Test Case Run | TCR786 Signal K delta/updates as input

Status: ✔ Pass ✖

Test Plan Run: TPR82 Signal K HDG sentence test

Test Plan: TP5 dashboard_tactics_pi_static_input

Test Case: TC107 Signal K delta/updates as input

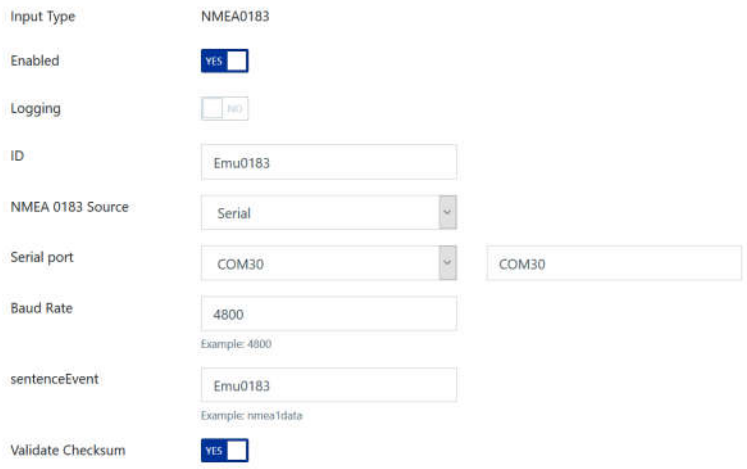
Assigned To: Select user...

Time Spent: 360.000

Precondition

Signal K Server and NMEA simulator http://www.kave.fi/Apps/ are used in this test together so that the NMEA simulator feeds the Signal K Server either with NMEA0183 or NMEA2000 sentences, according the test. The output to the test is the Signal K Server's TCP output on port 8375, which can be tested by opening a browser in http://localhost:8375 (don't leave it running during the test).

The NMEA simulator is talking to COM29 virtual port and COM30 will be its output using the virtual driver. Once Signal K server is started, in http://localhost:3000 the input is set like this:



For setting and selection of sentences in NMEA simulator, they are done the same way as in earlier static tests.
Important : make sure that OpenCPN itself does not have any data coming in from any other source, for example by disabling all its inputs.
Configuration: the plugin's data folder has a configuration file defined by configuration file variable:

[PlugIns/Dashboard/Tactics/SteaminSk]
ConfigFile=streamin-sk.json

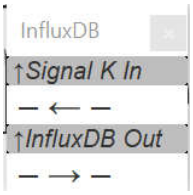
You should set the debug level to 3 for this test. Verify also that the server is pointing to host on which your Signal K server is running.

Steps

Connection test: without starting the Signal K server or

1 **Connection** test: without starting the Signal K server or stopping it, verify that the opening instrument is showing the socket connection attempt heartbeat in form of arrows moving from right to left about once per every two or three seconds:

✔ Pass ✖ 0



In the *opencpn.log* file file the above situation is indicated only once:

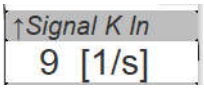
2:20:51 PM: dashboard_tactics_pi: SignalK Delta Streamer : SKTM_STATE_ERROR (refused by peer)
2:20:51 PM: dashboard_tactics_pi: DB Streamer : STSM_STATE_ERROR (refused by peer)

Once the connection has been established, but there is no data coming in (NMEA simulator is no running), the connection situation changes:

In the *opencpn.log* file this situation is indicated as (with debug level higher than 2):

2:27:15 PM: dashboard_tactics_pi: SignalK Delta Streamer : SKTM_STATE_WAITING
2:27:15 PM: dashboard_tactics_pi: SignalK Delta Streamer : SKTM_STATE_READY
2:27:20 PM: dashboard_tactics_pi: ERROR Signal K JSON updates: sync lost, waiting...

Once the NMEA simulator is started and data is flowing in, we get the number of parsed and transmitted values per second on the display:



With the debug levels higher than 2 in the configuration, the above is also visible in the *opencpn.log* file:

2:37:09 PM: dashboard_tactics_pi: Signal K type (NMEA0183) sentence (GLL) talker (GP) src () pgn (0) timestamp (2019-09-15T13:37:09.000Z) path (navigation.position) key (longitude) value (4.014167), valStr (4.014167333)
2:37:09 PM: dashboard_tactics_pi: Signal K type (NMEA0183) sentence (GGA) talker (GP) src () pgn (0) timestamp (2019-09-15T13:37:09.000Z) path (navigation.position) key (longitude) value (4.014167), valStr (4.014167333)

Restart now the OpenCPN without making changes in the Signal K server or NMEA simulator. In the beginning, instead

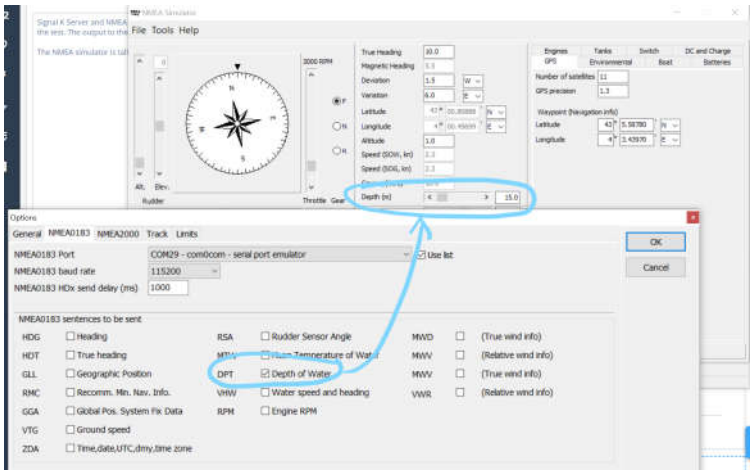
Signal K server or NMEA simulator. In the beginning, instead of the number value, you should observe a heartbeat. This is because the timer event is not precise in the beginning and it is not possible to show anything meaningful what comes to actual throughput:

Confirm that you have observed all the above states in the Signal K In indicator: PASS or FAIL.

2 ✔ Pass ✖ 0

Depth NMEA-0183 DBT

Select from emulator only the DPT sentence to be sent out:

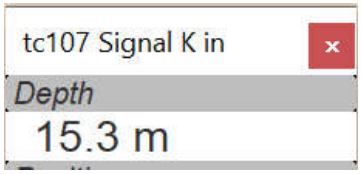


Set the depth to contain a decimal after the meters, like 15.3, which would result to, in http://localhost:8375 like this


```
{"self":"urn:mrn:imo:mmsi:227346650","timestamp":"20
19-09-14T16:12:22.413Z","version":"0.0.1"}
{"updates":[{"source":{"sentence":"DPT","talker":"S
D","type":"NMEA0183","label":"Emu0183"},"timestam
p":"2019-09-14T16:12:22.443Z","values":[{"path":"env
ironment.depth.belowTransducer","value":15.3}]}],"co
ntext":"vessels.urn:mrn:imo:mmsi:227346650"}
{"updates":[{"source":{"sentence":"DPT","talker":"S
D","type":"NMEA0183","label":"Emu0183"},"timestam
p":"2019-09-14T16:12:23.450Z","values":[{"path":"env
ironment.depth.belowTransducer","value":15.3}]}],"co
ntext":"vessels.urn:mrn:imo:mmsi:227346650"}
```


Create a single streaming-in Signal K instrument; with the above emulator data it should show one data even per second:

Create a dedicated instrument frame for this test and put a depth indicator (single instrument) in it. It should show the same value and when you move the emulator dial it shall move instantly.



PASS or FAIL.

3 GPS NMEA-0183 GGA

✔ Pass ✖ 0

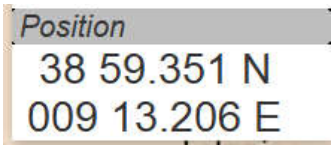
Production level test: SKIP - in normal operation, ***O*** defines the "fix" and provides the boat position, which is used with first priority. It may or it may come from this very same sentence, originally (its NMEA0183 format) but that information is not available. In Dashboard, this entry has priority level 3, so it not passed to instruments what comes to latitude and longitude since the ***O*** provided value overrides it. Therefore, no way to test it, nothing will be shown. However, DNSS Fix and number of satellites are used, internally.

Development level test: **PASS** or **FAIL**

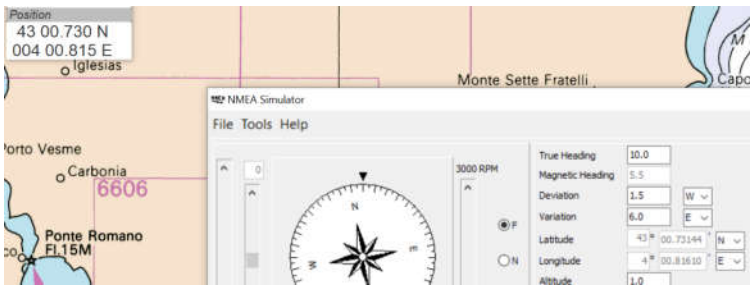
Due to priority selection, it is possible to test latitude and longitude changes only if one changes the in the source code the priority from the default level 3 to 1, which is the same in ***O*** given "fix" (which is actually the boat's position on the chart, not a GPS fix, necessarily. You would see some skipping back and forth (between ***O*** "fix"and this sentence) on the position displays and this is the indication that this call is passing. Internally, we get the GNSS Fix and number of satellites set, but for now, use the debugger to see those values.

Screenshots:

You have the boat position somewhere in the map and that is the position shown when the NMEA simulator and Signal K are not sending anything. Make sure that O does not have any other data source:



Now, make your boat moving with NMEA Simulator (put some throttle) send only GGA or GLL sentences (depending of the test, see below), they will be sent once every second. You have time to see the position blinking between the boat's chart position (***O***) and the value sent by the NMEA simulator:



Important: after the debug test, return the priority values to their original values (3 for GGA and 2 for GLL).

SKIP / PASS or FAIL

4 **GPS NMEA-0183 GLL**

✔ Pass ✖ | 0

Production level test: SKIP - see GGA, same explanation. However, no DNSS Fix or number of satellites here. Also, if the sentence is not valid, Signal K is not transmitting it at all as a delta.

Development level test: **PASS** or **FAIL**

(see above GGA test for the screenshots)

Due to priority selection, it is possible to test latitude and longitude changes only if one changes the in the source code the priority from the default level 2 to 1, which is the same in ***O*** given "fix" (which is actually the boat's position on the chart, not a GPS fix, necessarily. You would see some skipping back and forth (between ***O*** "fix"and this sentence) on the position displays and this is the indication that this call is passing. ***Note***: if the sentence is not valid, Signal K is not transmitting it at all as a delta.

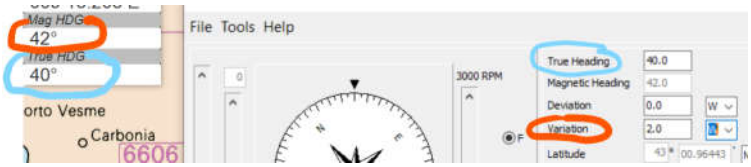
SKIP / PASS or FAIL

5 **NMEA-0183 HDG**

✔ Pass ✖ | 360

Make sure that the World's Magnetic Variation Plugin is turned OFF.

Check the following condition:



Change the variation to East:

Test the two use cases around the 360 degrees:

All four tests PASS or any of them FAIL

Reason For Status

PASS new connectivity test and new HDG test.

Defects

Key	ID	Summary	Created↑	Assigned	Status
Defect list is empty					

ADD DEFECT

Test Case History

RESULTS | DEFECTS | REQUIREMENTS

Status	Test Plan Run	Assigned To	Updated At↑	Actions
✔ Pass	TPR82 Signal K HDG sentence t...	Petri Makijarvi	about a minute ago	
✔ Pass	TPR81 dashboard_tactics_pi_st...	Petri Makijarvi	about 4 hours ago	

ACTIVITY | HISTORY | COMMENTS

TODAY

Petri Makijarvi Updated Run TPR82 Signal K HDG sentence test
less than a minute ago / Sep 15, 2019

Petri Makijarvi Updated RunResultStep SR1649
about a minute ago / Sep 15, 2019

Petri Makijarvi Updated RunResultStep SR1653
about a minute ago / Sep 15, 2019

Petri Makijarvi Updated RunResultStep SR1653
about a minute ago / Sep 15, 2019