NAME

mbm_dslnavfix – Translate WHOI DSL AMS-120 navigation from UTM eastings and northings to longitude and latitude.

VERSION

Version 5.0

SYNOPSIS

mbm_dslnavfix –F*navformat* **–I***infile* **–J***utm_zone* **–O***outfile* [**–D***decimate* **–E***ellipsoid* **–H –V**]

DESCRIPTION

mbm_dslnavfix is a macro to translate WHOI DSL AMS-120 navigation from UTM eastings and northings to longitude and latitude. The WHOI DSL group typically provides processed AMS-120 navigation is files separate from the bathymetry and sidescan data. Moreover, the navigation is generally sampled less frequently than the sonar pings, and is reported in UTM easting and northing meters. The **mbm_dslnavfix** macro is used to translate the eastings and northings into the geographic coordinates (longitude and latitude) used by MB-System programs. The program **mbprocess** can be used to merge the translated navigation in with the bathymetry and sidescan.

The DSL AMS-120 bathymetry and sidescan are provided in either a set of parallel files supported as **MB-System** format 111 (the old scheme) or in the OIC single file format supported as **MB-System** format 141 (the new scheme). In either case, we recommend translating the data to similar but enhanced formats 112 and 142, respectively, to ease processing.

We recommend the following procedure when processing WHOI DSL AMS-120 data with MB-System:

```
  1) Concatenate all of the processed navigation
     files into a single file.
          cat *.nav > cruise.rnav
  2) Translate the DSL UTM navigation into geographic
     coordinates. In the "old" case the navigation is
in a format designated by –F1 and
in the new case by –F2. Note that
you must know the UTM zone used – here we assume
the zone is +27.
          mbm_dslnavfix –Icruise.rnav \
                  -Ocruise.mrg2 –F1 –J27 –V
  3) Copy the bathymetry and sidescan data in each
     file from format 111 to format 112 or from
format 141 to 142.
          mbcopy –F111/112 \
                  -IDSL120.940630_1100.bat.dat \
                  -ODSL120.940630_1100.mb112
  4) Set the translated navigation to be merged with
each of the format 112 or 142 files using
mbset:
          mbset –I DSL120.940630_1100.mb112 \
                  -P NAVFORMAT:2 \
                  -P NAVFILE:cruise.mrg2 \
                  -V
  4) Process the data using mbprocess,
producing a processed file called
DSL120.940630_1100p.mb112 with longitude and
latitude navigation.
```

mbprocess –I DSL120.940630_1100.mb112

AUTHORSHIP

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OPTIONS

–D *decimate*
This option allows the user to decimate the input navigation. The *decimate* value represents the decimation factor. The default is *decimate* = 1, or no decimation.

–E *ellipsoid*
This option sets the ellipsoid used in the UTM projection. The choices are:

WGS-84	1984 World Geodetic System
GRS-80	1980 International Geodetic Reference System
WGS-72	1972 World Geodetic System
Australian	1965 Used down under
Krasovsky	1940 Used in the Soviet Union
International	1924 Worldwide use
Hayford-1909	1909 Same as the International 1924
Clarke-1880	1880 Most of Africa, France
Clarke-1866	1866 North America, the Phillipines
Airy	1830 Great Britain
Bessel	1841 Central Europe, Chile, Indonesia
Everest	1830 India, Burma, Pakistan, etc.
Sphere	1980 The mean radius in GRS-80

Default: Clarke-1866 as per USGS standard.

–F *navformat*
Sets the input navigation format. The available formats include the old, pre-OIC format (**–F***1*), the new, OIC associated formats (**–F***2*), and navigation obtained using **mblist** with the **–OtXY** option.

–H This "help" flag cause the program to print out a description of its operation and then exit immediately.

–I *filename*
Sets the input WHOI DSL AMS-120 navigation filename.

–J *utm_zone*
Sets the UTM zone used for the translation. The UTM zones are 6 degrees wide in longitude and begin with zone 1 extending from 180 W to 174 W, zone 2 extending from 174 W to 168 W, and so on through zone 60. Negative zone values are used for the Southern Hemisphere.

–O *outfile*
Sets the output filename for the translated navigation.

–V Causes **mbm_plot** to operate in "verbose" mode so that it outputs more information than usual.

EXAMPLES

Suppose we have obtained a WHOI DSL navigation file as outlined above and execute the macro as suggested:

```
mbm_dslnavfix –Icruise.rnav \
        -Ocruise.mrg2 –F1 –J27 –V
```

The output will appear as follows:

```
Running mbm_dslnavfix...

Program Status:
--------------

  Input DSL navigation format:   1
  Input DSL navigation file:     dsl.nav
  Output navigation file:        dsl.mrg2
  Temporary projected nav file:  tmp_proj_8044.nav
  Temporary geographic nav file: tmp_geo_8044.nav

  ------------

  Projection:                    UTM Zone 27
  Projection units:              meters

  ------------

586 navigation records read...

Running mapproject...
mapproject tmp_proj_8044.nav -Ju27/1:1000000 -I \
        -R-20:0/0:0/-19:0/1:0r > tmp_geo_8044.nav

Deleting tmp_proj_8044.nav, tmp_geo_8044.nav...

Done...
```

BUGS

Let us know...