

Documentation ScanNav

NMEA Playback

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Introduction

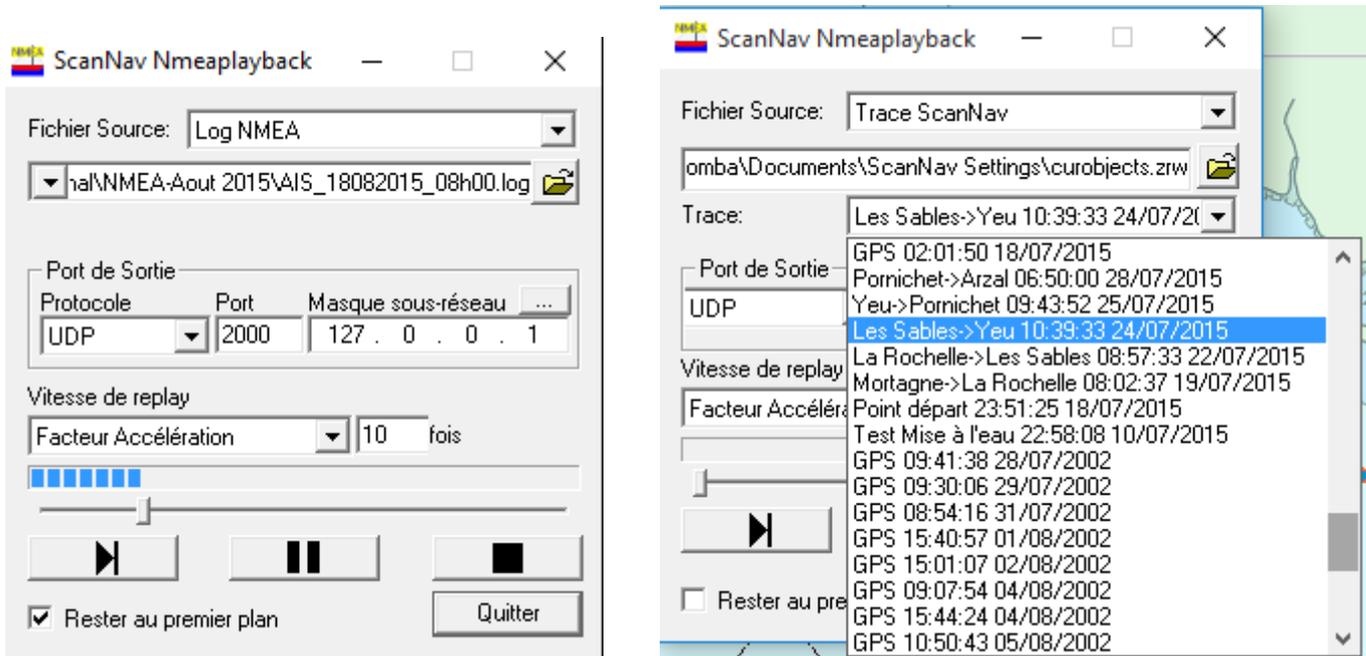
The NMEA Playback module is a module allowing to replay NMEA 183 logs, or ScanNav Traces to view them in action on the screen. It is integrated into the ScanNav distribution from version 16.0.

Its NMEA output can be interpreted as input by ScanNav, or any other software taking NMEA as input through the UDP and TCP protocols.

The NMEA Playback module is in its current version linked to the ScanNav license, and accessible to any ScanNav user without additional license. If you do not have an active ScanNav license, it can be used in demonstration mode for periods of 5 minutes maximum, and for one month.

Functioning

NMEA Playback is an independent program that must be launched from the icon  on the desktop or in the Windows "Start" menu, which opens the following window:



The "Stay in the foreground" button keeps the window on top of all the others to avoid having to search for it in the Windows bar when it is hidden by ScanNav or other.

Choice of input file type:

NMEA Playback takes NMEA files, or ScanNav trace files, as input. NMEA log files can be 'raw', or include date information (each NMEA sentence is preceded by a 'timestamp'), allowing playback to be sequenced by time (see below).

Once the type has been chosen, click on the button  to search for the file on your disk. You also have access to the history of open files by clicking on the file name field, allowing you to quickly switch between files. The last opened file is always at the top of the list.

When choosing ScanNav trace files, an additional choice appears to choose the trace to replay within this file.

Choice of output port:

You must choose a UDP or TCP output port, communication with ScanNav being carried out by the network layers (purely local to the PC, or between different PCs via Wifi or cable).

The easiest way is to use **UDP** which allows you to send in "broadcast", i.e. to any software on the same pc, or the same home network, listening on the specified port, without worrying about the 'IP address. To avoid overloading the network, you can limit sending to a part of the network or a specific IP address by filling in the " **subnet mask** " field . The button  allows you to use standard configurations:

- **My PC** : corresponds to the "loopback" address 127.0.0.1: Only the PC running NmeaPlayback will receive the frames, and it will work even if no network is connected. Use this configuration preferably if the destination program is on the same pc.
- **My IP** : Will provide the main IP of your pc. Is identical to "My PC", except that it goes through the network layers. Use "My PC" instead of "My IP"

- **My network** : Sends frames only on the subnet corresponding to your pc. For example if your IP is 192.168.1.10, it will fill in the IP 192.168.1.255, and all the PCs connected to your network whose IP is between 192.168.1.0 and 192.168.1.254 will receive the frames
- **All the network** : corresponds to the IP mask 255.255.255.255: All the PCs connected to the network will receive the frames whatever their IP. However, routers block this mode, and IPs outside your local network will therefore not receive them (for this you must use the TCP protocol)
- You can also manually fill in any other valid subnet mask. Check with a network administrator.

TCP mode makes it possible to be more targeted, and is often the only way to communicate between 2 PCs on separate networks. The "listening" software must then enter the IP address of the PC on which NMEA Replay is launched.

The software listening to the replay must be configured to listen with the correct protocol and port number (and IP address in the case of TCP). In ScanNav, this is located in the GPS and Instruments tabs of the preferences. Refer to the ScanNav documentation for more details.

Reading speed:

It is possible to control the rate at which NMEA sentences are sent.

- "Acceleration factor": fill in the multiplier factor, for example 100 to replay 100 times faster than the original.
- "Time delay between sentences": enter a number of milliseconds, corresponding to the waiting time between the sending of each sentence, 1000 corresponding to 1 second. For example, by entering the value 10, 100 sentences will be sent per second.

The use of the "Acceleration factor" only works with ScanNav traces, or NMEA logs with "Timestamp". The format of the "Timestamp" information not being standard, only the formats used by the ScanNav or NKE logs are currently supported. Others will be supported later, you can submit your format to us if necessary.

Raw NMEA logs (ie without timestamp), or with timestamp in an unsupported format, must use the "Timeout between sentences" mode. A later version will possibly allow sequencing according to the time information present in the NMEA sentences.

Reading and progress:

To activate the sending of NMEA sentences, click on the start button , which will start the sending from the beginning of the selected source file.

A progress bar allows you to have an indication of the percentage of progress. By positioning the mouse over the progress bar, the corresponding date is displayed in a tooltip. You can interact with the slider below the progress bar to move directly to a location in the file. The corresponding date is displayed in a tooltip by moving the cursor.

Note: the tooltip dates may be fancy if the log file does not contain a timestamp.

The pause button allows you to pause and resume playback. It will be grayed out if playback has not started, or is at the end of the file. The icon alternates between  and  depending on whether it is paused or not.

The stop button closes the connection, you must then restart with the button .

It is recommended to stop the reading with the stop button before changing the source file, or the communication port.

Tips:

In ScanNav, tracks will be created exactly as if you were navigating. This can therefore generate duplicates in your objects, and or jerky traces when you move forward and backward with the progress slider.

Furthermore, the generated traces will be created with names corresponding to the current date, but their content will take into account the original date entered in the NMEA.

It is therefore advisable when using the Replay module to specify a specific active class in ScanNav, in order to easily find the traces resulting from the replay mode to eliminate them. See layers documentation for implementation.