NovaTel SPAN Drivers for HYPACK® and HYSWEEP®

By John Lindberg

We have recently completed the development of Ethernet device drivers in HYPACK® and HYSWEEP® for the NovaTel SPAN inertial systems. Rather than requiring multiple serial connections, you can now bring position, heading and motion into HYPACK® and HYSWEEP® via a single Ethernet cable. This is what you need to do to set it all up.

HYPACK® Computer Setup

The default IP address of the SPAN is 192.168.0.10, Port 3000 and TCP protocol.

1. First you will need to set up a static address for your HYPACK® computer to 192.168.0.xx (do not use 10) as shown below:

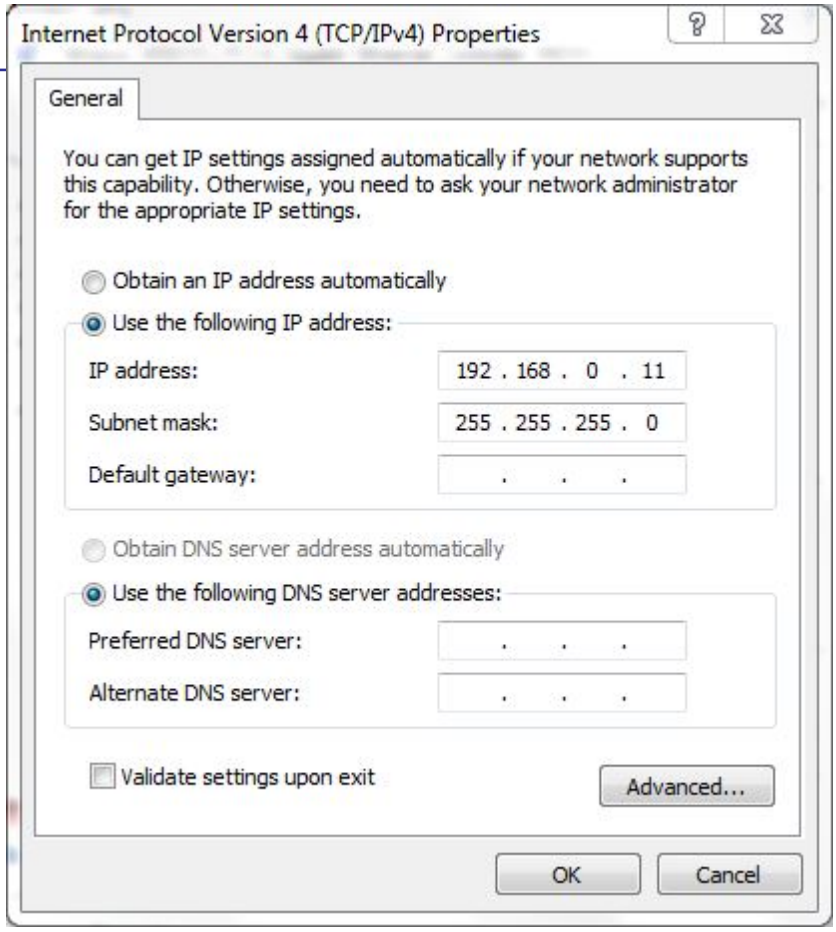


FIGURE 1. *Network Connection Settings*

2. Install the NovaTel CDU software on your HYPACK® computer. You have to use this software to set up the output datagrams, in addition to setting up the general offsets of the inertial system.
   Typically an inertial system is referenced to the vessel's course over ground (COG). Everything in HYPACK® and HYSWEEP® would then be referenced to the COG.
3. Once your SPAN system is up and running, verify that you are seeing data in the CDU software.
4. Configure the SPAN to output the proper datagrams.
   - HYPACK® requires INSPVAA, TIMEA, BESTPOSA and HEAVEA datagrams.
   - HYSWEEP® requires INSPVAA, TIMEA and HEAVEA datagrams.

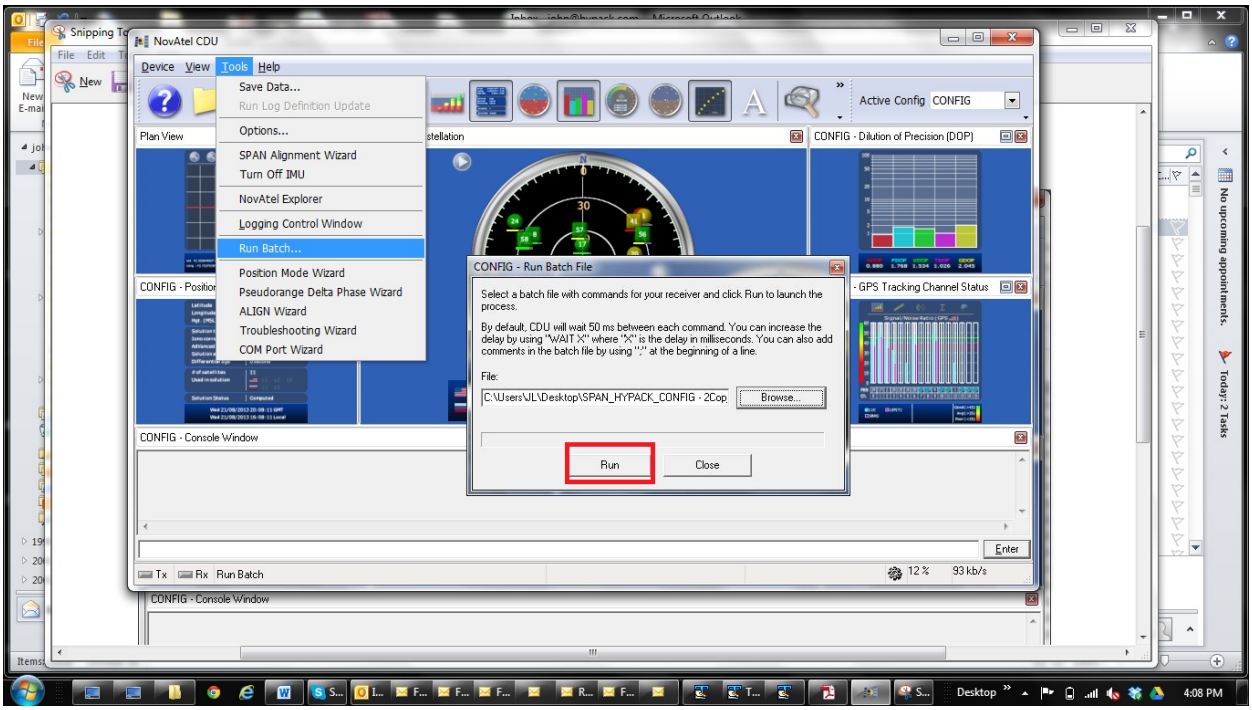
   a. The easiest way to configure the system is to create a text file with the following information:

```
LOG ICOM2 BESTPOSA ONTIME 0.2
LOG ICOM2 HEAVEA ONNEW
LOG ICOM2 INSPVAA ONTIME 0.05
LOG ICOM2 TIMEA ONTIME 1
LOG ICOM3 INSPVAA ONTIME 0.05
LOG ICOM3 HEAVEA ONNEW
LOG ICOM3 TIMEA ONTIME 1
SAVECONFIG
```

b. In the CDU software, select TOOLS – RUN BATCH and browse for the text file you just made.

c. Click [RUN] and your SPAN should now be configured to work with HYPACK® and HYSWEEP®.

FIGURE 2. *Configuring your SPAN to Output the Datagrams*

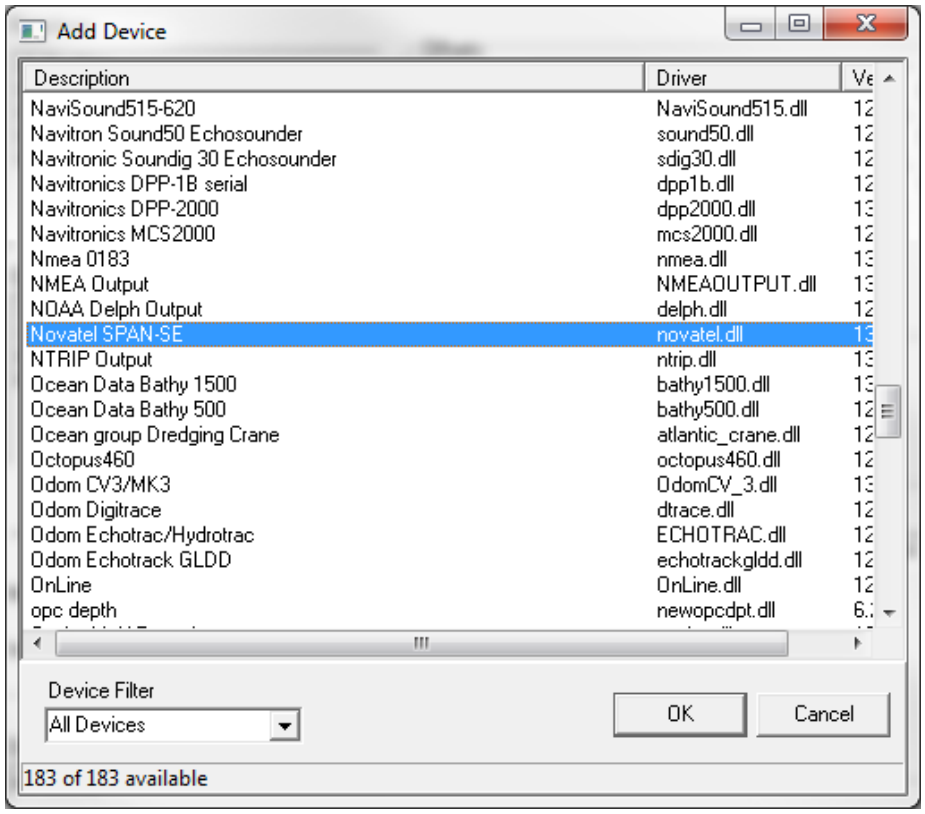


In addition to the specific datagrams, the batch file is also configuring the SPAN to send these datagrams out specific ports. The “ICOM2” command is sending the 4 datagrams to Port 3001 required in HYPACK®. The “ICOM3” command is sending the 3 datagrams to Port 3002 required in HYSWEEP®. With the CDU software connected to Port 3000, you can run HYPACK®, HYSWEEP® and CDU simultaneously over separate ports, all sharing one Ethernet cable.

HYPACK® HARDWARE CONFIGURATION

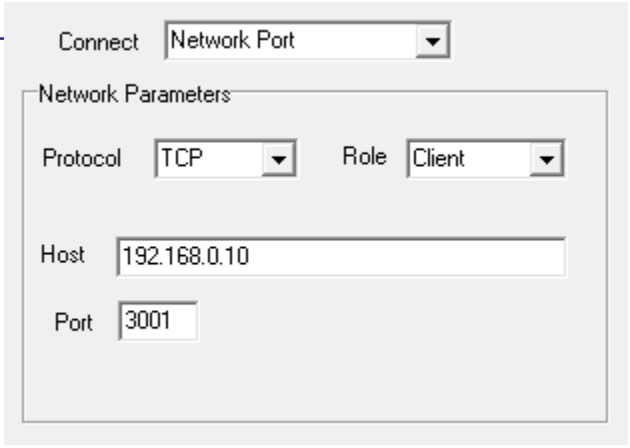
1. In HYPACK® HARDWARE, select the Novatel SPAN-SE device driver.

FIGURE 3.



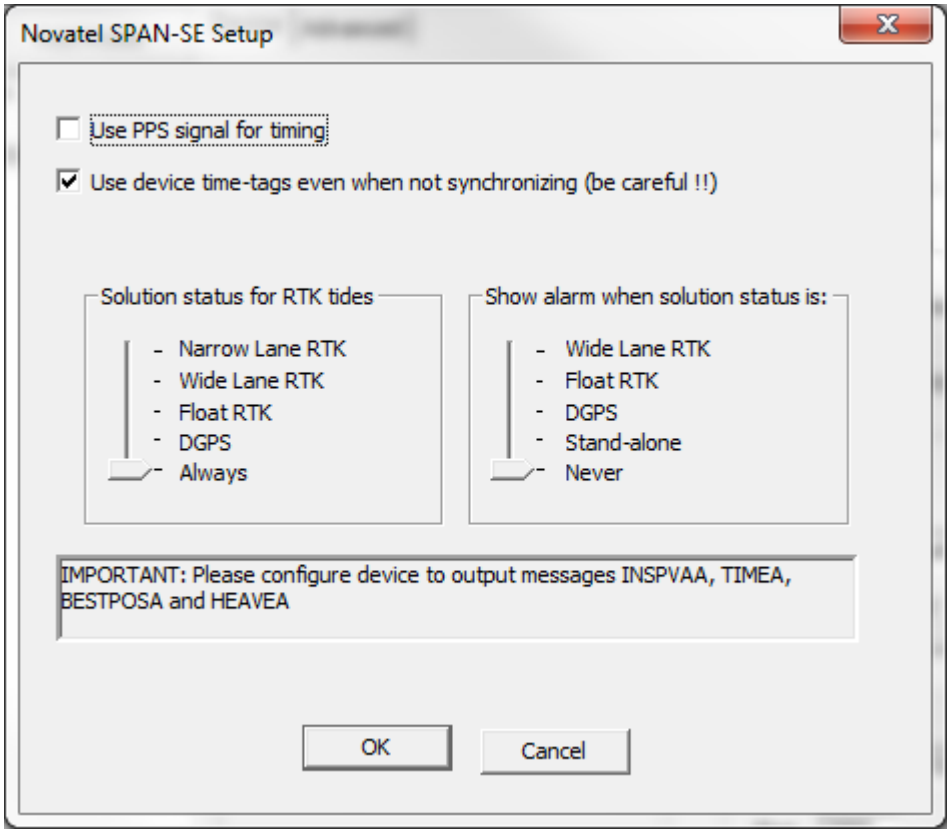
2. Select the functions you require. The driver supports position, heading, speed, tide and heave.
3. Enter offsets relative to the SPAN's reference.
4. Enter the following connection information:

FIGURE 4. *Network Connection Settings*



5. Click on [Setup] and choose the options required. If your multibeam system is directly receiving timing from the SPAN system, check the "Use device time-tags even when not synchronizing" option. This will ensure that everything is on the same time basis.

FIGURE 5. Novatel Driver Setup Dialog

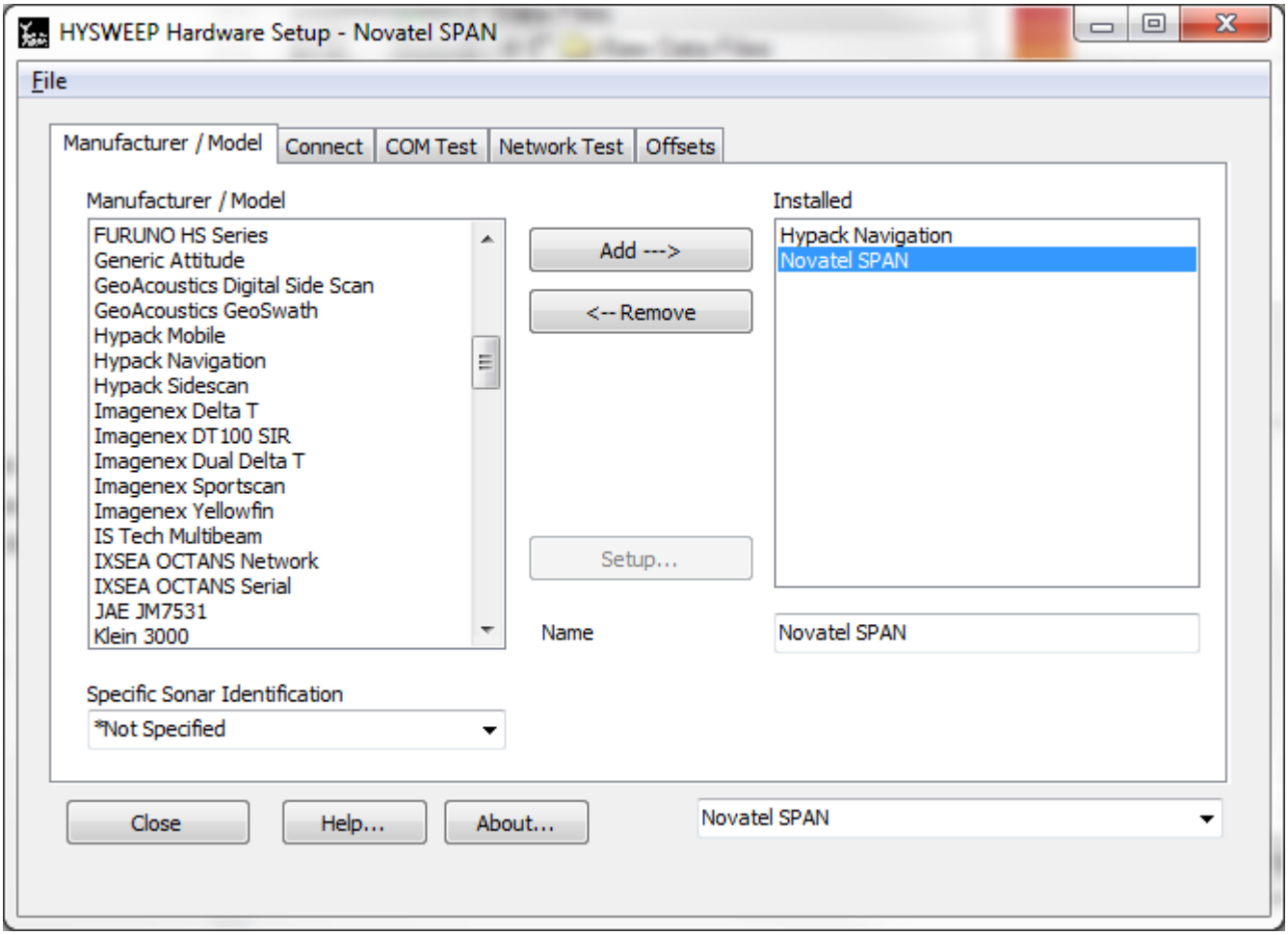


You can also choose to synch the computer clock to the SPAN under HYPACK CONFIGURATION.

HYSWEEP® HARDWARE CONFIGURATION

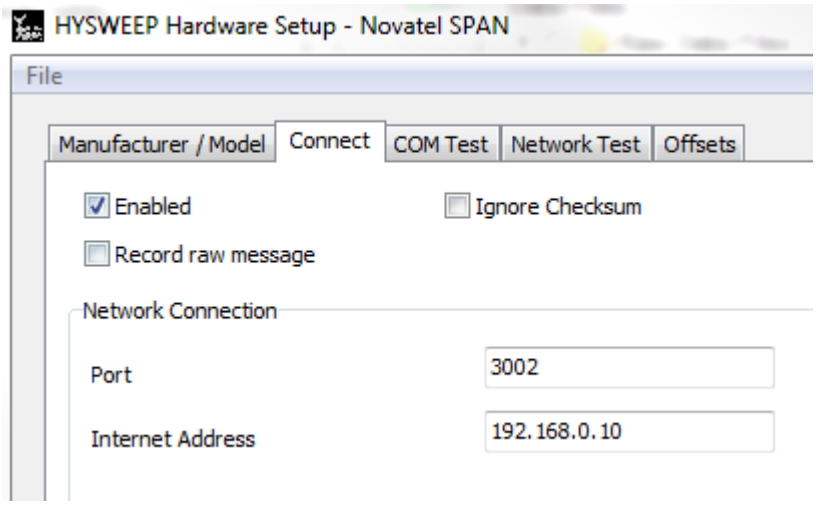
1. In HYSWEEP® HARDWARE, select the Novatel SPAN driver. This driver supplies motion and heading to HYSWEEP®.

FIGURE 6. *Adding the Novatel SPAN to your HYSWEEP® HARDWARE Configuration*



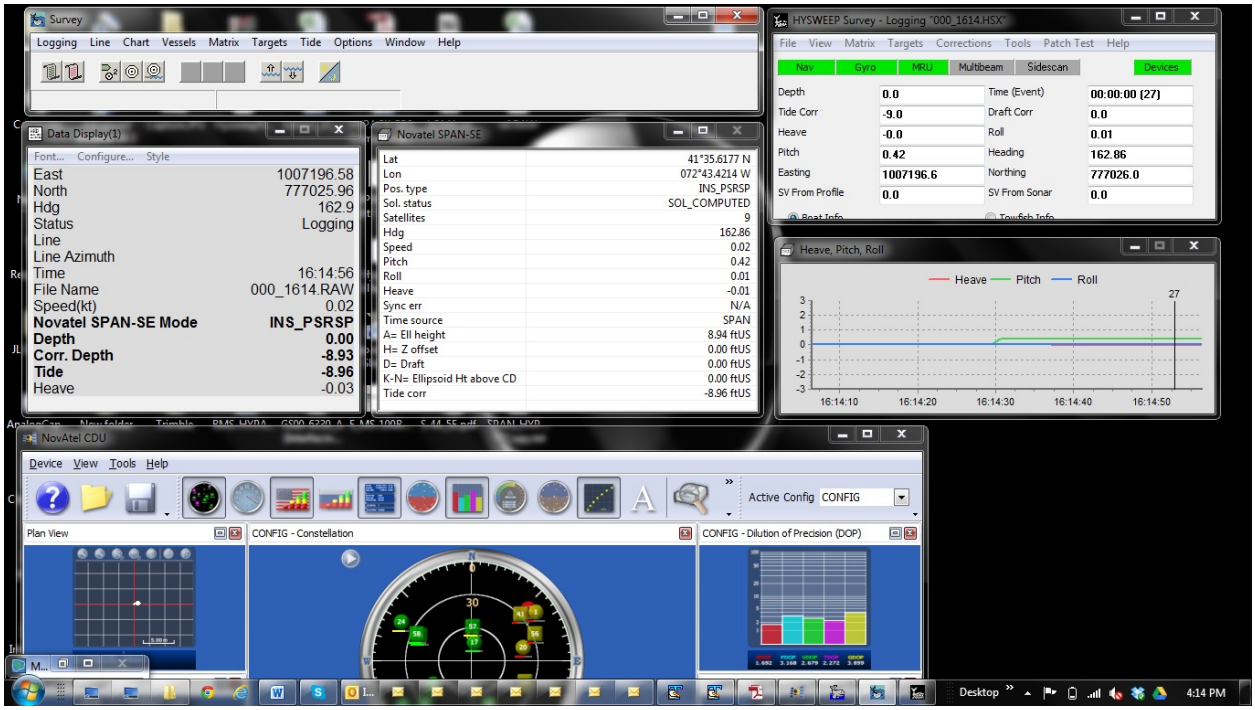
2. In the CONNECT tab, set up the connection info as shown in Figure 7:

FIGURE 7. *HYSWEEP® HARDWARE Connect Tab*



When you have everything configured properly in the CDU software, HYPACK® and HYSWEEP®, you should be able to see CDU, HYPACK® SURVEY and HYSWEEP® SURVEY all displaying information simultaneously as shown in Figure 8:

FIGURE 8. *SPAN Data in Action*



These drivers are available for HYPACK® 2013. Contact the Support department for any updates to these drivers.