

## MobileMapper Office Tech Note: Adding a new CORS Network as a Provider of Reference Station Data

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MobileMapper Office (MMO) is equipped with a software module that allows you to automatically download Continuously Operating Reference Station (CORS) data for post-processed differential correction. With your job displayed on the map screen you can click on the Show CORS button to display the location of most of the stations around the world.



Double-clicking on an individual site name in the map display area opens up MMO's RINEX Download window where you can click on the Download button to retrieve the reference station files corresponding to the time during which you recorded your rover data.

The CORS sites shown on the map display area are part of the following CORS networks:

- International GPS Service
- National Geodetic Survey (United States)
- Réseau GPS Permanent (France)
- UNAVCO (United States)
- SOPAC (United States)

It is possible to add other networks and automatically download their data also. There are three requirements. First, the reference station data must be available as individual files

listed on an ftp site. MMO cannot access data available from Worldwide Web pages, although it is possible to manually download such files for post-processing. Second, the data files must be named according to certain conventions. Third, the reference station data must be in RINEX 1 format. Although MMO can use either RINEX 1 or RINEX 2 data for differential correction, the RINEX Download utility currently supports only RINEX 1.

For example, month codes must comprise either two digits or three characters. A complete listing is as follows. Note that the codes are enclosed in brackets. When inputting file name conventions into MMO, you must type in both the brackets and the letters between the brackets exactly as they are listed. Note that the codes are case-sensitive when you type them into MMO because the path names on most ftp sites are case-sensitive. The permissible ranges are indicated in parentheses.

[d]	1-digit day of week (0-6; Sunday is 0)
[dd]	2-digit day of month (00-31)
[ddd]	3-digit day of year (001-366)
[h]	1-character RINEX file hour (a-x, where a=00 GMT and x=23 GMT)
[hh]	2-digit hours (00-23)
[mm]	2-digit minutes (00-59)
[MM]	2-digit month (01-12)
[MO]	2-character Month (JA-DE)
[Mon]	3-character Month (Jan-Dec)
[S]	1-character site ID (upper case)
[ssss]	4-character site ID (lower case)
[SSSS]	4-character site ID (upper case)
[wwwww]	4-digit GPS week number (e.g., 1047)
[y]	1-digit year (0-9)
[yy]	2-digit year (00-99)
[yyyy]	4-digit year (e.g., 2005)

CORS data providers describe their file naming rules in a file posted to the ftp site. It is highly recommended that you read this file before you add a CORS provider to MMO. An example of such a file is located at [ftp://igs.ifag.de/A\\_INFO.txt](ftp://igs.ifag.de/A_INFO.txt).

To illustrate the process of adding a CORS data provider to the list of supported providers, we will use the EUREF Network as an example.

You first want to determine the naming convention used by EUREF. You can find this by going to <http://www.epncb.oma.be/trackingnetwork/siteinfo.html> and clicking on the site you are interested in. For example, if you click on TUC2, you go to a page with information about where you can download.

The screenshot shows the EUREF Permanent Network website. At the top, there is the EUREF logo and the text "EUREF HOME". To the right is the "EUREF Permanent Network" title and the "EPN CB HOME" logo. Below this are five navigation tabs: "ORGANISATION", "TRACKING NETWORK", "DATA & PRODUCTS", "NEWS & MAIL", and "FTP & WEB ACCESS". The "TRACKING NETWORK" tab is selected, and the breadcrumb trail is "TRACKING NETWORK > STATIONS > SITE INFORMATION > TUC2\_12617M003".

Station included in the EUREF network since GPSweek No 1294.

- Station logs
  - [tuc2\\_20050317.log](#) (current)
  - (previous ones)
- Daily data available at


1=24H	05-088	05-087	05-086	05-085	05-084	05-083	05-082	05-081	05-080	05-079	05-078	05-077
ASI	1	1	1	.	1	1	1	1	1	1	1	1

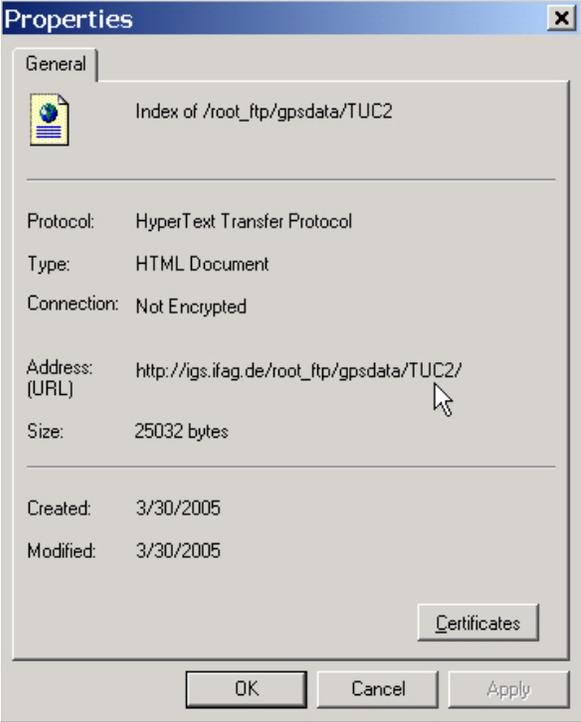
  

1=12H	05-088	05-087	05-086	05-085	05-084	05-083	05-082	05-081	05-080	05-079	05-078	05-077
BKG (EPN RDC)	1	1	1	3	1	1	1	1	1	1	1	1

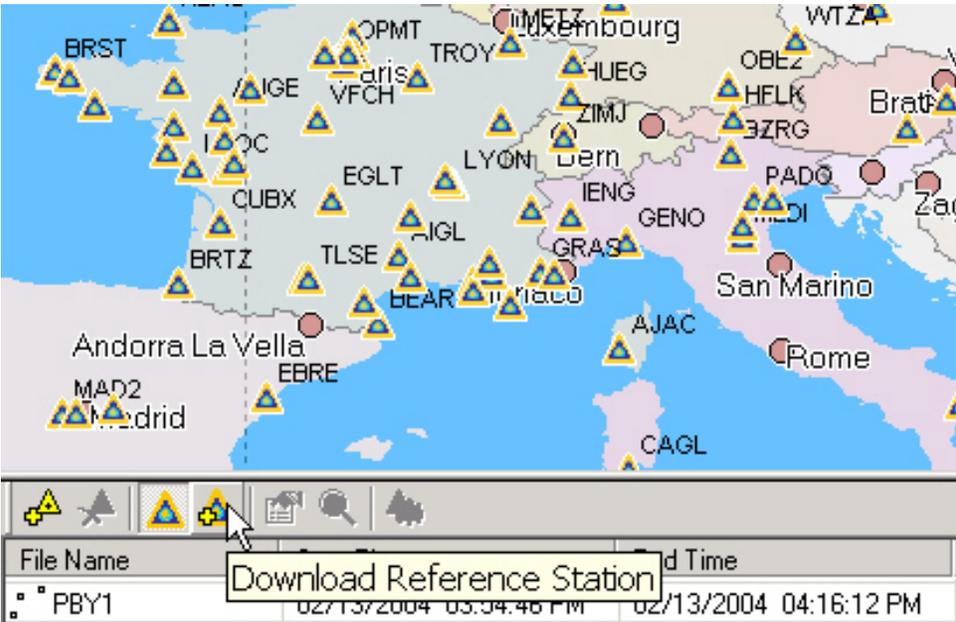
  

1=24H	05-088	05-087	05-086	05-085	05-084	05-083	05-082	05-081	05-080	05-079	05-078	05-077
QLG	1	1	1	.	1	1	1	1	1	1	1	1

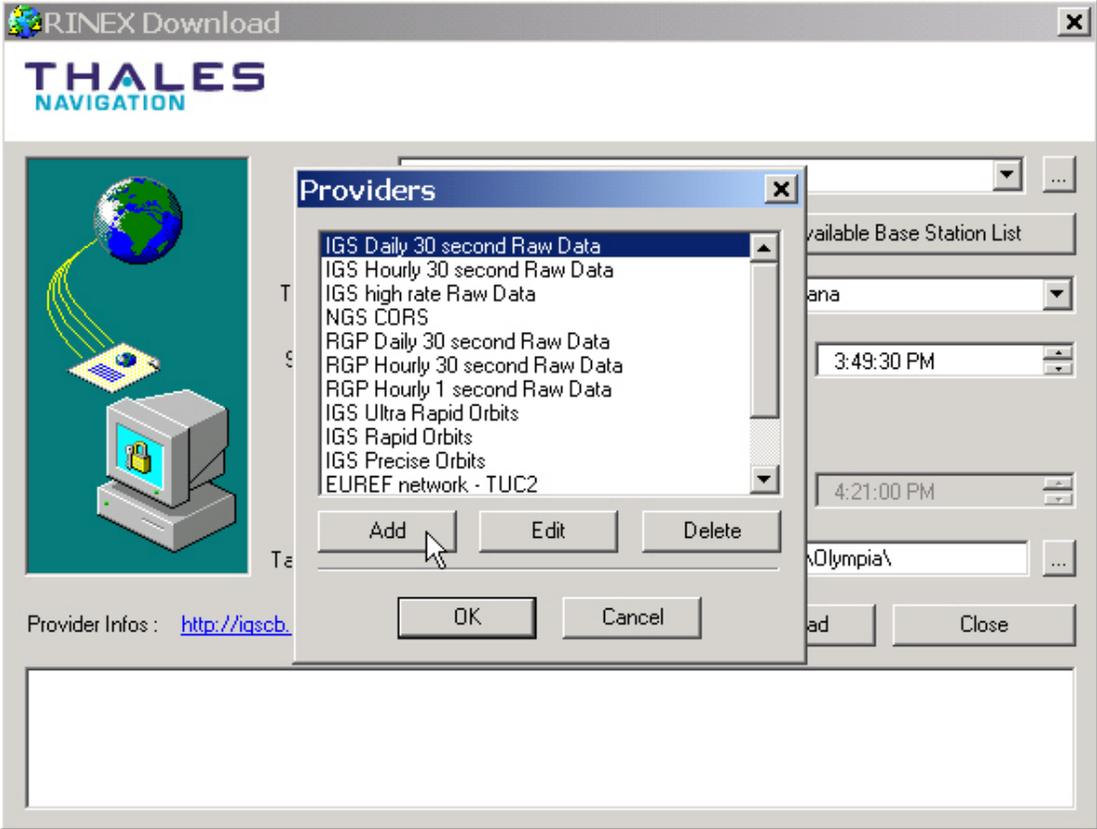
By clicking on the links, you can see that you can download data from the TUC2 site at the following ftp site: <ftp.igs.ifag.de> (Internet address = 141.74.254.123). By going to this site manually with an ftp client or your browser, you can see that the naming convention for the observation files is [ddd]0.[yy]D.Z and for the navigation files is = IFAG[ddd]0.[yy]N.Z. If you right-click on the ftp page and select Properties, you can see that these files are located in the /gpsdata/TUC2/ directory.



Once you have determined the naming convention and location of the CORS files, go back to MMO and click on the Download Reference Station icon seen below:



You should go to the RINEX Download window and click on the three dots to the right of the "Provider" field at the top of the screen. Then click on Add button:



You will see the Provider properties window and should fill it out for the data provider you wish to use. The example below describes the TUC2 station on Crete.

The screenshot shows a dialog box titled "Provider" with the following fields and options:

- Name: EUREF network - TUC2
- Host: igs.ifag.de
- Data Type: Compact RINEX Raw Data (dropdown menu)
- Time Span: 1440
- OBS Files: gpsdata/TUC2/TUC2[ddd]0.[yy]D.Z (with a "+" button)
- NAV Files: gpsdata/NAV/IFAG[ddd]0.[yy]N.Z (with a "+" button)
- Comment: 24 h files (with up/down arrow buttons)
- More Info: <http://www.epncb.oma.be>
- Public Access (selected radio button)
- Restricted Access (unselected radio button)
- OK button (with a mouse cursor over it)
- Cancel button

After you fill out the Provider info dialog box, click on OK. Then you must also type in the station name on the RINEX Download page (see below). You can then click on the download button and MMO will download the required files.

**RINEX Download**

**THALES NAVIGATION**

Provider : EUREF network - TUC2

Station : TUC2

Time Zone : (GMT-08:00) Pacific Time (US & Canada); Tijuana

Start Date : 3/ 7/2005 Start Time : 10:46:00 AM

Duration : 00:20

End Date : 3/ 7/2005 End Time : 11:06:00 AM

Target Path : C:\Program Files\MobileMapper Office\DOCS\NevadaBLM\

Provider Infos : <http://www.epncb.oma.be>