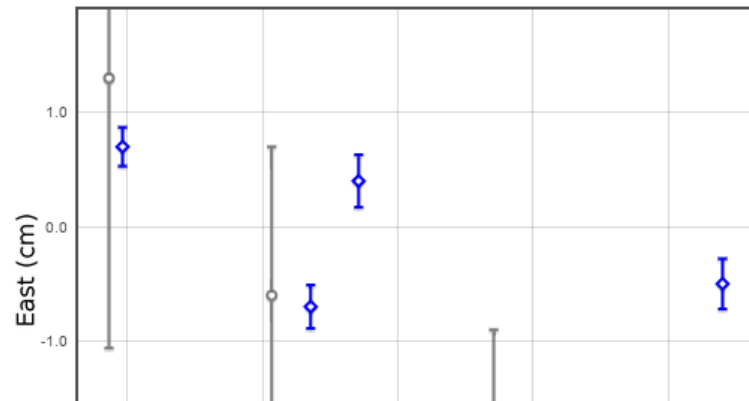
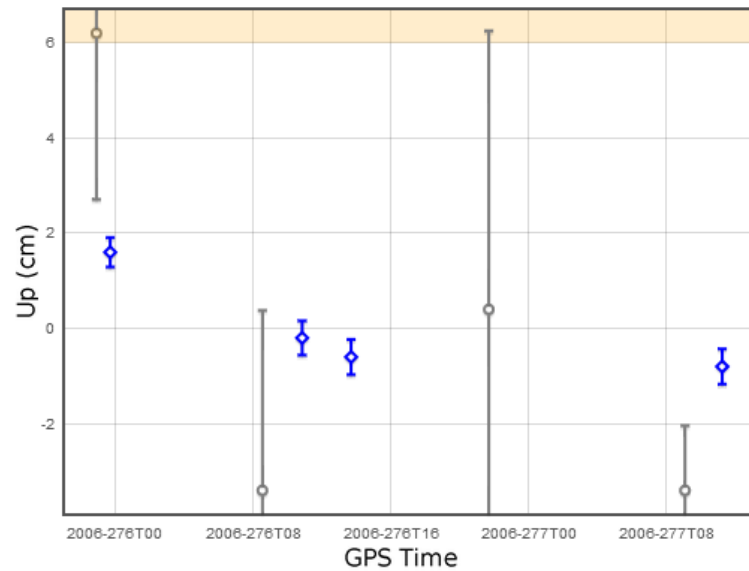
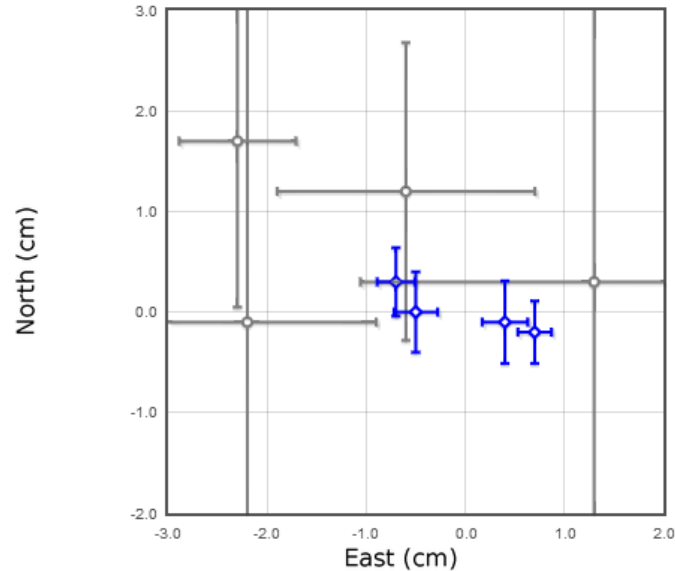
Continuing to scroll down the page, we'll find the solution results plots.



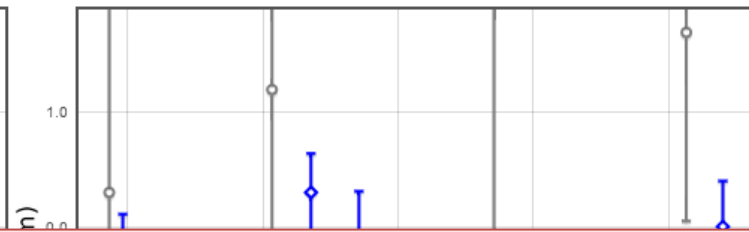
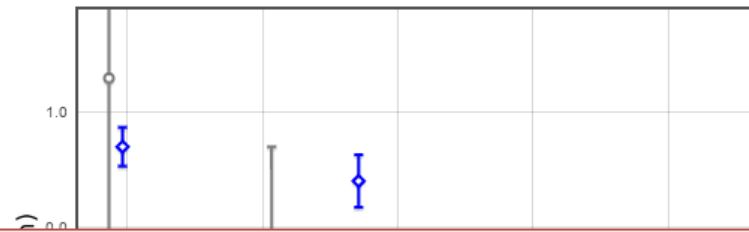
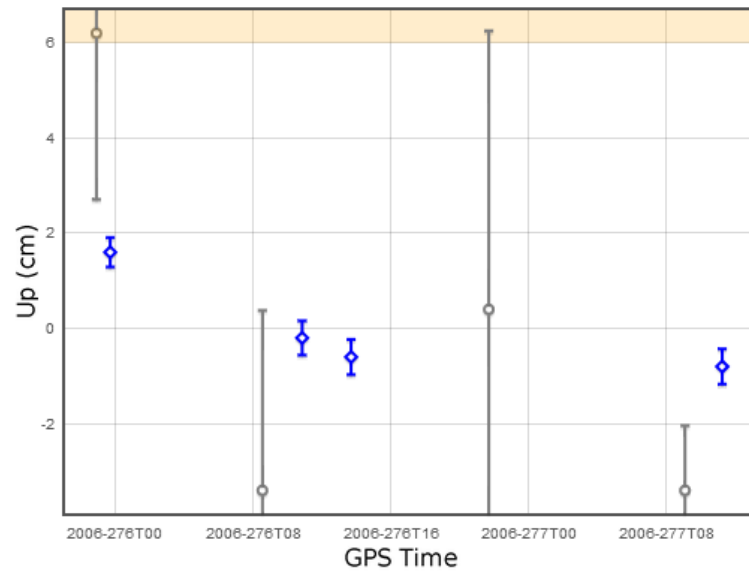
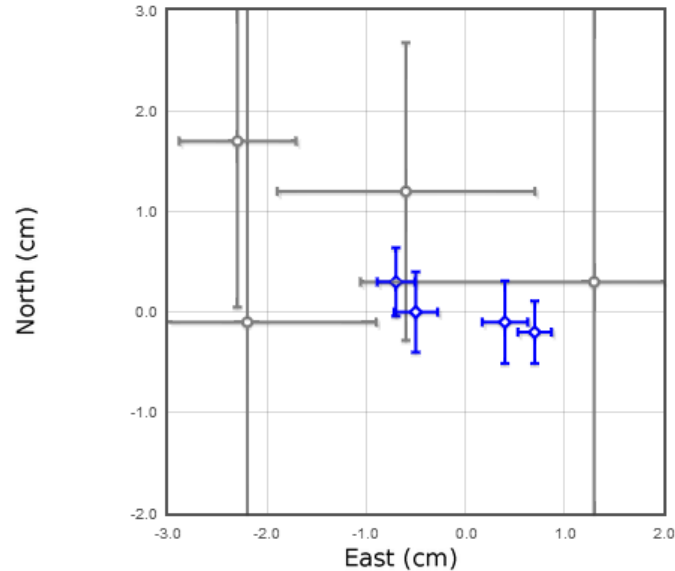
Like all the sections on this web page, the section label contains a pull-down menu to navigate to other mark web pages and controls specific to this section.



Examining the plots, the 2006-277-A results for this mark do not look abnormal.



Considering that the flagged values just exceed thresholds and the coordinates results agree well, there is no strong reason to omit mark 2139 from this session.



Although not demanded by the results and, therefore, a dubious decision, a suggested exercise is to create an alternate solution for session 2006-277-A in which 2139 is excluded. Then you can continue to evaluate the effects of this data file on the session solution and forthcoming network adjustment.

Controls

MARK 2139

Project Marks, Project CORS, Published Marks

Map Satellite Terrain

Manager's Page

Show File

Send Email

Change Mark ID

Remove Mark

Verify For Publication

Map data ©2013 Google - Terms of Use

MARK 2139 Datasheet Mock-up

Upload A Photo Save Description

Description

PID

stamping* K 383 1986

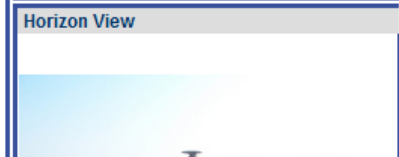
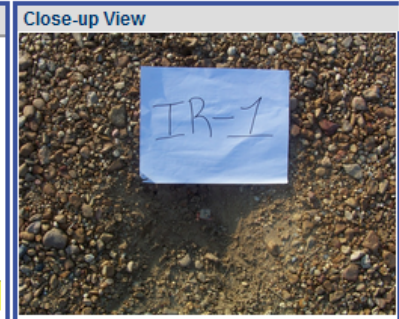
name* K 383 1986

type* R = Rod
I = Metal rod
Rod Depth*: 10.9 Feet Meters

setting* 49 = Stainless steel rod without sleeve (10FT+ or 3.048M+)

specific setting

description* THE MARK IS ON THE LEFT. IT IS 16.3 METERS (53.5 FT) NORTH OF THE CENTERLINE OF U.S. HIGHWAY 190, 9.8 METERS (32.3 FT) WEST OF THE CENTER OF A GATE WITH BUFORD ABOVE IT, 7.1 METERS (23.5 FT) WEST OF THE WEST GATE POST, 1.0 METERS (3.5 FT) NORTH OF A POWER POLE NUMBER 15 AND 0.45 METERS (1.5 FT) NORTH OF A CHAIN LINK FENCE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. THE MARK IS 0.30 METERS N FROM A WITNESS POST THE MARK IS ABOVE LEVEL WITH HIGHWAY 190.



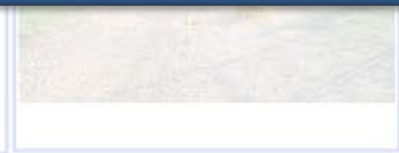
We'll accept 2139 "as is" and return to the manager's page.

magnetic I = Marker is a steel rod

application --- no selection ---

condition Good condition Poor, disturbed, mutilated, requires maintenance

*required fields



Results From ALL SESSION SOLUTIONS

Controls
 ? ← ↻

LEGEND
 MARKS: ● meet preferences ● do not meet preferences ⊗ are not included ⊗ have error
 CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included
 Baselines: —————

Preferences
 Project List
 Design
 Serfil
 Solutions
 Show File
 Send Email
 Set up Adjustment
 Review and Publish
 Delete Project

Map Satellite Terrain

LEGEND
 MARKS
 ● 2123
 ● 2126
 ● 2137
 ● 2139

LEGEND
 Add MARKS
 CORS
 ▲ covg
 ▲ dstr
 ▲ hamm
 ▲ msht
 ▲ mssc
 ▲ nola
 Add CORS

You may need to refresh the manager's page if you used the "Back" rather than the "Manager's Page" button.

2137	●		●	●		2137
2139			●	●	●	2139

Results From **ALL SESSION SOLUTIONS**

Controls

MARKS: ○ meet preferences ☒ do not meet preferences ⊗ are not included ⊗ have error
 CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included
 Baselines: ————

LEGEND

MARKS

- 2123
- 2126
- 2137
- ⊗ 2139

Map Satellite Terrain

Map showing a network of points and baselines in the Baton Rouge, Louisiana area. The network includes points at Hattiesburg, Bogalusa, Slidell, and others, connected by baselines. A mouse cursor is pointing to the "Set up Adjustment" button in the left-hand control panel.

POWERED BY Google

Map data ©2013 Google - Terms of Use

Next, let's set up and perform a network adjustment. Start by clicking the "Set up Adjustment" control button.

2137	○	○	○	○	2137
2139	○	○	⊗	⊗	2139

Results From ALL SESSION SOLUTIONS

Controls

MARKS: ○ meet preferences ☒ do not meet preferences ⊗ are not included ⊗ have error
CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included
Baselines: ————

LEGEND

MARKS

- 2123
- 2126
- 2137
- 2139

Map Satellite Terrain

Set up Adjustment

Review and Publish

Delete Project

Map data ©2013 Google - Terms of Use

Before beginning a network adjustment, the session processing results for all marks should be examined. We'll leave that as another exercise.

Results From ALL SESSION SOLUTIONS

Controls
 ? ← ↻
 Preferences
 Project List
 Design
 Serfil
 Solutions
 Show File
 Send Email
 Set up Adjustment
 Review and Publish
 Delete Project

MARKS: ● meet preferences ● do not meet preferences ⊗ are not included ⊗ have error
CORS: ● meet preferences ● do not meet preferences ⊗ are not included
 Baselines: ██████████

LEGEND MARKS
 ● 2123

"my project @ 2006-10-01" Network Adjustment

? ↻ Perform Adjustment X

Adjustment Name (30 char max): final

Included Solutions	Available Solutions
[add]	2006-274-A
	2006-275-A
	2006-275-B
	2006-276-A
	2006-276-B
	2006-277-A

MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° '' ''')	LONGITUDE (° '' ''')	REF. FRAME
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° '' ''')	LONGITUDE (° '' ''')	REF. FRAME

Processing Preferences
 Output Ref Frame: LET OPUS CHOOSE
 Output Geoid Model: LET OPUS CHOOSE
 Constraint Weights: LOOSE NORMAL TIGHT

Website Owner: National Geodetic Survey / \$Revision: 69566 \$Created: 2013-02-21
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There are many similarities between the network adjustment and session processing controls. As we did then, let's focus on these controls but keep a small copy of the map.

?
↺
Perform Adjustment
✕

Adjustment Name (30 char max):

Included Solutions	Available Solutions
<div style="border: 1px solid gray; padding: 2px;">[add]</div>	2006-274-A 2006-275-A 2006-275-B 2006-276-A 2006-276-B 2006-277-A

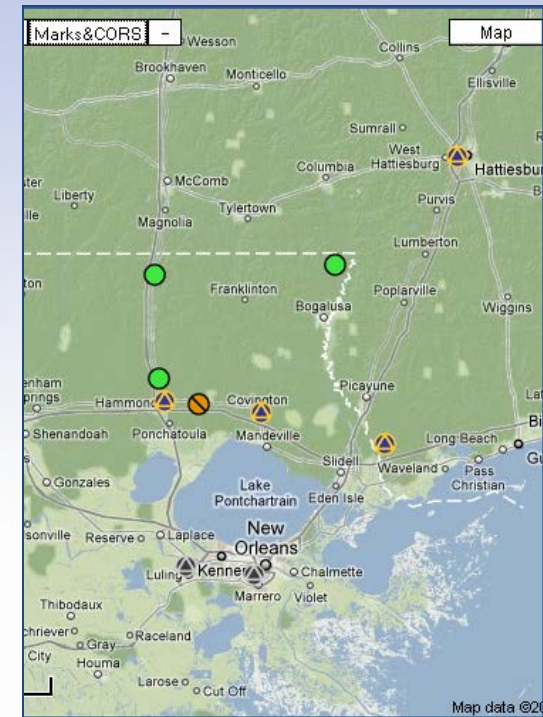
MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° ' ")	LONGITUDE (° ' ")	REF. FRAME
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° ' ")	LONGITUDE (° ' ")	REF. FRAME

Processing Preferences

Output Ref Frame:

Output Geoid Model:

Constraint Weights:
 LOOSE
 NORMAL
 TIGHT



First, note that no marks are listed and all the baselines have been removed from the map. They will be replaced as session solutions are included in the adjustment.

Adjustment Name (30 char max):

Included Solutions	Available Solutions
[add]	2006-274-A
	2006-275-A
	2006-275-B
	2006-276-A
	2006-276-B
	2006-277-A

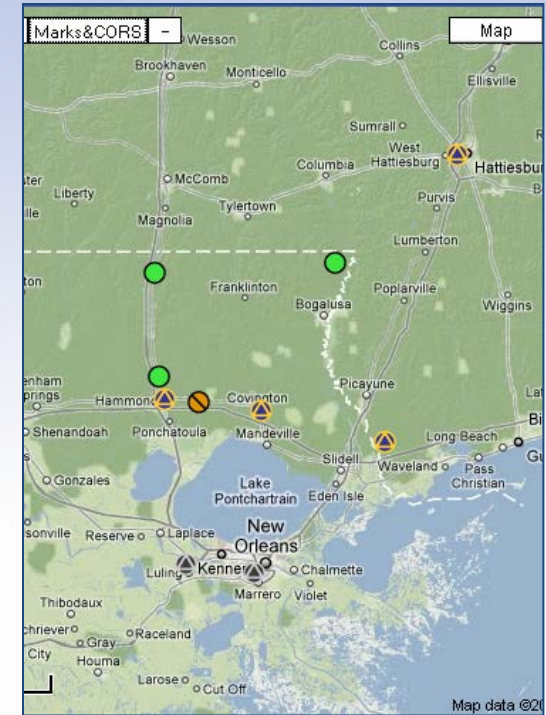
MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° ' ")	LONGITUDE (° ' ")	REF. FRAME
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° ' ")	LONGITUDE (° ' ")	REF. FRAME

Processing Preferences

Output Ref Frame: ▾

Output Geoid Model: ▾

Constraint Weights: LOOSE NORMAL TIGHT



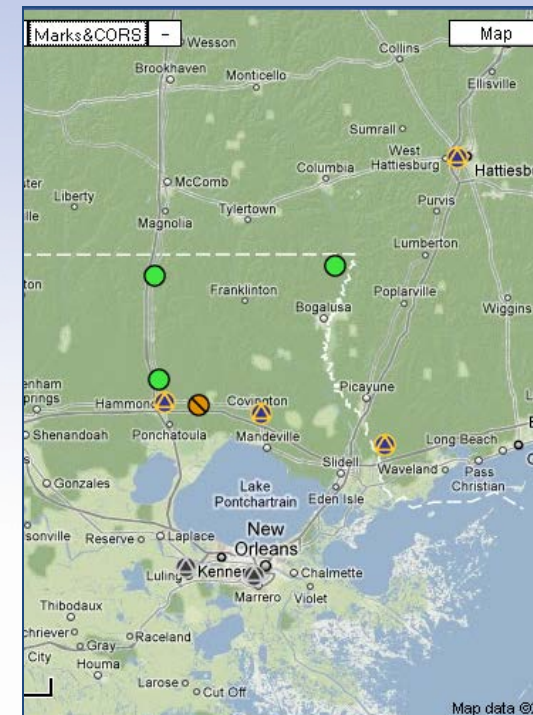
An adjustment can have a name. Usually, it will be something like “final”, but other names can help organize testing.

Adjustment Name (30 char max):

Included Solutions	Available Solutions
[add]	2006-274-A
	2006-275-A
	2006-275-B
	2006-276-A
	2006-276-B
	2006-277-A

MARK CONSTRAINT HEIGHT (m) LATITUDE (° ' ") LONGITUDE (° ' ") REF. FRAME
CORS CONSTRAINT HEIGHT (m) LATITUDE (° ' ") LONGITUDE (° ' ") REF. FRAME

Processing Preferences
 Output Ref Frame:
 Output Geoid Model:
 Constraint Weights: LOOSE NORMAL TIGHT



All completed session solutions are listed. At least one must be included. Only one solution from a session should be included if alternates exist.

?
Perform Adjustment
✕

Adjustment Name (30 char max):

Included Solutions

2006-274-A

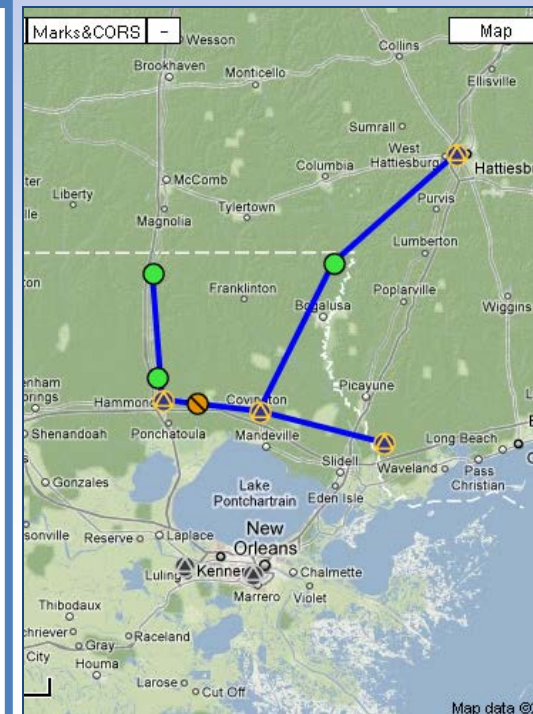
Available Solutions

2006-275-A
 2006-275-B
 2006-276-A
 2006-276-B
 2006-277-A

MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° '' ''')	LONGITUDE (° '' ''')	REF. FRAME	
2126	NONE	EL HGT	14.019	N30:58:00.80116	W089:48:34.33127	IGS08 (2006.7507)
2137	NONE	EL HGT	33.196	N30:56:11.58242	W090:30:25.29761	IGS08 (2006.7506)
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° '' ''')	LONGITUDE (° '' ''')	REF. FRAME	
covg	3-D	EL HGT	-5.932	N30:28:33.28953	W090:05:43.94752	IGS08 (2005.0000)
hamm	3-D	EL HGT	5.820	N30:30:47.07133	W090:28:03.45357	IGS08 (2005.0000)
msht	3-D	EL HGT	64.476	N31:19:39.16104	W089:20:10.65121	IGS08 (2005.0000)
mssc	3-D	EL HGT	-13.084	N30:22:30.81443	W089:36:49.92726	IGS08 (2005.0000)

Processing Preferences

 Output Ref Frame:
 Output Geoid Model:
 Constraint Weights: LOOSE NORMAL TIGHT



As you start to include session solutions for your adjustment, the marks included in those sessions solutions will be listed and the baselines shown.

Perform Adjustment

Adjustment Name (30 char max): final

Included Solutions: 2006-274-A, 2006-275-A, 2006-275-B, 2006-276-A, 2006-276-B, 2006-277-A

Available Solutions: [none]

MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° '' ''')	LONGITUDE (° '' ''')	REF. FRAME
2123	NONE	EL HGT	-8.797	N30:35:23.61039 W090:29:12.73764	IGS08 (2006.7533)
2126	NONE	EL HGT	14.019	N30:58:00.80116 W089:48:34.33127	IGS08 (2006.7507)
2137	NONE	EL HGT	33.196	N30:56:11.58242 W090:30:25.29761	IGS08 (2006.7506)
2139	NONE	EL HGT	-19.371	N30:30:19.92334 W090:19:56.58138	IGS08 (2006.7533)

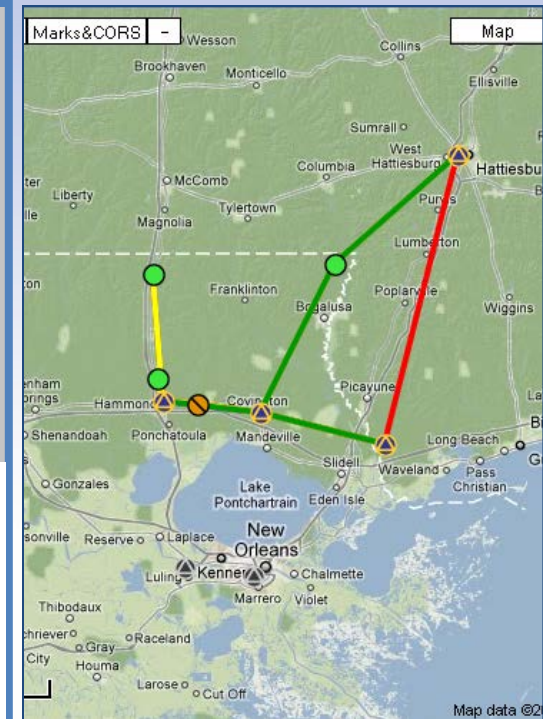
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° '' ''')	LONGITUDE (° '' ''')	REF. FRAME
covg	3-D	EL HGT	-5.932	N30:28:33.28953 W090:05:43.94752	IGS08 (2005.0000)
hamm	3-D	EL HGT	5.820	N30:30:47.07133 W090:28:03.45357	IGS08 (2005.0000)
msht	3-D	EL HGT	64.476	N31:19:39.16104 W089:20:10.65121	IGS08 (2005.0000)
mssc	3-D	EL HGT	-13.084	N30:22:30.81443 W089:36:49.92726	IGS08 (2005.0000)

Processing Preferences

Output Ref Frame: LET OPUS CHOOSE

Output Geoid Model: LET OPUS CHOOSE

Constraint Weights: LOOSE NORMAL TIGHT



The table of marks in the adjustment look very similar to that used in a session solution; however, there are differences.

Perform Adjustment

Adjustment Name (30 char max): final

Included Solutions		Available Solutions	
2006-274-A		[none]	
2006-275-A			
2006-275-B			
2006-276-A			
2006-276-B			
2006-277-A			

MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° ''')	LONGITUDE (° ''')	REF. FRAME
2123	NONE	EL HGT	-8.797	N30:35:23.61039 W090:29:12.73764	IGS08 (2006.7533)
2126	NONE	EL HGT	14.019	N30:58:00.80116 W089:48:34.33127	IGS08 (2006.7507)
2137	NONE	EL HGT	33.196	N30:56:11.58242 W090:30:25.29761	IGS08 (2006.7506)
2139	NONE	EL HGT	-19.371	N30:30:19.92334 W090:19:56.58138	IGS08 (2006.7533)

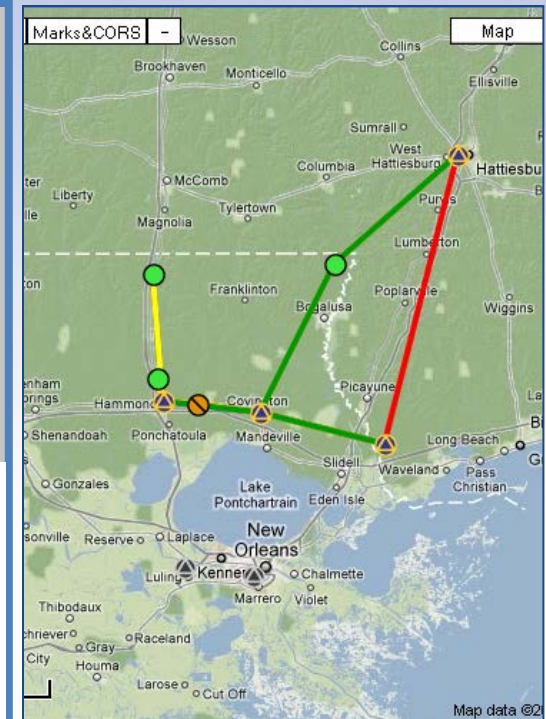
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° ''')	LONGITUDE (° ''')	REF. FRAME
covg	3-D	EL HGT	-5.932	N30:28:33.28953 W090:05:43.94752	IGS08 (2005.0000)
hamm	3-D	EL HGT	5.820	N30:30:47.07133 W090:28:03.45357	IGS08 (2005.0000)
msht	3-D	EL HGT	64.476	N31:19:39.16104 W089:20:10.65121	IGS08 (2005.0000)
mssc	3-D	EL HGT	-13.084	N30:22:30.81443 W089:36:49.92726	IGS08 (2005.0000)

Processing Preferences

Output Ref Frame: LET OPUS CHOOSE

Output Geoid Model: LET OPUS CHOOSE

Constraint Weights: LOOSE NORMAL TIGHT



The included marks and network design are set in the sessions. They cannot be changed in the adjustment.

Perform Adjustment

Adjustment Name (30 char max): final

Included Solutions: 2006-274-A, 2006-275-A, 2006-275-B, 2006-276-A, 2006-276-B, 2006-277-A

Available Solutions: [none]

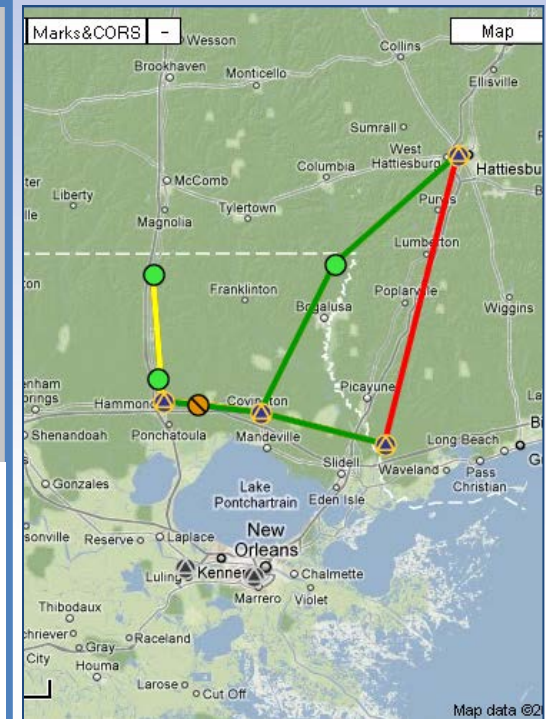
MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° ''')	LONGITUDE (° ''')	REF. FRAME
2123	NONE	EL HGT	-8.797	N30:35:23.61039 W090:29:12.73764	IGS08 (2006.7533)
2126	NONE	EL HGT	14.019	N30:58:00.80116 W089:48:34.33127	IGS08 (2006.7507)
2137	NONE	EL HGT	33.196	N30:56:11.58242 W090:30:25.29761	IGS08 (2006.7506)
2139	NONE	EL HGT	-19.371	N30:30:19.92334 W090:19:56.58138	IGS08 (2006.7533)
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° ''')	LONGITUDE (° ''')	REF. FRAME
covg	3-D	EL HGT	-5.932	N30:28:33.28953 W090:05:43.94752	IGS08 (2005.0000)
hamm	3-D	EL HGT	5.820	N30:30:47.07133 W090:28:03.45357	IGS08 (2005.0000)
msht	3-D	EL HGT	64.476	N31:19:39.16104 W089:20:10.65121	IGS08 (2005.0000)
mssc	3-D	EL HGT	-13.084	N30:22:30.81443 W089:36:49.92726	IGS08 (2005.0000)

Processing Preferences

Output Ref Frame: LET OPUS CHOOSE

Output Geoid Model: LET OPUS CHOOSE

Constraint Weights: LOOSE NORMAL TIGHT



A network adjustment uses the solution matrices *before any constraints are applied* as its data sources.

Perform Adjustment

Adjustment Name (30 char max): final

Included Solutions		Available Solutions	
2006-274-A		[none]	
2006-275-A			
2006-275-B			
2006-276-A			
2006-276-B			
2006-277-A			

MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° ''')	LONGITUDE (° ''')	REF. FRAME	
2123	NONE	EL HGT	-8.797	N30:35:23.61039	W090:29:12.73764	IGS08 (2006.7533)
2126	NONE	EL HGT	14.019	N30:58:00.80116	W089:48:34.33127	IGS08 (2006.7507)
2137	NONE	EL HGT	33.196	N30:56:11.58242	W090:30:25.29761	IGS08 (2006.7506)
2139	NONE	EL HGT	-19.371	N30:30:19.92334	W090:19:56.58138	IGS08 (2006.7533)

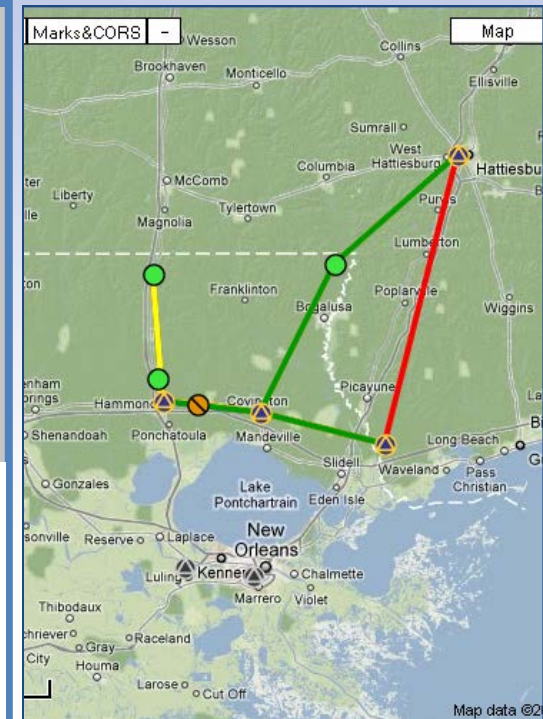
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° ''')	LONGITUDE (° ''')	REF. FRAME	
covg	3-D	EL HGT	-5.932	N30:28:33.28953	W090:05:43.94752	IGS08 (2005.0000)
hamm	3-D	EL HGT	5.820	N30:30:47.07133	W090:28:03.45357	IGS08 (2005.0000)
msht	3-D	EL HGT	64.476	N31:19:39.16104	W089:20:10.65121	IGS08 (2005.0000)
mssc	3-D	EL HGT	-13.084	N30:22:30.81443	W089:36:49.92726	IGS08 (2005.0000)

Processing Preferences

Output Ref Frame: LET OPUS CHOOSE

Output Geoid Model: LET OPUS CHOOSE

Constraint Weights: LOOSE NORMAL TIGHT



Constraints are still NONE, HOR-ONLY, VER-ONLY or 3-D.

Perform Adjustment

Adjustment Name (30 char max): final

Included Solutions		Available Solutions	
2006-274-A		[none]	
2006-275-A			
2006-275-B			
2006-276-A			
2006-276-B			
2006-277-A			

MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° ''')	LONGITUDE (° ''')	REF. FRAME
2123	NONE	EL HGT	-8.797	N30:35:23.61039 W090:29:12.73764	IGS08 (2006.7533)
2126	NONE	EL HGT	14.019	N30:58:00.80116 W089:48:34.33127	IGS08 (2006.7507)
2137	NONE	EL HGT	33.196	N30:56:11.58242 W090:30:25.29761	IGS08 (2006.7506)
2139	NONE	EL HGT	-19.371	N30:30:19.92334 W090:19:56.58138	IGS08 (2006.7533)

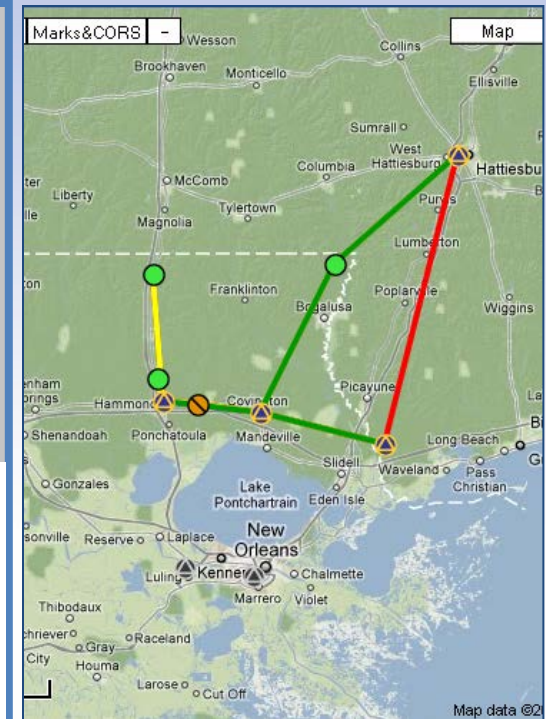
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° ''')	LONGITUDE (° ''')	REF. FRAME
covg	3-D	EL HGT	-5.932	N30:28:33.28953 W090:05:43.94752	IGS08 (2005.0000)
hamm	3-D	EL HGT	5.820	N30:30:47.07133 W090:28:03.45357	IGS08 (2005.0000)
msht	3-D	EL HGT	64.476	N31:19:39.16104 W089:20:10.65121	IGS08 (2005.0000)
mssc	3-D	EL HGT	-13.084	N30:22:30.81443 W089:36:49.92726	IGS08 (2005.0000)

Processing Preferences

Output Ref Frame: LET OPUS CHOOSE

Output Geoid Model: LET OPUS CHOOSE

Constraint Weights: LOOSE NORMAL TIGHT



The constrained coordinates can still be changed, and can be different from those used in the session solutions.

Perform Adjustment

Adjustment Name (30 char max): final

Included Solutions: 2006-274-A, 2006-275-A, 2006-275-B, 2006-276-A, 2006-276-B, 2006-277-A

Available Solutions: [none]

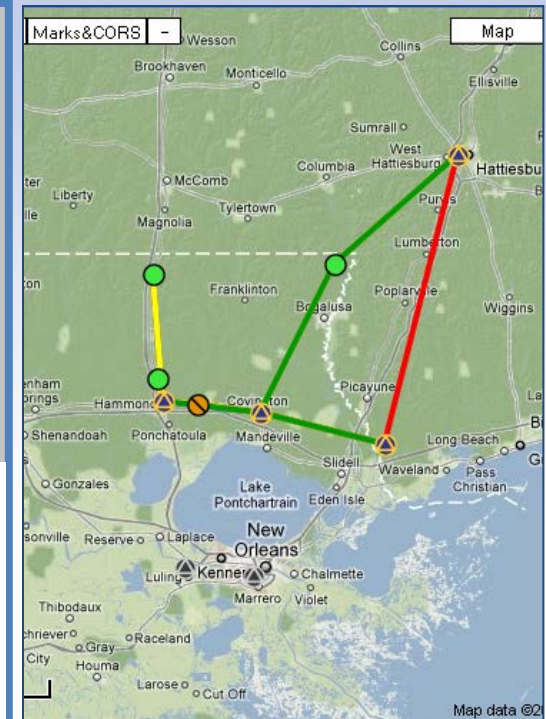
MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° '' ''')	LONGITUDE (° '' ''')	REF. FRAME
2123	NONE	EL HGT	-8.797	N30:35:23.61039 W090:29:12.73764	IGS08 (2006.7533)
2126	NONE	EL HGT	14.019	N30:58:00.80116 W089:48:34.33127	IGS08 (2006.7507)
2137	NONE	EL HGT	33.196	N30:56:11.58242 W090:30:25.29761	IGS08 (2006.7506)
2139	NONE	EL HGT	-19.371	N30:30:19.92334 W090:19:56.58138	IGS08 (2006.7533)
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° '' ''')	LONGITUDE (° '' ''')	REF. FRAME
covg	3-D	EL HGT	-5.932	N30:28:33.28953 W090:05:43.94752	IGS08 (2005.0000)
hamm	3-D	EL HGT	5.820	N30:30:47.07133 W090:28:03.45357	IGS08 (2005.0000)
msht	3-D	EL HGT	64.476	N31:19:39.16104 W089:20:10.65121	IGS08 (2005.0000)
mssc	3-D	EL HGT	-13.084	N30:22:30.81443 W089:36:49.92726	IGS08 (2005.0000)

Processing Preferences

Output Ref Frame: LET OPUS CHOOSE

Output Geoid Model: LET OPUS CHOOSE

Constraint Weights: LOOSE NORMAL TIGHT



The height components can still be constrained to either the ellipsoid or orthometric height.

Perform Adjustment

Adjustment Name (30 char max): final

Included Solutions		Available Solutions	
2006-274-A		[none]	
2006-275-A			
2006-275-B			
2006-276-A			
2006-276-B			
2006-277-A			

MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° '' ''')	LONGITUDE (° '' ''')	REF. FRAME
2123	NONE	EL HGT	-8.797	N30:35:23.61039 W090:29:12.73764	IGS08 (2006.7533)
2126	NONE	EL HGT	14.019	N30:58:00.80116 W089:48:34.33127	IGS08 (2006.7507)
2137	NONE	EL HGT	33.196	N30:56:11.58242 W090:30:25.29761	IGS08 (2006.7506)
2139	NONE	EL HGT	-19.371	N30:30:19.92334 W090:19:56.58138	IGS08 (2006.7533)

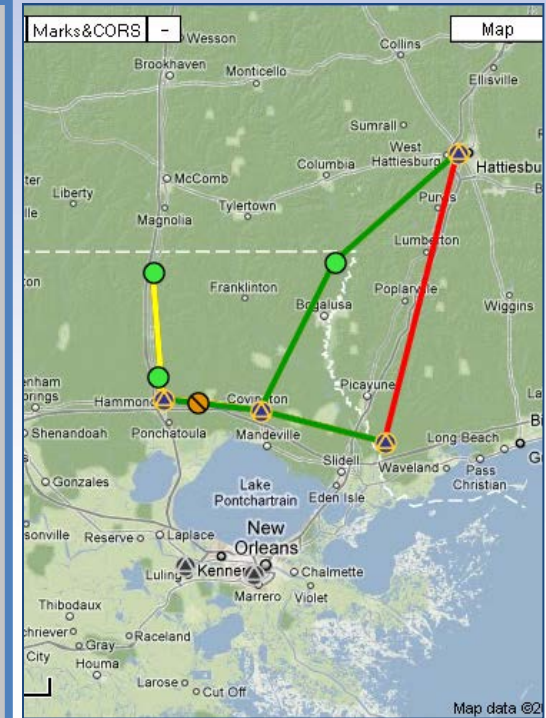
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° '' ''')	LONGITUDE (° '' ''')	REF. FRAME
covg	3-D	EL HGT	-5.932	N30:28:33.28953 W090:05:43.94752	IGS08 (2005.0000)
hamm	3-D	EL HGT	5.820	N30:30:47.07133 W090:28:03.45357	IGS08 (2005.0000)
msht	3-D	EL HGT	64.476	N31:19:39.16104 W089:20:10.65121	IGS08 (2005.0000)
mssc	3-D	EL HGT	-13.084	N30:22:30.81443 W089:36:49.92726	IGS08 (2005.0000)

Processing Preferences

Output Ref Frame: LET OPUS CHOOSE

Output Geoid Model: LET OPUS CHOOSE

Constraint Weights: LOOSE NORMAL TIGHT



All processing remains in the ITRF, but an alternate reference frame can be selected. If possible, the ITRF coordinates will be transformed into the output frame and reported, ...

Perform Adjustment

Adjustment Name (30 char max): final

Included Solutions		Available Solutions	
2006-274-A		[none]	
2006-275-A			
2006-275-B			
2006-276-A			
2006-276-B			
2006-277-A			

MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° ''')	LONGITUDE (° ''')	REF. FRAME
2123	NONE	EL HGT	-8.797	N30:35:23.61039 W090:29:12.73764	IGS08 (2006.7533)
2126	NONE	EL HGT	14.019	N30:58:00.80116 W089:48:34.33127	IGS08 (2006.7507)
2137	NONE	EL HGT	33.196	N30:56:11.58242 W090:30:25.29761	IGS08 (2006.7506)
2139	NONE	EL HGT	-19.371	N30:30:19.92334 W090:19:56.58138	IGS08 (2006.7533)

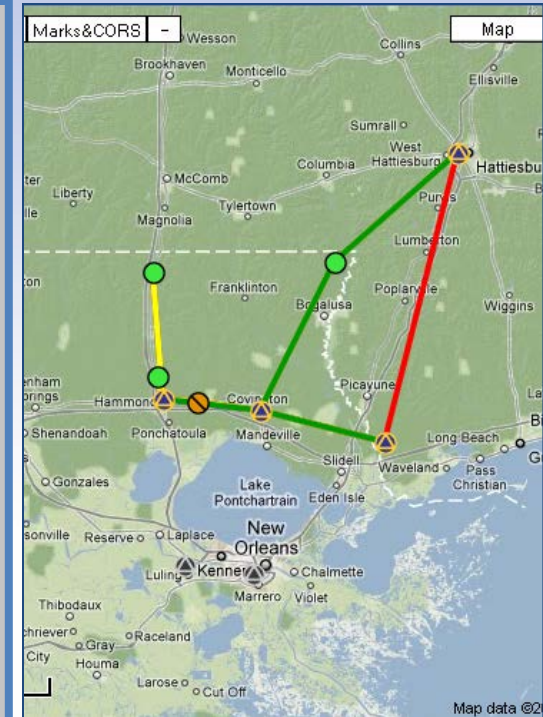
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° ''')	LONGITUDE (° ''')	REF. FRAME
covg	3-D	EL HGT	-5.932	N30:28:33.28953 W090:05:43.94752	IGS08 (2005.0000)
hamm	3-D	EL HGT	5.820	N30:30:47.07133 W090:28:03.45357	IGS08 (2005.0000)
msht	3-D	EL HGT	64.476	N31:19:39.16104 W089:20:10.65121	IGS08 (2005.0000)
mssc	3-D	EL HGT	-13.084	N30:22:30.81443 W089:36:49.92726	IGS08 (2005.0000)

Processing Preferences

Output Ref Frame: LET OPUS CHOOSE

Output Geoid Model: LET OPUS CHOOSE

Constraint Weights: LOOSE NORMAL TIGHT



... the geoid or hybrid-geoid model used to compute the orthometric heights given in the reports can be specified ...

Perform Adjustment

Adjustment Name (30 char max): final

Included Solutions		Available Solutions	
2006-274-A		[none]	
2006-275-A			
2006-275-B			
2006-276-A			
2006-276-B			
2006-277-A			

MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° ''')	LONGITUDE (° ''')	REF. FRAME
2123	NONE	EL HGT	-8.797	N30:35:23.61039 W090:29:12.73764	IGS08 (2006.7533)
2126	NONE	EL HGT	14.019	N30:58:00.80116 W089:48:34.33127	IGS08 (2006.7507)
2137	NONE	EL HGT	33.196	N30:56:11.58242 W090:30:25.29761	IGS08 (2006.7506)
2139	NONE	EL HGT	-19.371	N30:30:19.92334 W090:19:56.58138	IGS08 (2006.7533)

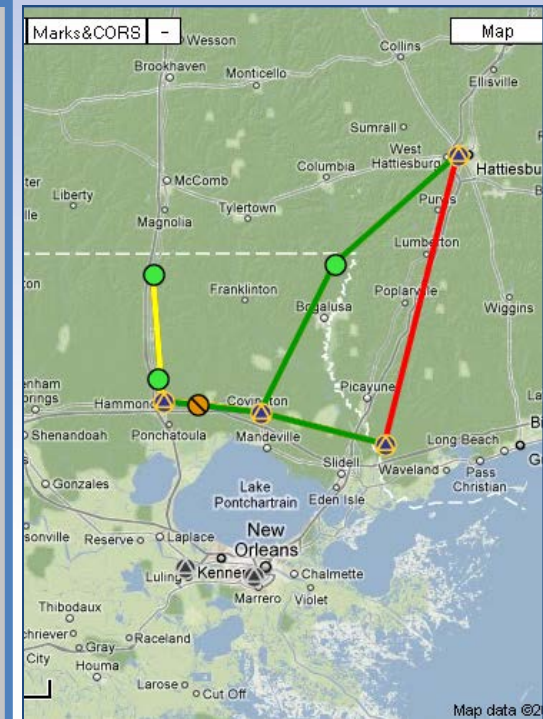
CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° ''')	LONGITUDE (° ''')	REF. FRAME
covg	3-D	EL HGT	-5.932	N30:28:33.28953 W090:05:43.94752	IGS08 (2005.0000)
hamm	3-D	EL HGT	5.820	N30:30:47.07133 W090:28:03.45357	IGS08 (2005.0000)
msht	3-D	EL HGT	64.476	N31:19:39.16104 W089:20:10.65121	IGS08 (2005.0000)
mssc	3-D	EL HGT	-13.084	N30:22:30.81443 W089:36:49.92726	IGS08 (2005.0000)

Processing Preferences

Output Ref Frame: LET OPUS CHOOSE

Output Geoid Model: LET OPUS CHOOSE

Constraint Weights: LOOSE NORMAL TIGHT



... and the constraint weight selected:
 LOOSE ≈ 1 m, NORMAL ≈ 1 cm, TIGHT ≈ 0.1 mm.

?
Perform Adjustment
X

Adjustment Name (30 char max):

Included Solutions

2006-274-A
 2006-275-A
 2006-275-B
 2006-276-A
 2006-276-B
 2006-277-A

Available Solutions

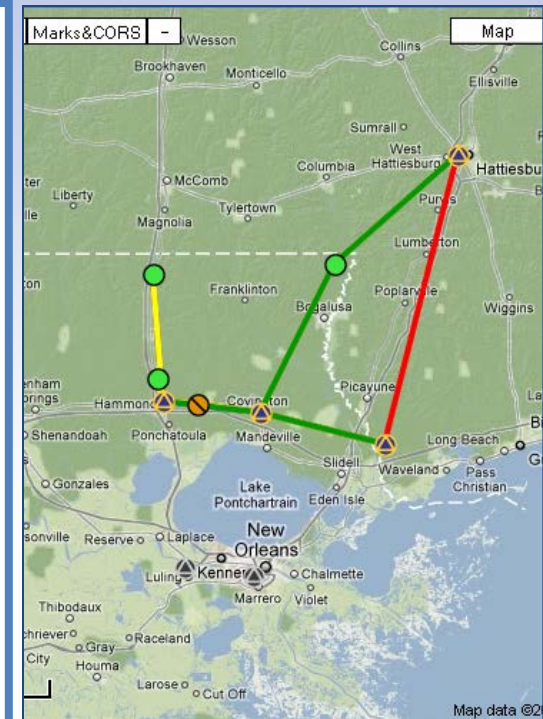
[none]

MARK	CONSTRAINT	HEIGHT (m)	LATITUDE (° '' ''')	LONGITUDE (° '' ''')	REF. FRAME
2123	● NONE	EL HGT	-8.797	N30:35:23.61039 W090:29:12.73764	IGS08 (2006.7533)
2126	● NONE	EL HGT	14.019	N30:58:00.80116 W089:48:34.33127	IGS08 (2006.7507)
2137	● NONE	EL HGT	33.196	N30:56:11.58242 W090:30:25.29761	IGS08 (2006.7506)
2139	● NONE	EL HGT	-19.371	N30:30:19.92334 W090:19:56.58138	IGS08 (2006.7533)

CORS	CONSTRAINT	HEIGHT (m)	LATITUDE (° '' ''')	LONGITUDE (° '' ''')	REF. FRAME
covg	▲ 3-D	EL HGT	-5.932	N30:28:33.28953 W090:05:43.94752	IGS08 (2005.0000)
hamm	▲ 3-D	EL HGT	5.820	N30:30:47.07133 W090:28:03.45357	IGS08 (2005.0000)
msht	▲ 3-D	EL HGT	64.476	N31:19:39.16104 W089:20:10.65121	IGS08 (2005.0000)
mssc	▲ 3-D	EL HGT	-13.084	N30:22:30.81443 W089:36:49.92726	IGS08 (2005.0000)

Processing Preferences

 Output Ref Frame:
 Output Geoid Model:
 Constraint Weights: LOOSE NORMAL TIGHT



When the selections are complete, click the “Perform Adjustment” button in the control bar at the top of the window.

OPUS Projects Processing Queue Confirmation

The network adjustment "final" was queued at 2013-05-21T13:10:34 UTC.
When the processing is completed, a solution summary and other reports will be emailed to mark.schenewerk@noaa.gov.

There are 0 processing requests in queue before yours.
The estimated time to processing completion is 1 minute.
Please be aware that this message was created when the request was queued and the time to completion will not be updated by refreshing this page.

6 solutions were selected containing 8 marks in total.
Of these marks, 4 marks were unconstrained and 4 marks were constrained.

Source Solutions: 2006-274-A, 2006-275-A, 2006-275-B, 2006-276-A,
2006-276-B, 2006-277-A

Unconstrained marks
2126, 2137, 2123, 2139

Constrained marks

covg 3-D	N30:28:33.28953	W090:05:43.94752	-5.932 m	EL HGT IGS08 (2005.0000)
hamm 3-D	N30:30:47.07133	W090:28:03.45357	5.820 m	EL HGT IGS08 (2005.0000)
msht 3-D	N31:19:39.16104	W089:20:10.65121	64.476 m	EL HGT IGS08 (2005.0000)
mssc 3-D	N30:22:30.81443	W089:36:49.92726	-13.084 m	EL HGT IGS08 (2005.0000)

The network design, observation elevation cut-off and

At that time, the selections are checked, inserted in the processing queue and a printable summary is created. The adjustment rarely takes more than a few minutes once it reaches the top of the queue.

NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT

=====

All coordinate accuracies reported here are 1 times the formal uncertainties from the solution. For additional information:
dev.ngs.noaa.gov/OPUS/Using_OPUS-Projects.html#accuracy

These positions were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

```
SUBMITTED BY:                your.name@your.address
SOLUTION FILE NAME:          network-final.sum
SOLUTION SOFTWARE:           GPSCOM(1210.24)
SOLUTION DATE:                2013-05-21T09:13:11 UTC
STANDARD ERROR OF UNIT WEIGHT: 0.773
TOTAL NUMBER OF OBSERVATIONS: 224036
TOTAL NUMBER OF MARKS:       8
NUMBER OF CONSTRAINED MARKS: 4

START TIME:                   2006-10-01T00:00:00 GPS
STOP TIME:                     2006-10-04T23:59:30 GPS
FREQUENCY:                     L1-ONLY TO ION-FREE [BY BASELINE LENGTH]
OBSERVATION INTERVAL:         30 s
ELEVATION CUTOFF:             15 deg
TROPIC INTERVAL:              7200 s [PIECE-WISE LINEAR PARAMETERIZATION]
DD CORRELATIONS:              ON
```

INCLUDED SOLUTION	RMS	SOFTWARE	RUN DATE
-------------------	-----	----------	----------

When the adjustment is completed, an email is sent. The email contains a summary of the results and has full reports attached.

5) 2006-276 B	1.9 cm	page5(1301.08)	2013-08-07T14:56 UTC
6) 2006-277 A	1.7 cm	page5(1301.08)	2013-08-07T14:57 UTC

NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT
 =====

All coordinate accuracies reported here are 1 times the formal uncertainties from the solution. For additional information:
dev.ngs.noaa.gov/OPUS/Using_OPUS-Projects.html#accuracy

These positions were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

SUBMITTED BY: your.name@your.address
 SOLUTION FILE NAME: network-final.sum
 SOLUTION SOFTWARE: GPSCOM(1210.24)
 SOLUTION DATE: 2013-05-21T09:13:11 UTC
 STANDARD ERROR OF UNIT WEIGHT: 0.773
 TOTAL NUMBER OF OBSERVATIONS: 224036
 TOTAL NUMBER OF MARKS: 8
 NUMBER OF CONSTRAINED MARKS: 4

START TIME: 2006-10-01T00:00:00 GPS
 STOP TIME: 2006-10-04T23:59:30 GPS
 FREQUENCY: L1-ONLY TO ION-FREE [BY BASELINE LENGTH]
 OBSERVATION INTERVAL: 30 s
 ELEVATION CUTOFF: 15 deg
 TROPO INTERVAL: 7200 s [PIECE-WISE LINEAR PARAMETERIZATION]
 DD CORRELATIONS: ON

INCLUDED SOLUTION	RMS	SOFTWARE	RUN DATE
-------------------	-----	----------	----------

Evaluating network adjustments is very similar to evaluation session solutions.

5) 2006-276 B	1.9 cm	page5(1301.08)	2013-08-07T14:56 UTC
6) 2006-277 A	1.7 cm	page5(1301.08)	2013-08-07T14:57 UTC

NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT

=====

All coordinate accuracies reported here are 1 times the formal

First, verify the information you entered.

These positions were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

```
SUBMITTED BY:                your.name@your.address
SOLUTION FILE NAME:          network-final.sum
SOLUTION SOFTWARE:           GPSCOM(1210.24)
SOLUTION DATE:               2013-05-21T09:13:11 UTC
STANDARD ERROR OF UNIT WEIGHT: 0.773
TOTAL NUMBER OF OBSERVATIONS: 224036
TOTAL NUMBER OF MARKS:       8
NUMBER OF CONSTRAINED MARKS: 4

START TIME:                  2006-10-01T00:00:00 GPS
STOP TIME:                   2006-10-04T23:59:30 GPS
FREQUENCY:                   L1-ONLY TO ION-FREE [BY BASELINE LENGTH]
OBSERVATION INTERVAL:        30 s
ELEVATION CUTOFF:            15 deg
TROPIC INTERVAL:             7200 s [PIECE-WISE LINEAR PARAMETERIZATION]
DD CORRELATIONS:             ON
```

INCLUDED SOLUTION	RMS	SOFTWARE	RUN DATE
1) 2006-274 A	1.2 cm	page5(1301.08)	2013-08-07T12:40 UTC
2) 2006-275 A	1.1 cm	page5(1301.08)	2013-08-07T14:51 UTC
3) 2006-275 B	1.5 cm	page5(1301.08)	2013-08-07T14:52 UTC
4) 2006-276 A	1.6 cm	page5(1301.08)	2013-08-07T14:54 UTC
5) 2006-276 B	1.9 cm	page5(1301.08)	2013-08-07T14:56 UTC
6) 2006-277 A	1.7 cm	page5(1301.08)	2013-08-07T14:57 UTC

NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT
 =====

All coordinate accuracies reported here are 1 times the formal

Next, the general solution information.

These positions were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

```
SUBMITTED BY:          your.name@your.address
SOLUTION FILE NAME:    network-final.sum
SOLUTION SOFTWARE:     GPSCOM(1210.24)
SOLUTION DATE:         2013-05-21T09:13:11 UTC

STANDARD ERROR OF UNIT WEIGHT: 0.773
TOTAL NUMBER OF OBSERVATIONS: 224036
TOTAL NUMBER OF MARKS:      8
NUMBER OF CONSTRAINED MARKS: 4

START TIME:            2006-10-01T00:00:00 GPS
STOP TIME:             2006-10-04T23:59:30 GPS
FREQUENCY:             L1-ONLY TO ION-FREE [BY BASELINE LENGTH]
OBSERVATION INTERVAL: 30 s
ELEVATION CUTOFF:      15 deg
TROPIC INTERVAL:       7200 s [PIECE-WISE LINEAR PARAMETERIZATION]
DD CORRELATIONS:       ON
```

INCLUDED SOLUTION	RMS	SOFTWARE	RUN DATE
1) 2006-274 A	1.2 cm	page5(1301.08)	2013-08-07T12:40 UTC
2) 2006-275 A	1.1 cm	page5(1301.08)	2013-08-07T14:51 UTC
3) 2006-275 B	1.5 cm	page5(1301.08)	2013-08-07T14:52 UTC
4) 2006-276 A	1.6 cm	page5(1301.08)	2013-08-07T14:54 UTC
5) 2006-276 B	1.9 cm	page5(1301.08)	2013-08-07T14:56 UTC
6) 2006-277 A	1.7 cm	page5(1301.08)	2013-08-07T14:57 UTC

hamm-2126	80.640 km	1.0 cm	2471	2.3%	100.0%	2
msht-mssc	108.867 km	1.9 cm	15604	5.2%	93.4%	5

Finally, the individual mark results.

MARK: 2123 (2123 1)

```

REF FRAME:      NAD_83(2011) (2010.0000)          IGS08 (2006.7552)
X:              -46694.793 m    0.002 m          -46695.473 m    0.002 m
Y:              -5495064.269 m  0.002 m          -5495062.776 m  0.002 m
Z:              3226832.869 m   0.003 m          3226832.701 m   0.003 m
LAT:            30 35 23.59014      0.003 m          30 35 23.61003      0.003 m
E LON:          269 30 47.28881      0.002 m          269 30 47.26283      0.002 m
W LON:          90 29 12.71119       0.002 m          90 29 12.73717       0.002 m
EL HGT:         -7.427 m            0.002 m          -8.793 m            0.002 m
ORTHO HGT:      19.630 m            0.012 m  (H = h - N WHERE N = GEOID12A HGT)
    
```

	UTM COORDINATES	STATE PLANE COORDINATES
	UTM (Zone 15)	SPC (1702 LA S)
NORTHING (Y)	3386842.988 m	231955.819 m
EASTING (X)	740977.315 m	1081182.819 m
CONVERGENCE	1.27952553 deg	0.42324530 deg
POINT SCALE	1.00031642	0.99997843
COMBINED FACTOR	1.00031759	0.99997960

US NATIONAL GRID DESIGNATOR: 15RYP4097786842 (NAD 83)

MARK: 2126 (2126 1)

```

REF FRAME:      NAD_83(2011) (2010.0000)          IGS08 (2006.7523)
    
```

Results From **network-final**

Controls

MARKS: ● meet preferences ● do not meet preferences ⊗ are not included ⊗ have error

CORS: ▲ meet preferences ▲ do not meet preferences ▲ are not included

Baselines: —————

LEGEND MARKS

- 2123
- 2126
- 2137
- 2139

Map Satellite Terrain

Amite City Harmon Hammond Cowton

2006-274 2006-275 2006-275 2006-276 2006-276 2006-277 network final

MARKS A A B A B A MARKS

LEGEND CORS

- ▲ covg
- ▲ dstr
- ▲ hamm
- ▲ msht
- ▲ mssc
- ▲ nola

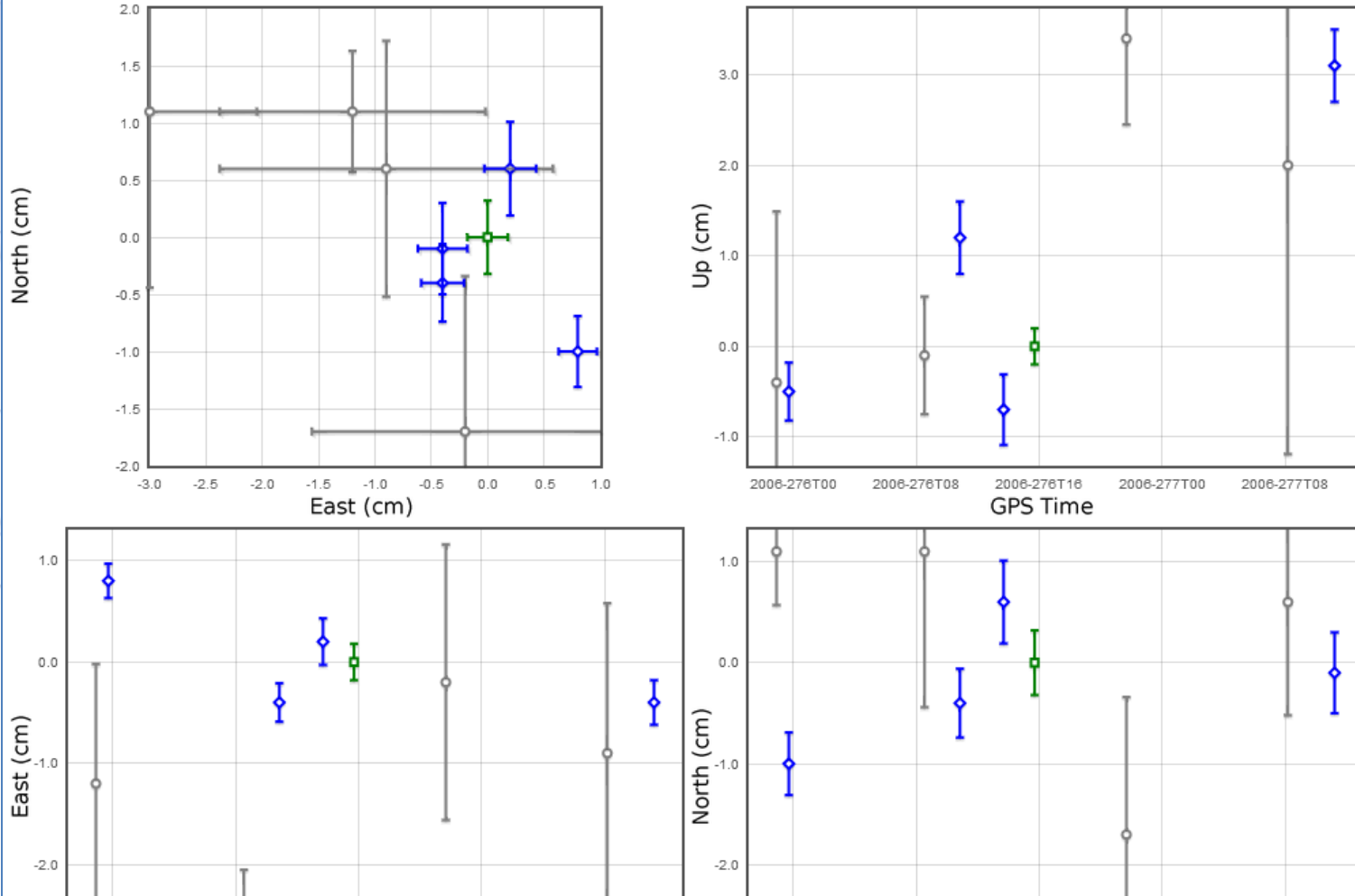
Add MARKS Add CORS

Returning to the manager's page, the network adjustment is now available for review .

MARK 2123 Processing Results Plots

Scale uncertainties by 1.0x (68.3%) Show preferences network session OPUS published.

The "zero" point coordinates, N30:35:23.61003, W090:29:12.73719, -8.793 m el. height, are the mean of all network adjustments.



And the network adjustment results now appear with the other solutions in the individual mark's plots and tables.

The screenshot displays the NOAA's National Geodetic Survey software interface. The main window shows a map with a project named "my project @ 2006-10-01" selected. A dialog box is open, displaying the following text:

A request to delete the project "my project @ 2006-10-01" has been initiated. For data-safety, the following steps will need to be completed:

- (1) You will need to confirm this action here.
- (2) The OPUS-Projects team will follow-up by sending an email to the project manager requesting a second confirmation. This email will include an option to request a copy of the project on DVD.
- (3) Only if steps (1) and (2) confirm this action will the project be deleted.

Click "OK" to continue to step (2) or "Cancel" to stop this process now.

The dialog box has "OK" and "Cancel" buttons at the bottom. The background interface includes a "Results From" dropdown set to "network-final", a "Controls" panel on the left with buttons for "Delete Project", "Send Email", "Review and Publish", "Set up Adjustment", "Show File", "Solutions", "Serfil", "Design", "Project List", and "Preferences". The top right shows a "LEGEND" with "MARKS" and "CORS" sections. The "MARKS" section lists 2123, 2126, 2137, and 2139. The "CORS" section lists covg, dstr, hamm, msht, mssc, and nola. The map shows a terrain view with a scale bar of 5 km and a "Map data ©2013 Google - Terms of Use" notice.

The last step is always to delete your project. You can keep your project on-line for as long as needed, but be courteous and “delete when complete.”

OPUS Projects Manager Training

Step 4 : Network Adjustment

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