

# MobileMapper Office Post-Processing Controlling Reference Frames

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#### Summary

MobileMapper Office supports automatic downloading of CORS data for Post-Processing. The CORS station coordinates are seeded with RTF2000 current epoch framed coordinates. In addition, the distributed station lists have not been updated with new stations.

This document describes this issue in detail and introduces an automated tool to update the complete station list.

### Details

When you use the automated 'Add Reference Raw Data from Web' feature in Mobile Mapper Office 4.6:



MMOffice will automatically search for nearby stations:

#	File		Ste	Time	Duration	
1	001008102900.	grw	0010	10/29/2008 4:09:29 PM	00:22:33	,
)Se )Se	arch up to 3 arch up to 10	🗘 sta	tions			Cancel
ady and neck	3 stations stations in the list b	elow, ther	click Down	load button		
sady sund neck Static	3 stations stations in the list b	elow, ther	click Down	load button Server	Distance	Matching rover files #
sady sund neck Static	3 stations stations in the list b on Description rbut Red Butte	elow, ther on . UT	click Down	load button Server NGS	Distance 4 km	Matching rover files #
eady ound heck Static	3 stations stations in the list b on Descriptic rbut Red Butte, slcu Salt Lake	elow, ther m . UT City, UT	click Down	NGS NGS	Distance 4 km 9 km	Matching rover files #

Automatically download data from the NGS FTP Server and place the data in your job:



		¥	····	······ ~	
Fi	le Name	Start Time	End Time	Data	Time Bar
	001000102500.grW	10/29/2008 4:09:29 PM	10/29/2008 4:32:06 PM		
	rbut3033.08o	10/29/2008 4:04:00 PM	10/29/2008 4:37:00 PM	L1 L2 GPS	
<					
Re	ady				

Unfortunately the CORS station is loaded with ITRF00 Current epoch coordinates:

al	Properties	
	Station	rbut
	Longitude	111° 48' 31.53361" W
	Latitude	40° 46' 51.82883" N
2	Height	1667.743

You can verify the coordinates for any of the NGS CORS sites by visiting:

## http://www.ngs.noaa.gov

Click on the CORS link on the left and entering a station abbreviation:



Then click on 'Enter SiteID':



Click 'Coordinates':



	ngs.noaa.gov/cgi-cors/corsage_2.prl	
RBUT RED BUTTE Red Butte, UT USA	National Geodeti	
Site operated by: <u>UNAVPS</u>	Please choose the coordinate you want to use.	
<u>Coordinates</u> <u>SiteLog</u> <u>Photographs</u> <u>Data Availability</u>	New Coordinates: In IGS08 epoch 2005.00 and NAD 83(2 These coordinates were computed using absolute <u>antenna calibrations</u>	
<u>Standard Files</u> <u>Custom Files (UFCORS)</u> <u>Time Series (short-term)</u>	Position and Velocity Data Sheet for Position at ARP Data Sheet for Position at ARP and, if available, MON (monument)	

Finally click on the `IGS08 / NAD83 2011 EPOCH 2010' Position and Velocity (as shown by the red arrow above.)



#### Data Sheet

MobileMapper Office

Roll down on the coordinate sheet until you reach the 'L1 Phase Center' section. Users in the United States of America typically prefer coordinates framed in NAD83 as shown by the RED arrow. MobileMapper Office uses current epoch ITRF2000 framed results which are close to the IGS08 position (they are not 3



exactly the same in this example because MMOffice has 8 years of velocity applied to the EPOCH 2005.0 framed IGS08 coordinates.

There is about 1.2 meters of horizontal offset and 0.82 meters of elevation offset between the MMOffice coordinates and NAD83. This offset is translated to your observations when they are post-processed. Thus every post-processed feature will be offset by 1.2 meters horizontal and 0.82 meters height if you don't fix the base coordinate.

It is easy to fix this problem by typing in the correct coordinates for the CORS station after you download data. But this will be tiresome as it will have to be done every time a station set is downloaded.

I have placed an updated XML file at this location:

http://ashgps.com/ms/MMOCORSUpdater/NGS.stations.xml

which you can download and place on your machine in the proper folder:

64-bit: C:\Program Files (x86)\Common Files\Ashtech\CORS

32-bit: C:\Program Files\Common Files\Ashtech\CORS

Since the XML file needs to be updated every time a CORS station coordinates are modified, or a new station is added to the array, I am also supplying a small tool that quickly builds a new NGS.stations.xml file from a folder containing the NGS station location files.

You can download this tool with this link:

http://ashgps.com/ms/MMOCORSUpdater/MMFUpdateCORS.exe

To use the tool, download the tool and place it in an empty folder on your machine.

- 1. Close MobileMapper Office if it is open.
- 2. Run the tool as an administrator by right-clicking on the file, then choosing 'Run as Administrator':



The update tool will look like this:



P	MMF CORS Update (Ver: 2014.10.1005) –	×
Folder to Parse	C:\Users\Mark\Documents\MMO_CORS	
NGS Location	www.ngs.noaa.gov/cors/coord_08	
	1. FTP Sites from NGS 2. Process Files 3. Register XML Result	
<pre>Instructions: 1. Use an external FT ftp://www.ngs.no to the 'Folder to Par 2. Click on the '2. F 3. Click on the '3. R</pre>	P clinet (like FileZIlla) to download all of the current station files from the NGS server aa.gov/cors/coord/coord_08 se' shown above on your computer. rocess Files' buttons to extract the correct locations. egister XML Result' button to move the file.	^
You may/probably will m To run as administrator	eed to run this tool as an administrator for the '3. Register XML Result' button to be succesful. , close the program, right-click on the program and choose 'Run as Administrator.'	
<		>

3. Use an external FTP client like FileZilla to move all of the text files in the NGS ftp folder:

ftp://www.ngs.noaa.gov/cors/coord/coord\_08

into the folder listed under 'Folder to Parse'.

4. Click on button '2. Process File'. The tool will extract the NAD83 2011 coordinates for all of the CORS stations:

Folder to Parse NGS Location	C:\Users\Mark\Documents\MMO_CORS www.ngs.noaa.gov/cors/coord/coord_08		
NGS Location	www.ngs.noaa.gov/cors/coord/coord_08		
	1. FTP Sites from NGS 2. Process Files	3. Register XML Result	
zme1_08.coord.txt	zmel Memphis Waas 1, TENNESSEE	4071.677, -5226190.731, 3644028.562	
<pre>smp1_08.coord.txt</pre>	zmp1 Minneapolis Waas, MINNESOTA	-249977.551, -4539298.828, 4458955.115	
any1_08.coord.txt	znyl New York Waas 1, NEW YORK	1406145.458, -4627345.429, 4144322.105	
soal_08.coord.txt	zoal Oakland 1, CALIFORNIA	-2684436.008, -4293338.760, 3865351.851	
<pre>soa2_08.coord.txt</pre>	zoa2 Oakland 2, CALIFORNIA	-2684432.994, -4293342.828, 3865349.419	•
ob1_08.coord.txt	zob1 Cleveland Waas 1, OHIO	650771.001, -4754717.072, 4187420.825	
sole_08.coord.txt	zole Zolezzi Coop, NEVADA	-2448970.362, -4284229.148, 4029451.287	,
sse1_08.coord.txt	zsel Seattle Waas 1, WASHINGTON	-2308929.407, -3668170.861, 4663526.443	3
ssu1_08.coord.txt	zsul San Juan Waas 1, PUERTO RICO	2462590.079, -5529373.333, 2003724.779	
ssu4_08.coord.txt	zsu4 San Juan Waas 4, PUERTO RICO	2462590.115, -5529373.933, 2003724.603	
stl4_08.coord.txt	ztl4 Atlanta Waas 4, GEORGIA	529841.186, -5305250.298, 3489342.994	
ND: Process C:\Users\M	[ark\Documents\MMO_CORS\		
2,454 CORS stations add	ed from 2,560 files. 106 files skipped.		
<			>
			_

5. Finally press button '3. Register XML Result':



r	www.cons.opdate (ver.	2014.10.10.1003)	_
Folder to Parse	C:\Users\Mark\Documents\MMO_CORS		
NGS Location	www.ngs.noaa.gov/cors/coord_08		
	1. FTP Sites from NGS 2. Process Files	3. Register XML Result	
zoa2_08.coord.txt	zoa2 Oakland 2, CALIFORNIA	-2684432.994, -4293342.828, 3865349	.419 ^
zob1_08.coord.txt	zob1 Cleveland Waas 1, OHIO	650771.001, -4754717.072, 4187420.8	25
zole_08.coord.txt	zole Zolezzi Coop, NEVADA	-2448970.362, -4284229.148, 4029451	.287
zse1_08.coord.txt	zsel Seattle Waas 1, WASHINGTON	-2308929.407, -3668170.861, 4663526	.443
zsu1_08.coord.txt	zsul San Juan Waas 1, PUERTO RICO	2462590.079, -5529373.333, 2003724.	779
zsu4_08.coord.txt	zsu4 San Juan Waas 4, PUERTO RICO	2462590.115, -5529373.933, 2003724.	603
ztl4_08.coord.txt	ztl4 Atlanta Waas 4, GEORGIA	529841.186, -5305250.298, 3489342.9	94
END: Process C:\Users\M	ark\Documents\MMO_CORS\		
2,454 CORS stations add	ed from 2,560 files. 106 files skipped.		
*********** Register Re	sult ***********		
Rename C:\Program Files	(x86)\Common Files\Ashtech\CORS\NGS.station	s.xml to C:\Program Files (x86)\Common Files\Ash	tech\CORS
Copy C:\Users\Mark\Docu	ments\MMO_CORS\NGS.stations.xml to C:\Program	m Files (x86)\Common Files\Ashtech\CORS\NGS.stat:	ions.xml
Registration of new XML	file was succesful.		_
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The update tool will note the successful file copy.

The next time you download CORS data in MobileMapper Office, the base station coordinates will be NAD83 framed.