

Navigation Data

Source navigation files bundled as "zip". These data contain as received from the remotely operated vehicle (ROV) or ship data provider.

[Oceans 3.0 API filter](#): dataProductCode=ND

Format

Source files vary in format depending on the ROV or ship data provider, and "zip" is the format of bundling the the source data. See below for the device specific parameters.

A generic unzipping application such as 7-zip or Keka can be used to open the zipped format into a folder of source files. The source files may require specific software for viewing or playing back files.

[Oceans 3.0 API filter](#): extension=zip

Device-specific Parameters

ROV Hercules Navigation (DeviceID 23531):

ROV Hercules navigation data is processed and bundled into .zip files of source files (described further below), and .txt files (created by combining key information from source files). The parsed data available for download includes latitude, longitude, heading, depth, altitude, pitch, and roll all sampled at variable intervals. The .txt files and source files are named using the format: HERCULESNAV01_datefrom(yyyymmddT000000.000Z).

As of 2021, archived source files include: -HER, -NAV, -DAT, -SDYN and -PSON. Prior to 2021, -HER, -NAV, -DNV, -USBL, -dvlNav, and -hypack files were archived.

For files from 2017 onward:

Latitude and Longitude (in decimal degrees) can be found on the SOLN_DEADRECK lines. For example:

VFR 2018/07/26 00:00:05.026 13 0 SOLN_DEADRECK -129.098726 47.948227 0.000 3.335 100 0.21 322.24

Depth can be found on DEP lines. For example:

HER 2018-07-26T00:00:05.036Z HER DEP 2018/07/26 00:00:05.036 HERC 0 2191.819497 *00013232.40

Heading can be found on OCT lines. For example:

HER OCT 2021/08/15 00:38:56.166 HERC 0.000000 0.004000 0.005000 46.120000 -1.710000 1.020000 0.000000 0.000000 0.000100 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 1629013136.144604 1629013136.153427 1629013136.126002 0.000000 2800.560407 0.000000 0.000000 0 50331648 1629013136.166425 0.005228 0 1629013136.166425

Pitch, Roll and Altitude can be found on JDS lines. For example:

HER 2016-05-14T00:52:04.422Z HER JDS 2016/05/14 00:52:04.422 HERC 48.29001425 -126.13001647 -1.222 1.585 1.560 -1.330 335.700 -0.315 0.000 3451.5 0.6

ROV Argus Navigation (DeviceID 23530):

Argus navigation data processed on the ship are bundled in a single zip file. This includes sampled, trimmed, and merged directories. These contain latitude, longitude, and depth re-sampled to 1 second intervals to provide a 3D navigation solution. The trimmed directory contain raw files trimmed to the dive interval. The sampled directory contains data simplified, filtered, and re-sampled with depth as negative down. The merged directory contains a trimmed and re-sampled 3D navigation solution with depth as positive down. Argus also has source data that is combined with data received for Hercules navigation in .HER and .NAV files. These files are archived with Hercules (DeviceID 23531) and will need to be downloaded separately.

E/V Nautilus Navigation (DeviceID 23529):

E/V Nautilus navigation data is processed and bundled into .zip files of either daily log files (in .txt format), or source files (described further below). The parsed data available for download includes latitude, longitude, and heading all sampled at 1 second intervals. The .txt files and source files are bundled into a .zip file containing files with the name format EVNAUTILUSNAV01_datefrom(yyyymmddT000000.000Z).

Prior to 2018-07, 3 source file types can be downloaded from Oceans 3.0 (.INNAV, .BNAV, and .SPSOL). From 2018-07 onwards, the decision was made to archive just .INNAV files in Oceans 3.0, as these are considered the the most reliable and are used to create the .txt daily log files. Data lines from the .INNAV, .BNAV, and .txt files are in standard NMEA-0183 format, unless otherwise stated.

.INNAV files are integrated, filtered navigation solution for the ship from the Seapath navigation system. Sentences may include \$INGGA (vessel position), \$INHDT (vessel true (non-magnetic) headings), \$INZDA (time), \$INVTG (course made good).

For example, Latitude and Longitude (in degrees decimal minutes) can be found in .INNAV files here:

*\$INGGA,204411.18,4839.240181,N,12327.126204,W,2.09,0.9,-4.90,M,-18.17,M,2.0,0135*41*

and Heading (in degrees) can be found in .INNAV files here:

*\$INHDT,100.33,T*14*

.BNNAV files are a dynamic positioning navigation solution from the bridge, currently the PRAXIS DP system. These are typically less reliable than the .INNAV files. Sentences may include \$DPGGA (vessel position), \$DPVTG (course made good), \$DPMWV (wind speed and direction), \$DPROT (rate of turn).

.SPSOL files are Seapath 330+ ship's navigation and attitude sensor and are in .JSON format. The columns are as follows: Header, Time (epoch seconds), Latitude (decimal degrees), Longitude (decimal Degrees), Height (meters), Heave (meters), Velocity_north (m/s), Velocity_east (m/s).

Discussion

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