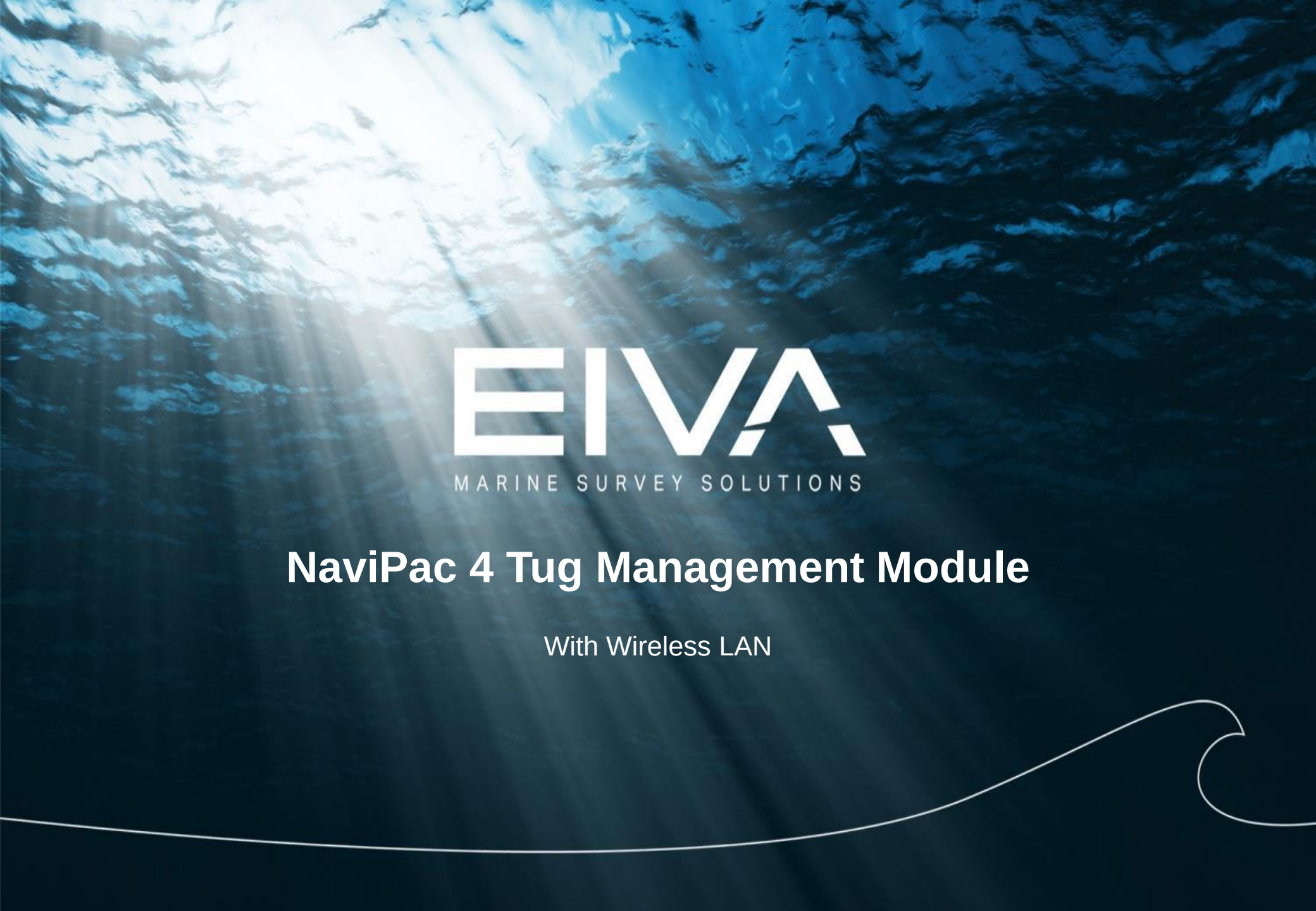
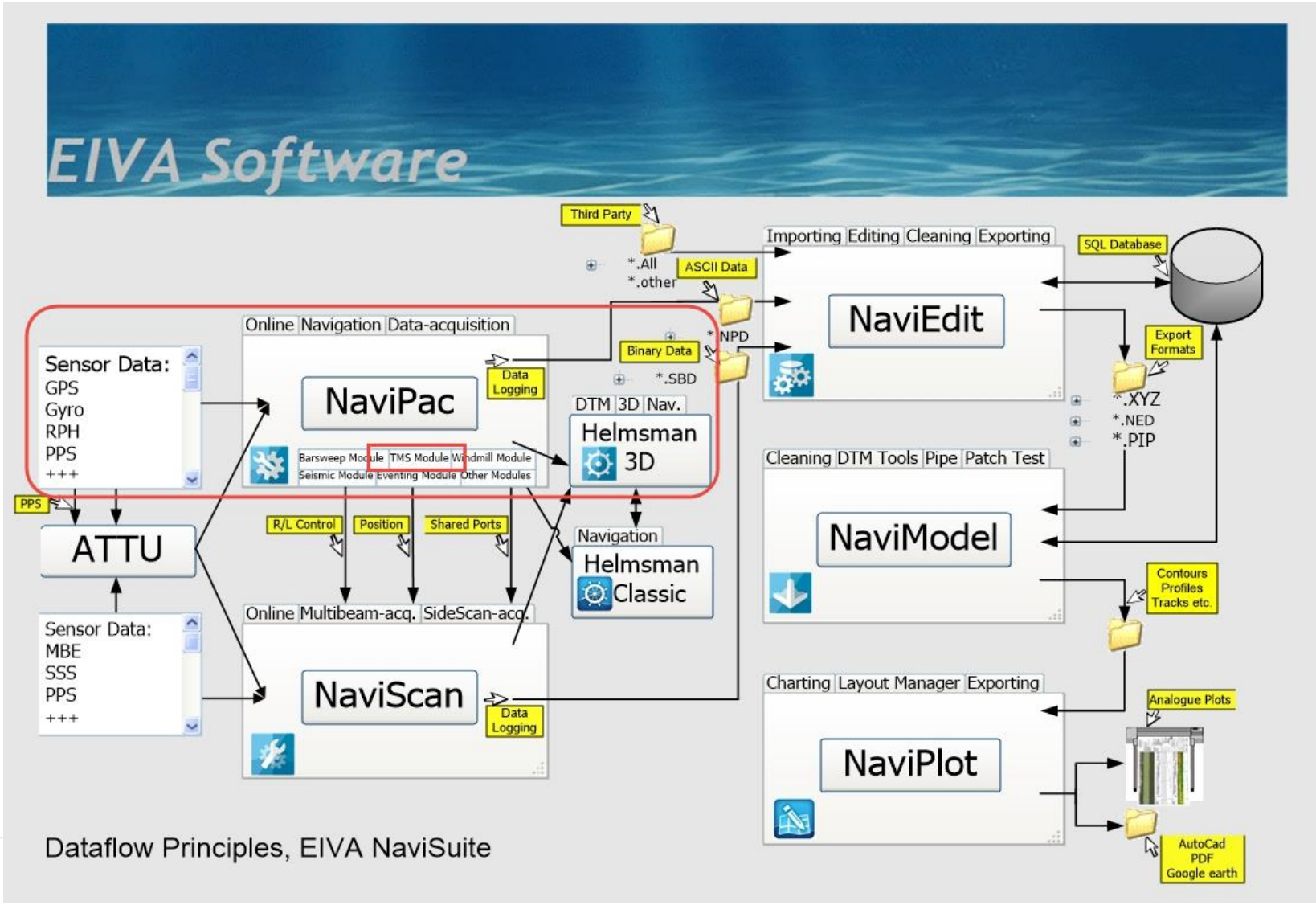


NaviPac 4 Tug Management Module

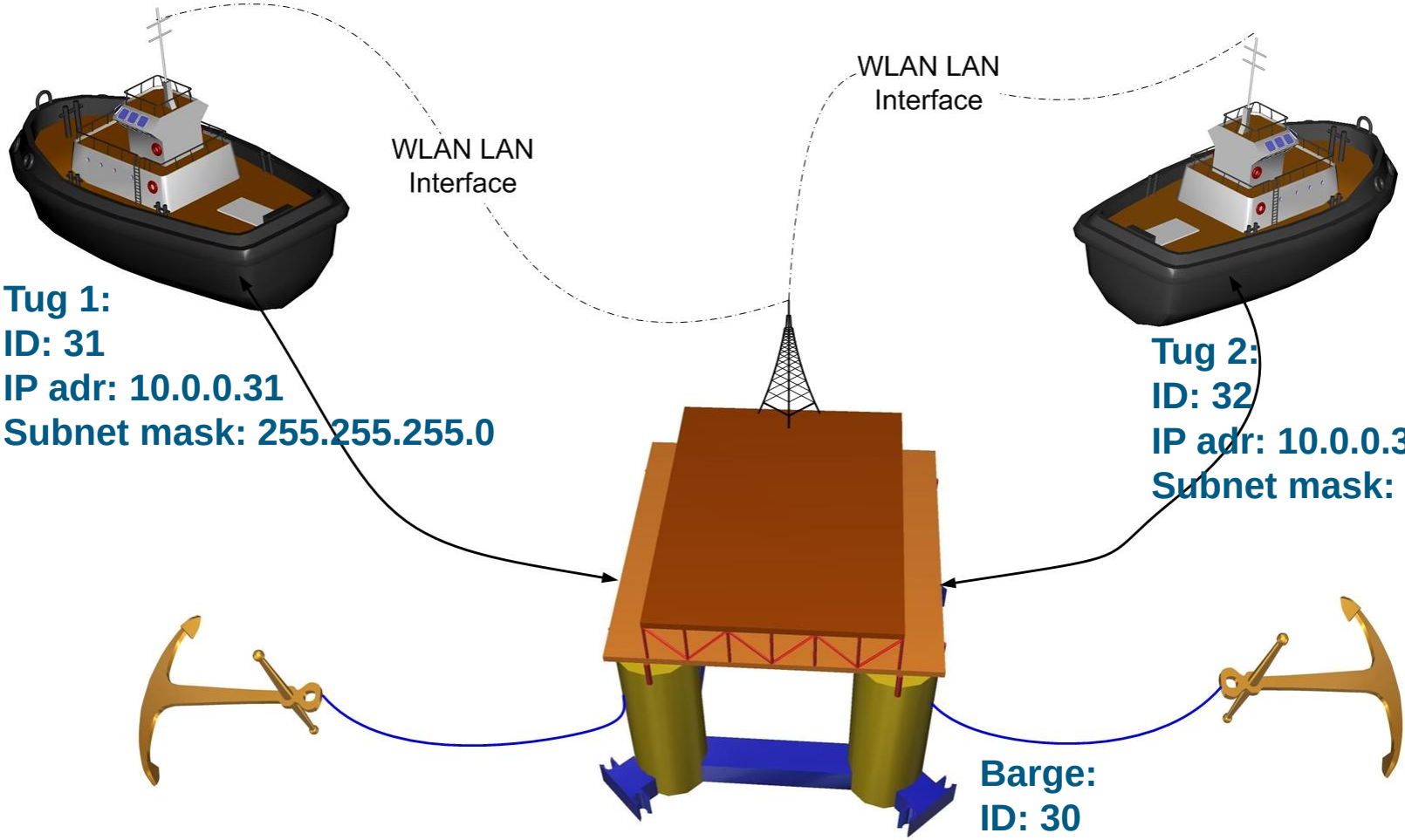
With Wireless LAN

Tug Management in EIVA NaviSuite



Dataflow Principles, EIVA NaviSuite

The Situation

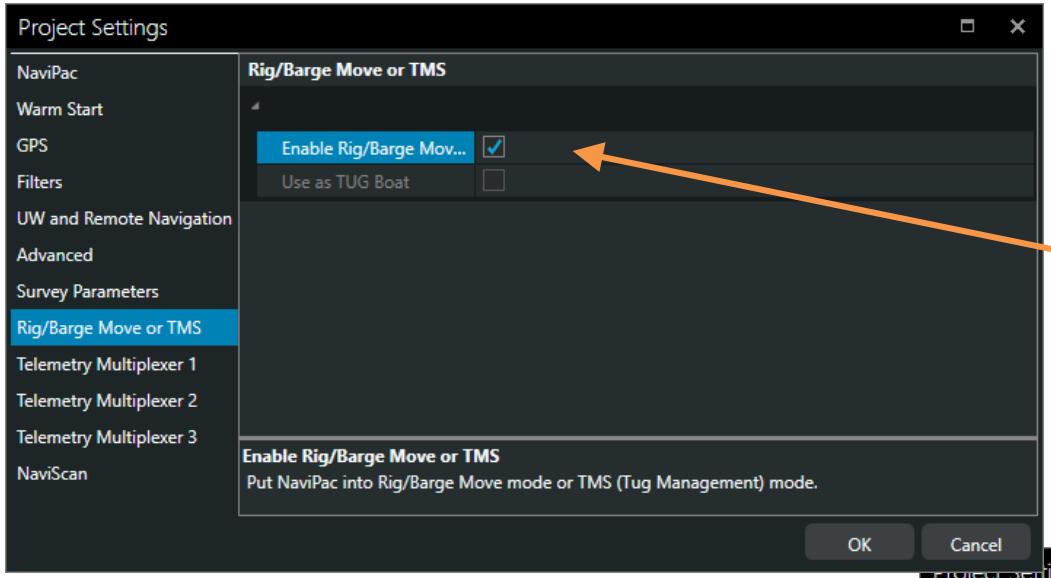


Tug 1:
ID: 31
IP adr: 10.0.0.31
Subnet mask: 255.255.255.0

Tug 2:
ID: 32
IP adr: 10.0.0.32
Subnet mask: 255.255.255.0

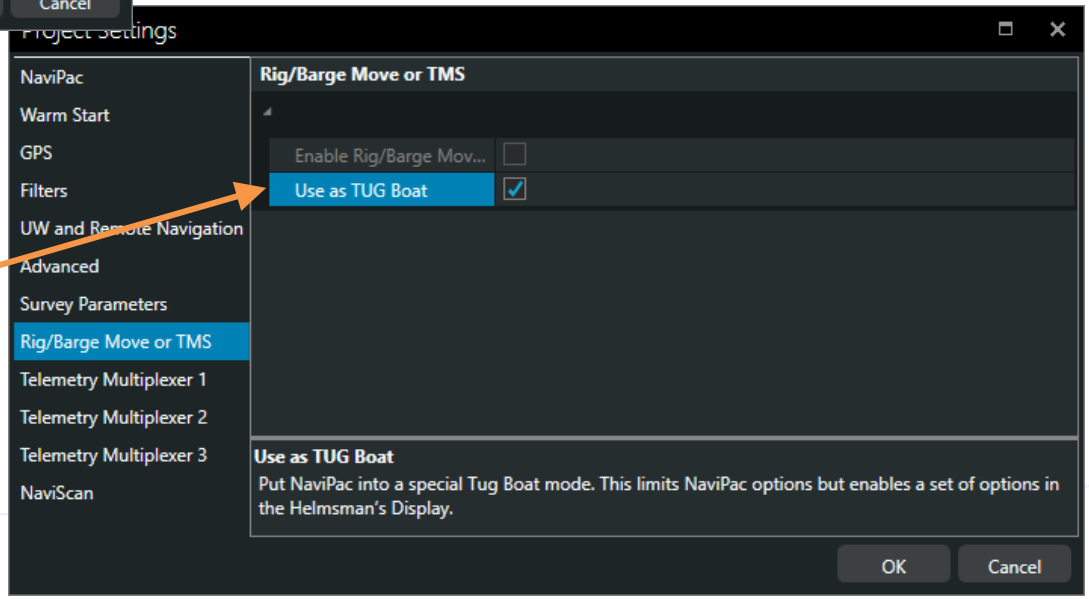
Barge:
ID: 30
IP adr: 10.0.0.30
Subnet mask: 255.255.255.0

NaviPac – Defining Mode

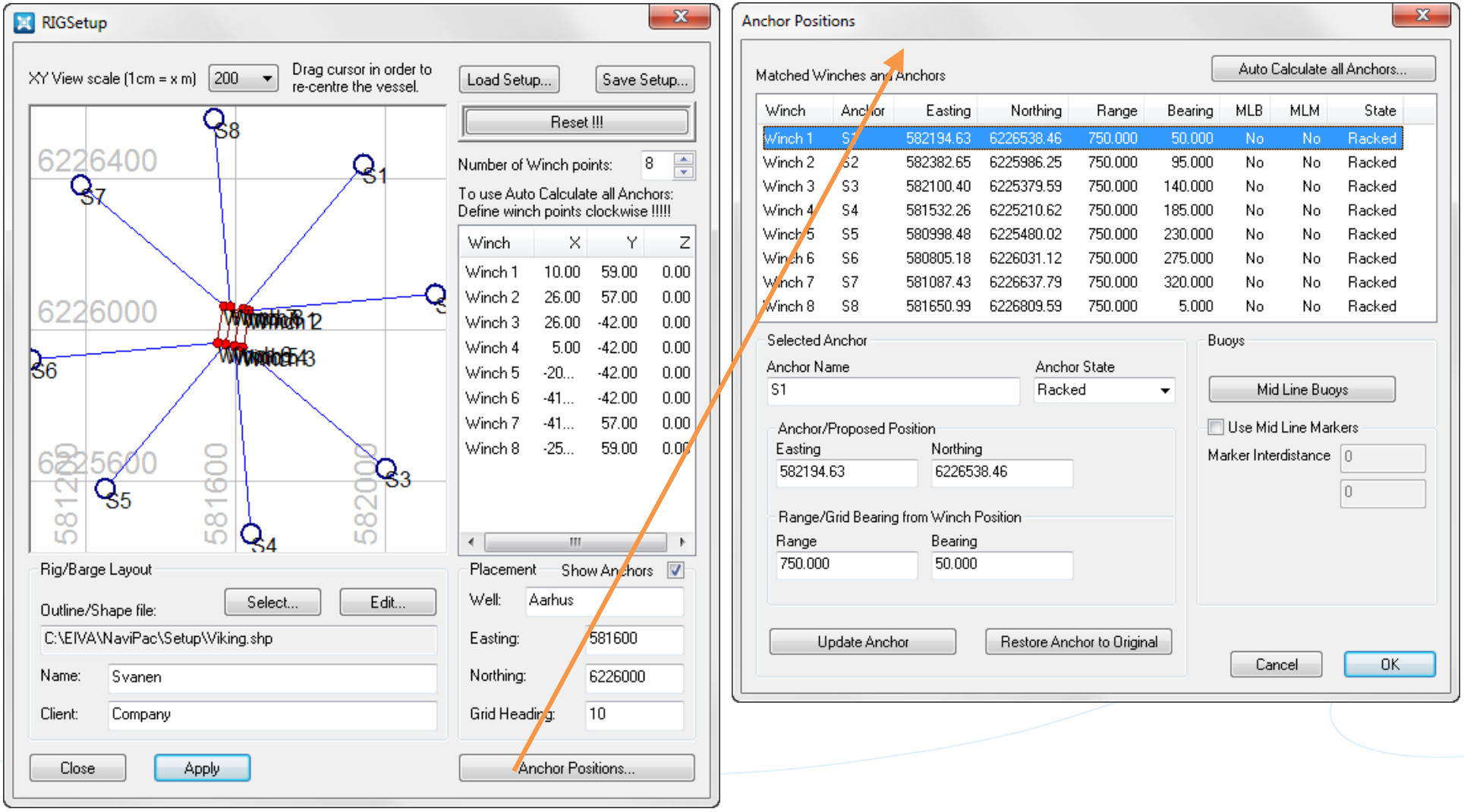


On the Barge, Rig/Barge mode must be enabled.

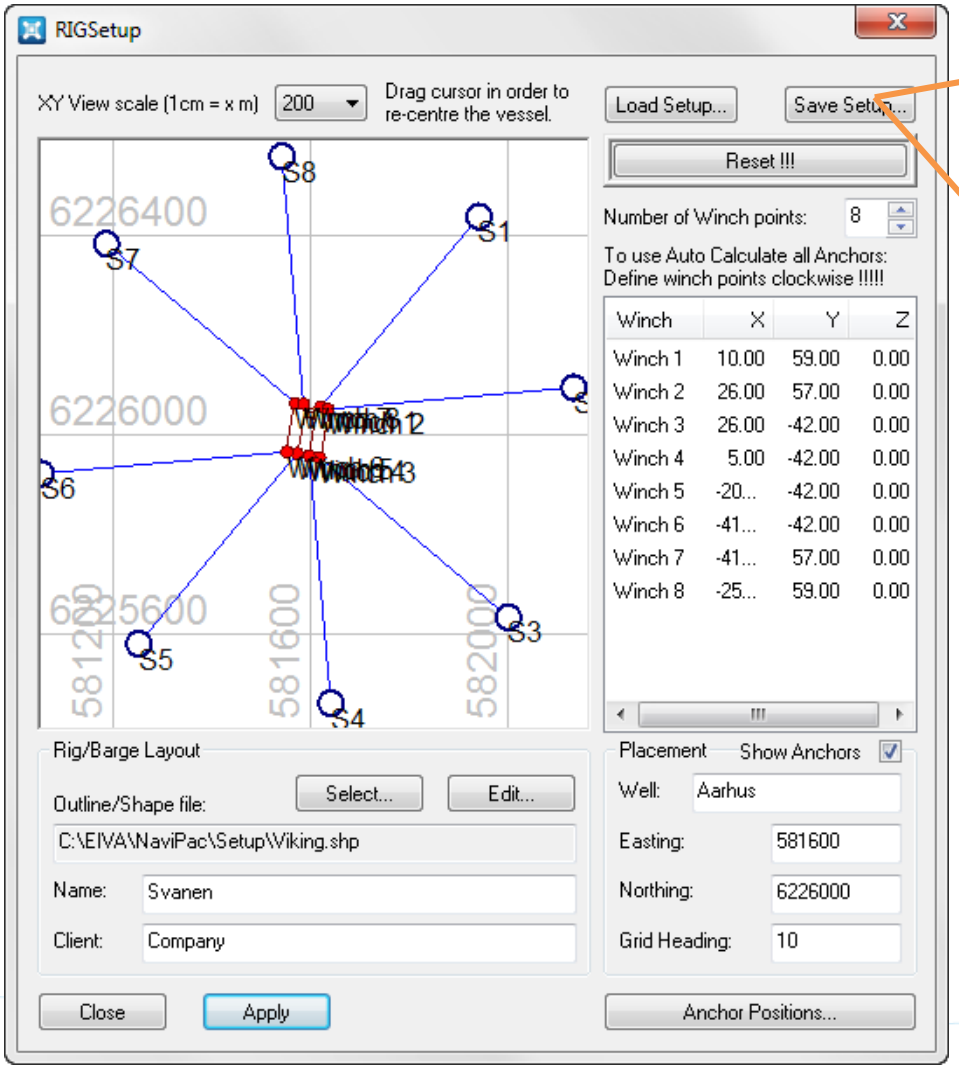
Use as TUG Boat on the Tugs.



NaviPac – RIGSetup on the Barge I

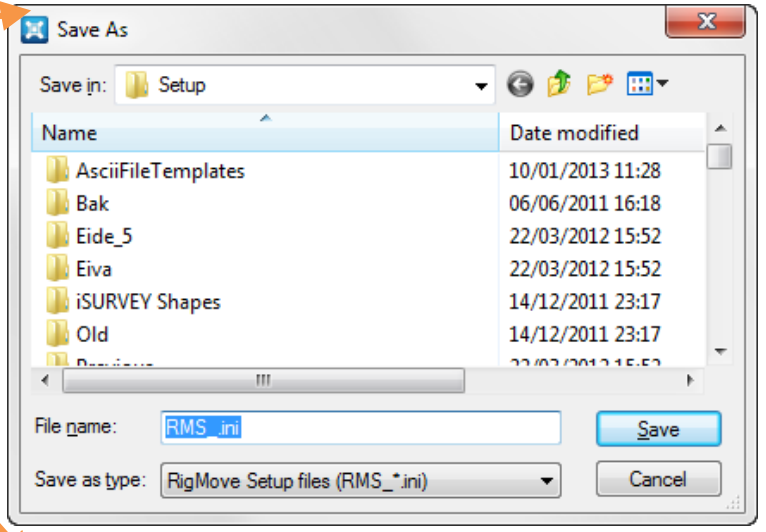


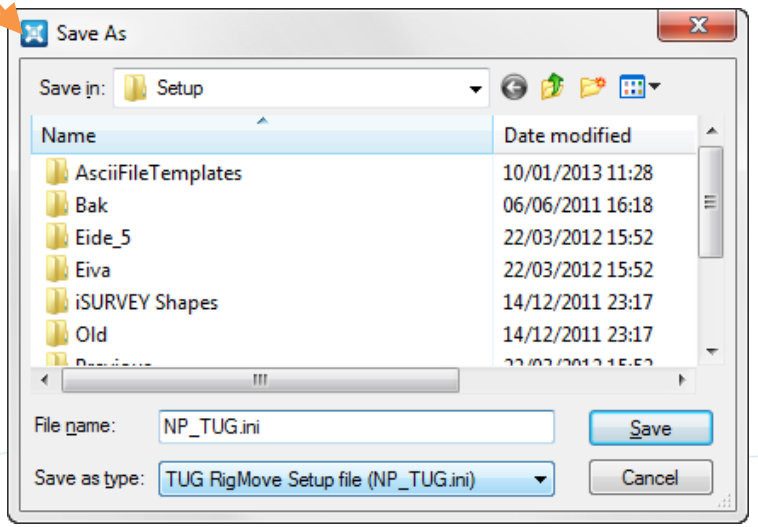
NaviPac – RIGSetup on the Barge II



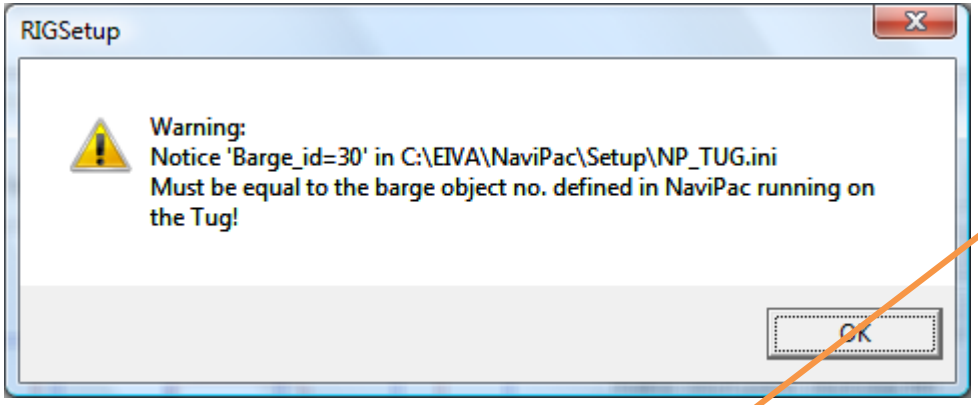
1 - Save as RigMove Setup file.

2 - Save as TUG Rigmove Setup file.





NaviPac – Rigsetup for the Tugs



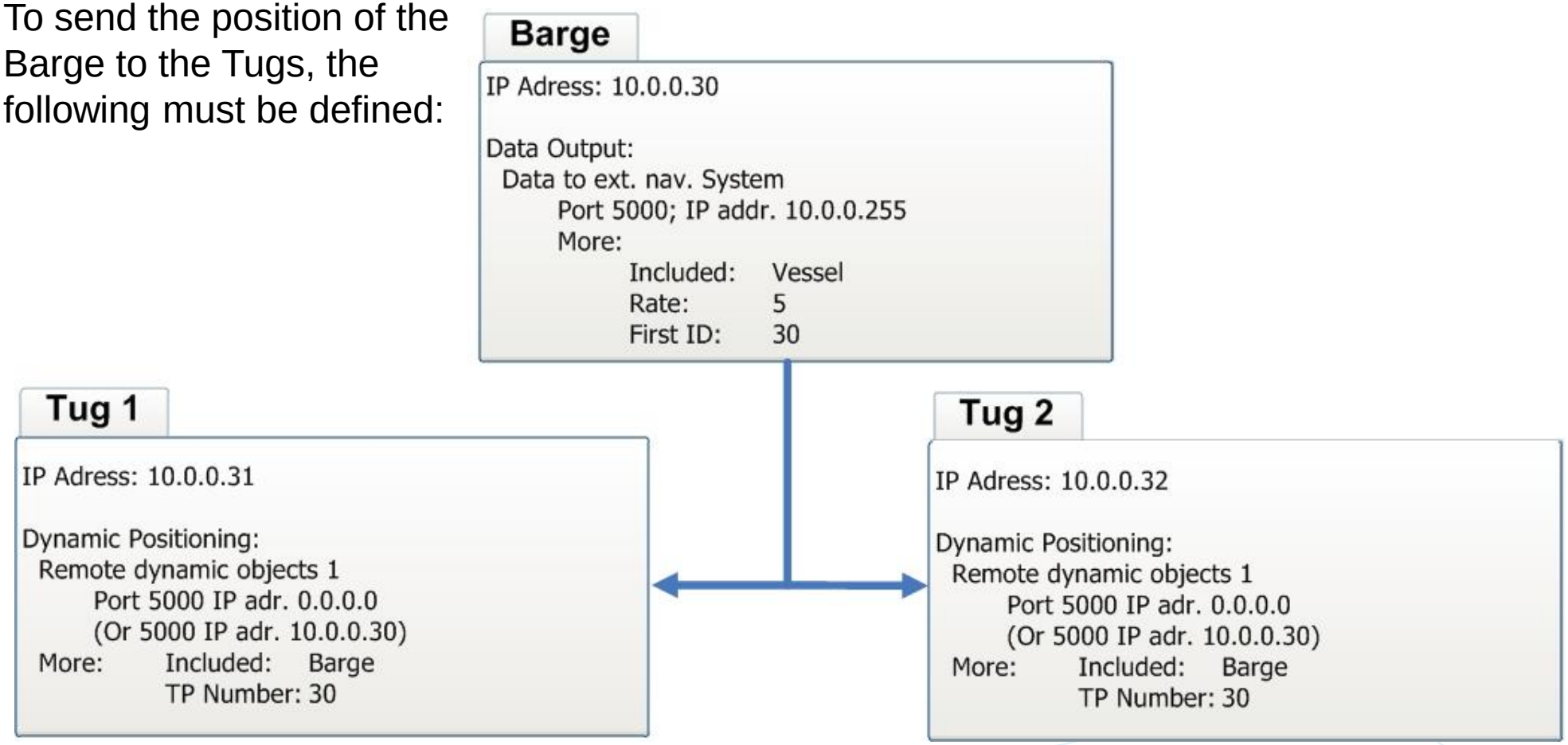
When saving the TUG Rigmove Setup file, the warning above is given.

The file NP_TUG.ini, which is generated from the RIGSetup option in the Barge NaviPac (previous slide), must be copied onto the Setup folder in EIVAHOME of **each** of the Tugs (C:\EIVA\NaviPac\Setup).

```
[RigMove]
Barge_id=30
No winch points=8
WinchName01=W1
WinchOffset01=10.000, 60.000, 0.000
WinchName02=W2
WinchOffset02=27.000, 57.000, 0.000
WinchName03=W3
WinchOffset03=27.000, -42.000, 0.000
WinchName04=W4
WinchOffset04=5.000, -42.000, 0.000
WinchName05=W5
WinchOffset05=-20.000, -42.000, 0.000
WinchName06=W6
WinchOffset06=-42.000, -42.000, 0.000
WinchName07=W7
WinchOffset07=-42.000, 57.000, 0.000
WinchName08=W8
WinchOffset08=-25.000, 60.000, 0.000
```

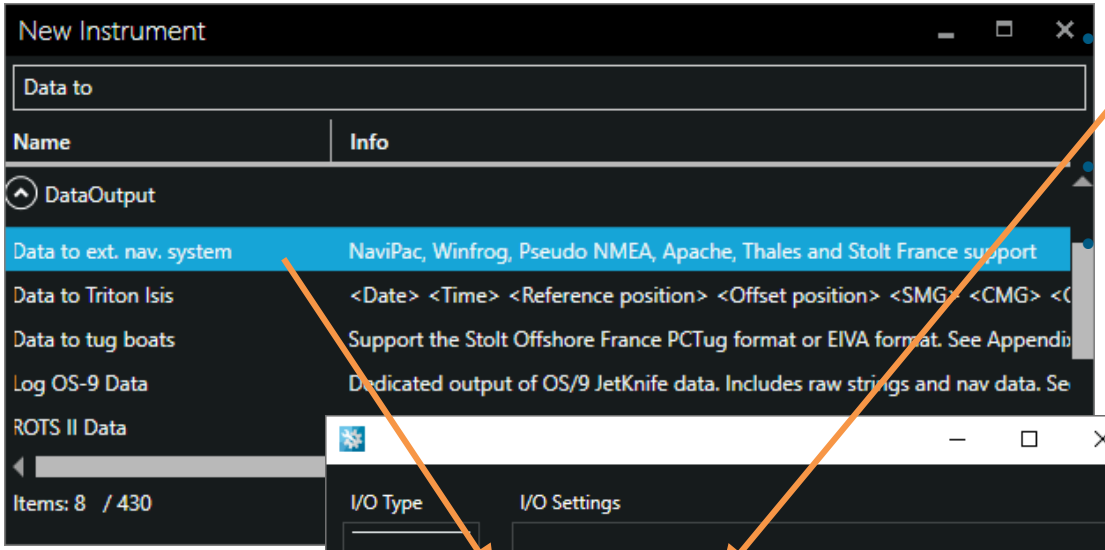
NaviPac – Barge – Position Output

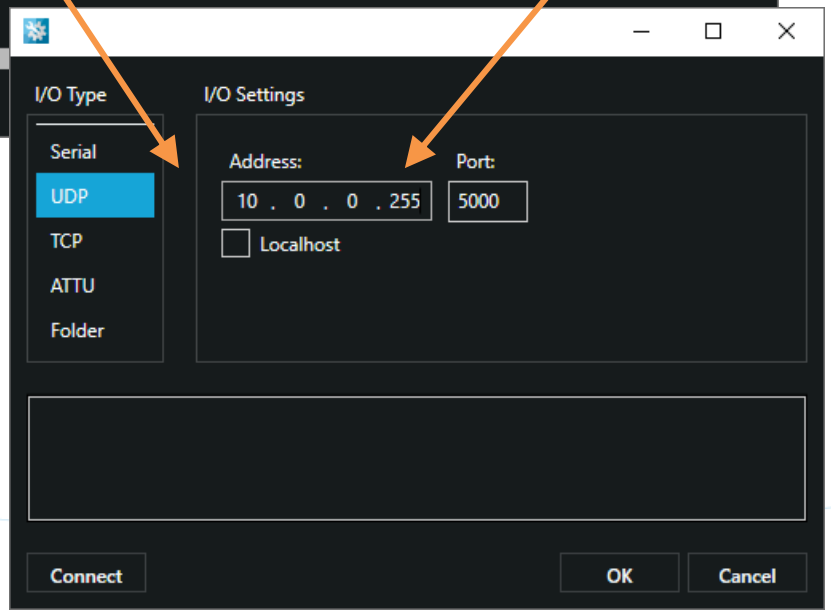
To send the position of the Barge to the Tugs, the following must be defined:



NaviPac – Barge – Position Output

To send the Barge position to the Tugs, the following output must be selected:

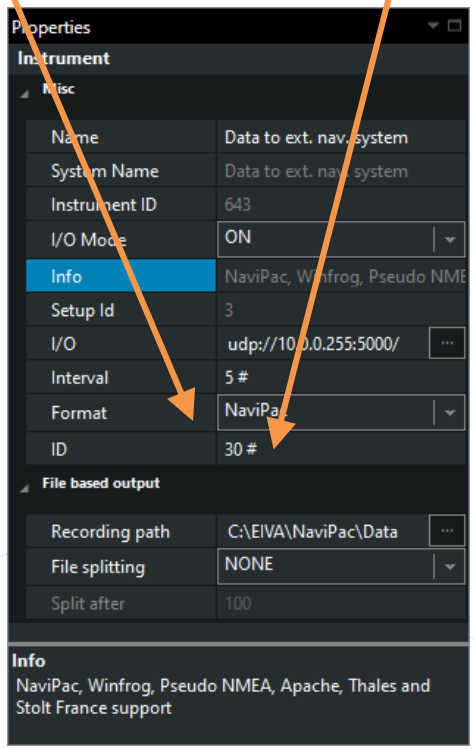




The last part of the IP Address should be 255 to facilitate broadcasting to all Tugs.

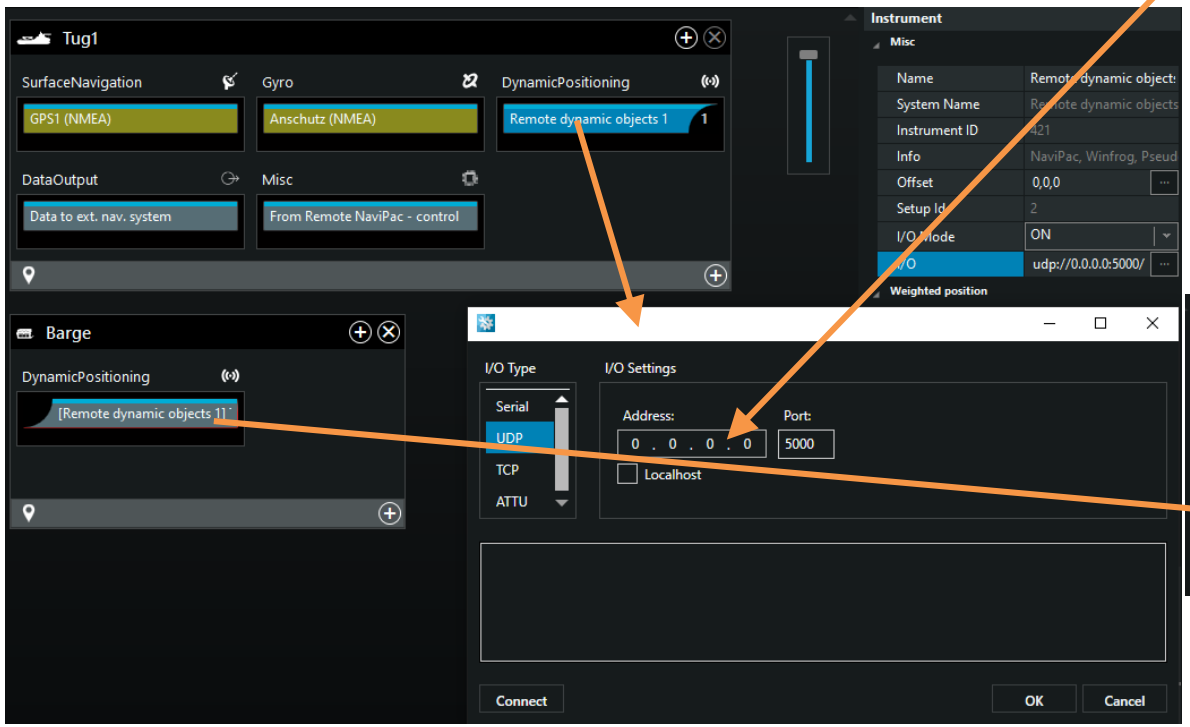
The ID of the barge position must be set to 30.

Choose format NaviPac.

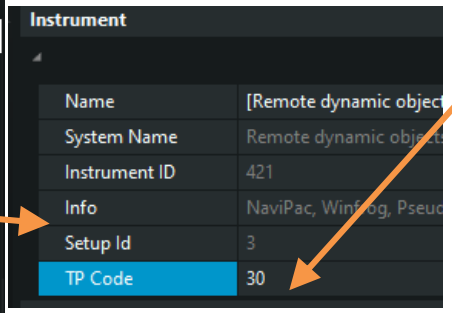


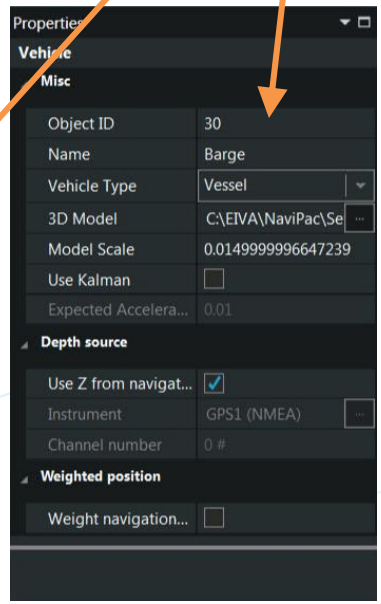
NaviPac – Tug – Receive Barge Position

To receive the barge position on Tug 1, the following Dynamic positioning system must be defined:



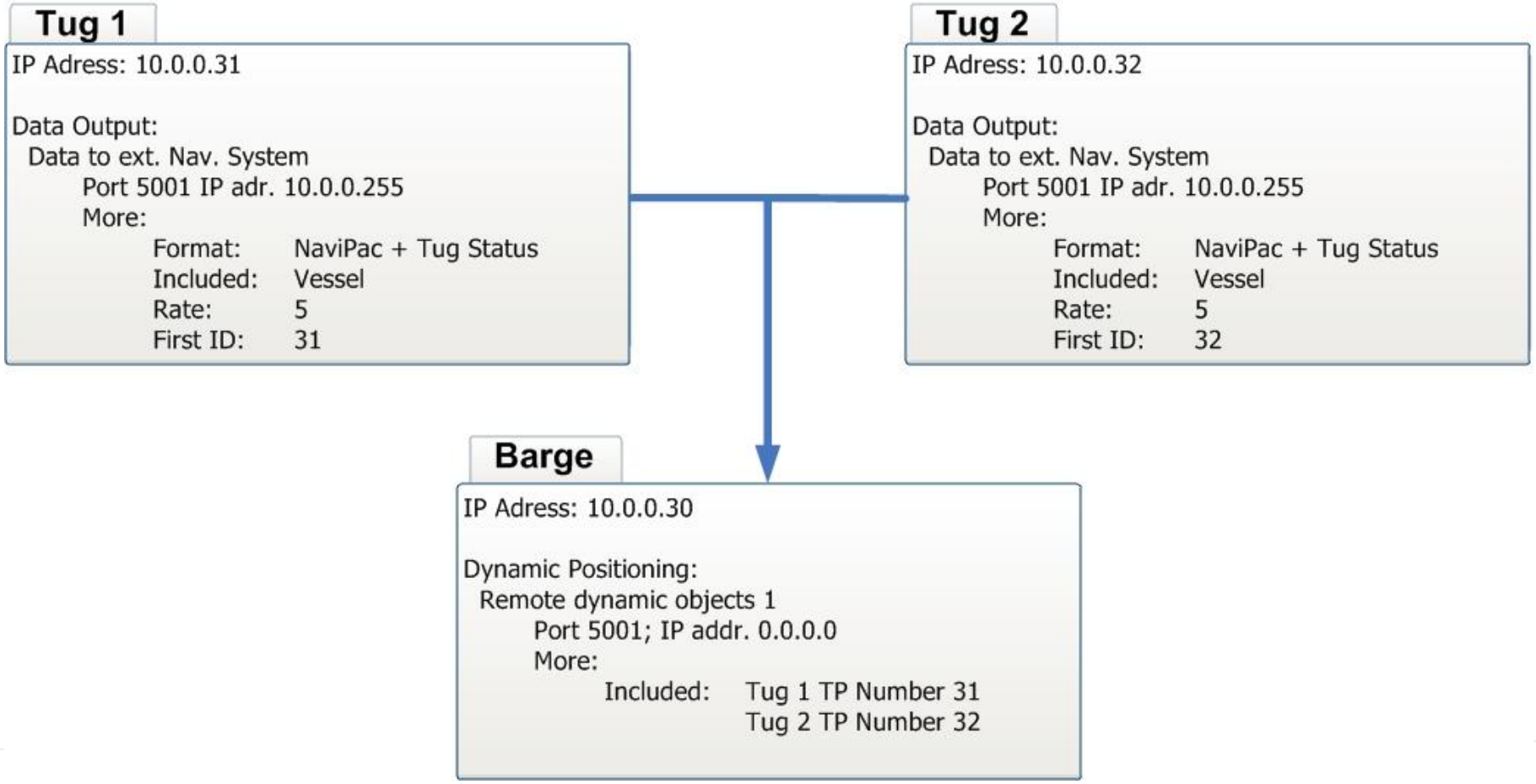
- The IP address: 0.0.0.0 allows NP to read from all IPs.
- The TP number of the remote dynamic object position string associated with the Barge is 30.
- The ID of the Barge must also be 30





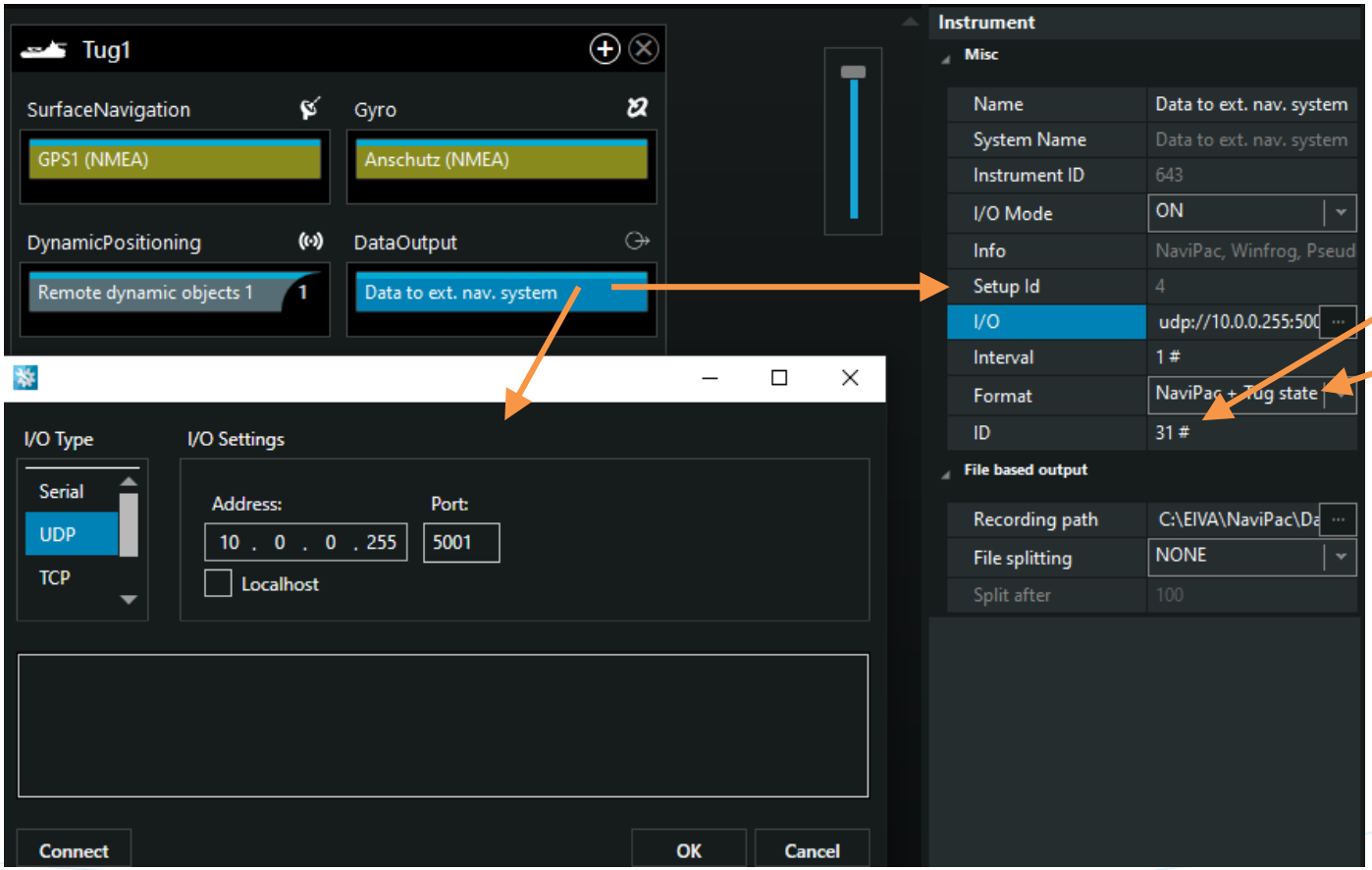
NaviPac – Tug – Position Output

To send the position from the Tugs to the Barge, the following must be defined:



NaviPac – Tug1 – Position Output

To send the position from the Tug 1, the following output must be defined:

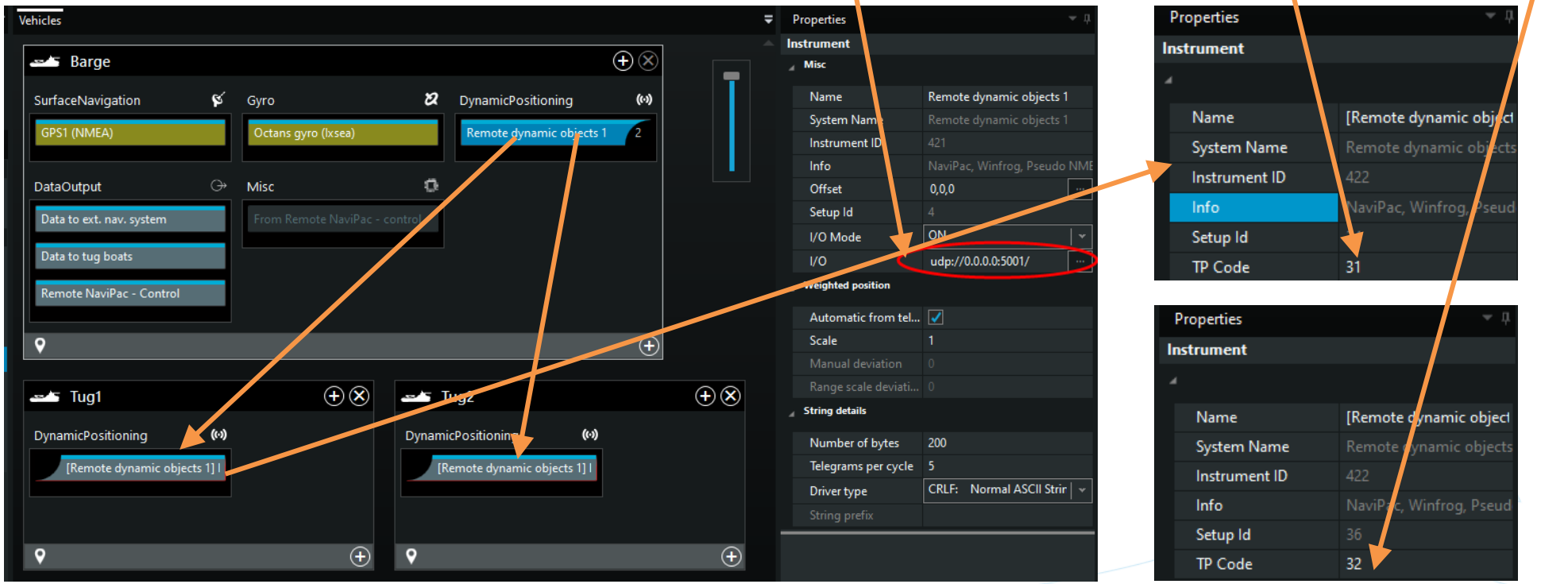


- The reference point (CRP) on the tug should be the stern. This is usually the anchor handling point on a tug.
- The ID must be defined as 31 (Tug 1).
- Format is NaviPac + Tug state.

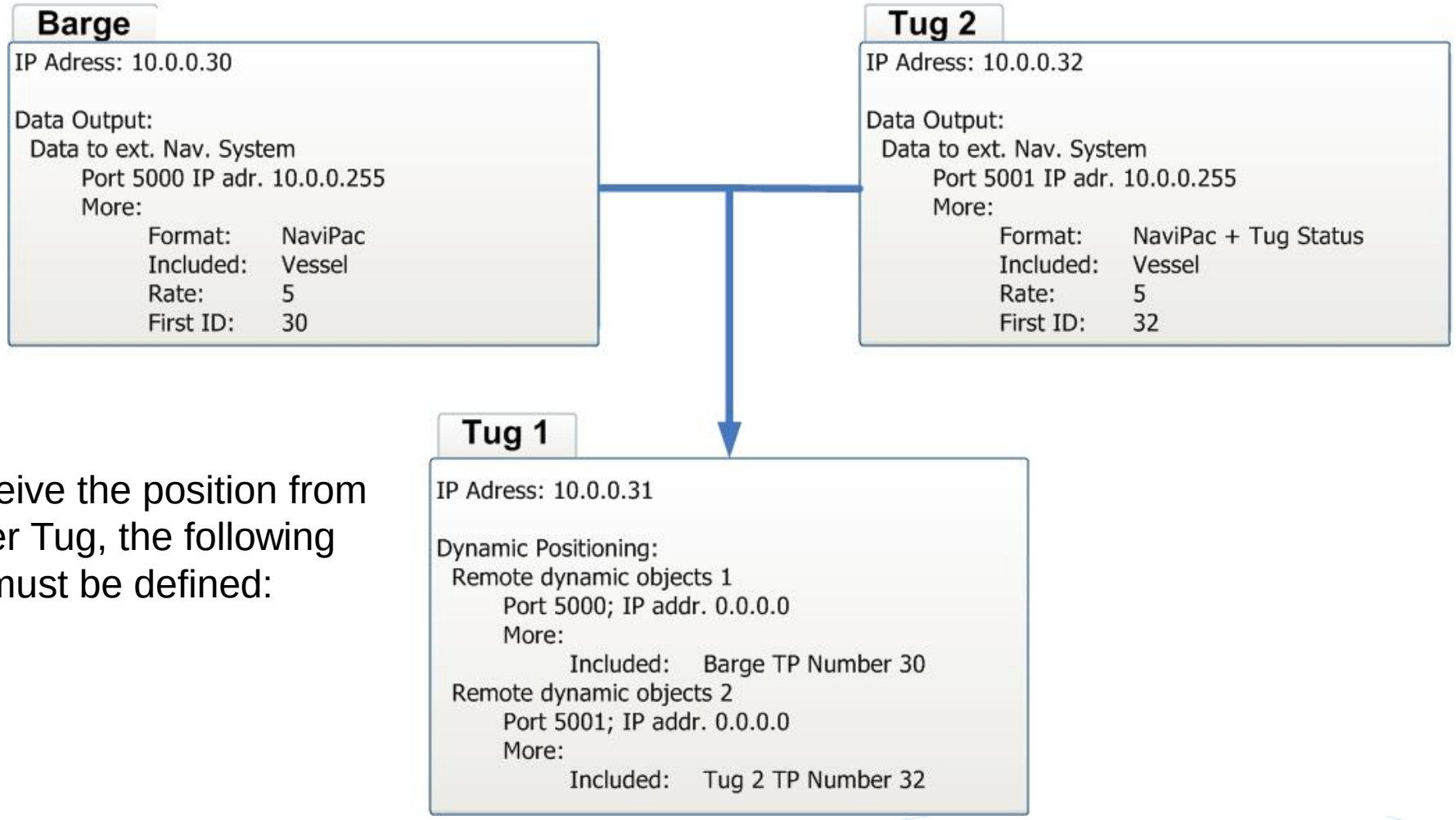
NaviPac – Barge – Receive Tug Position

To receive the tug positions on the barge, the following Dynamic positioning system must be defined:

- The IP address: 0.0.0.0 allows NP to read from all IPs.
- The TP number of Tug1 is 31.
- The TP number of Tug2 must consequently be 32.
- ID of the tug objects is 31 and 32, respectively.



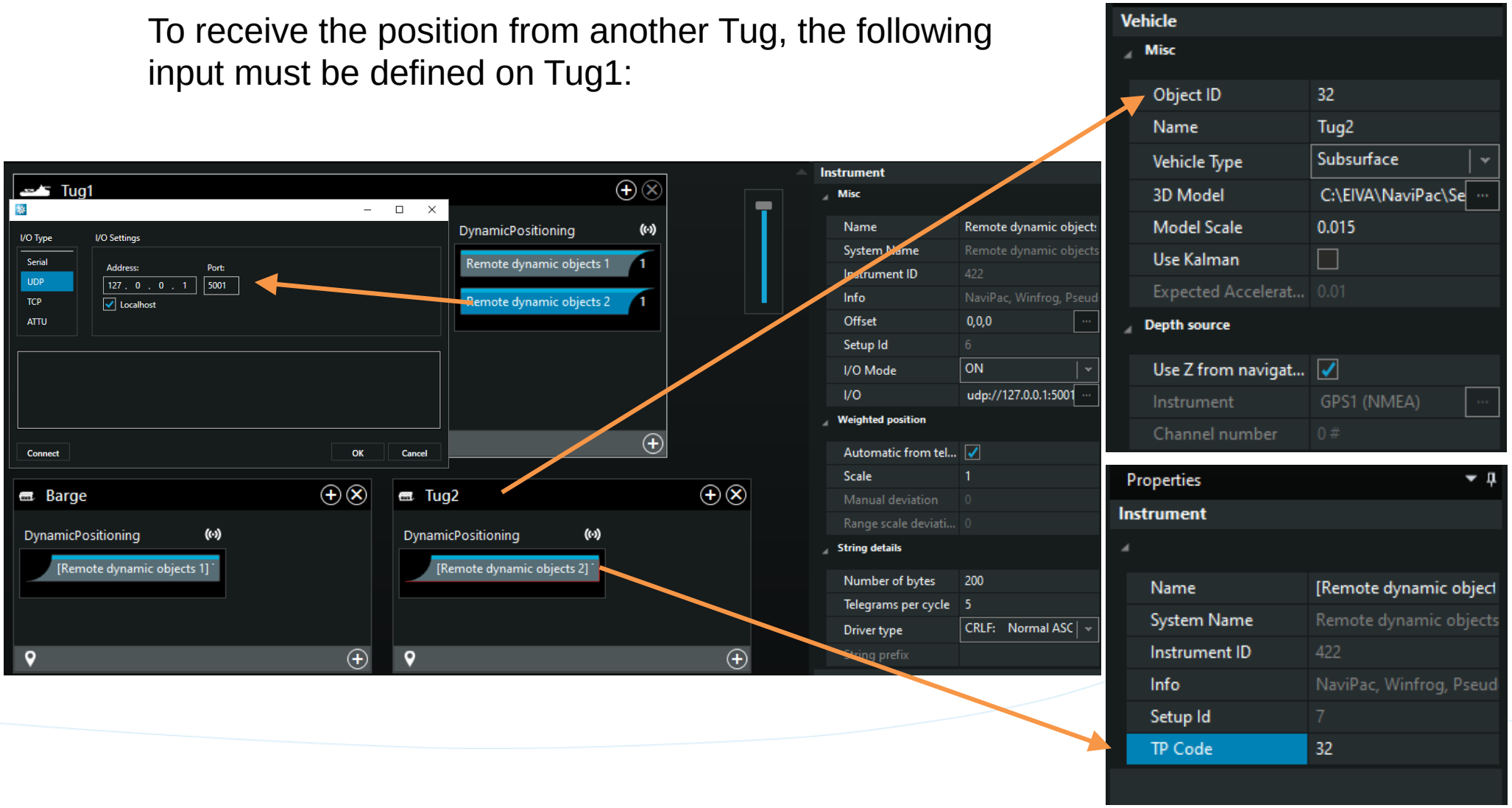
NaviPac – Tug1 – Receive Tug2 Position



To receive the position from another Tug, the following input must be defined:

NaviPac – Tug1 – Receive Tug2 Position

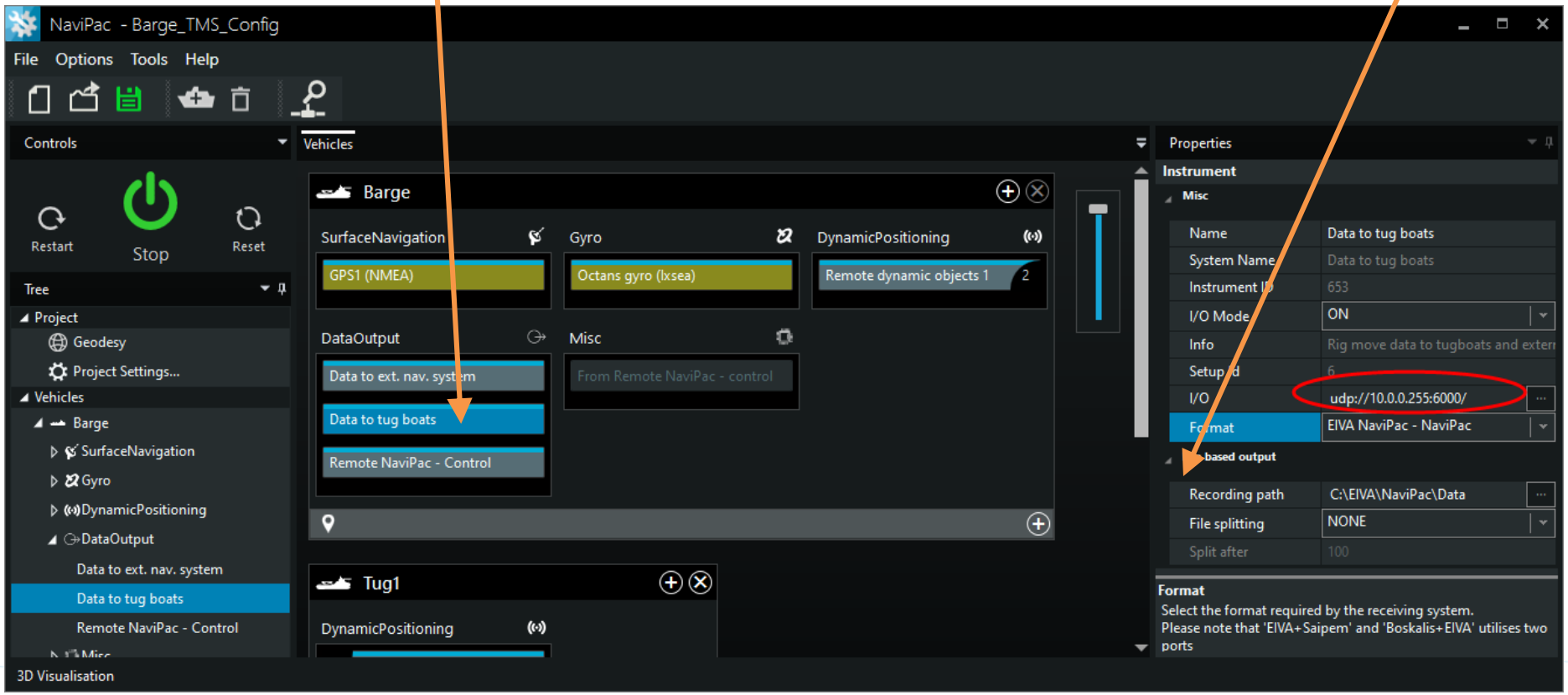
To receive the position from another Tug, the following input must be defined on Tug1:



NaviPac – Barge – Output Anchor Pattern

To send the Anchor pattern to the Tugs, a ’Data to tug boats’ output must be defined on the Barge:

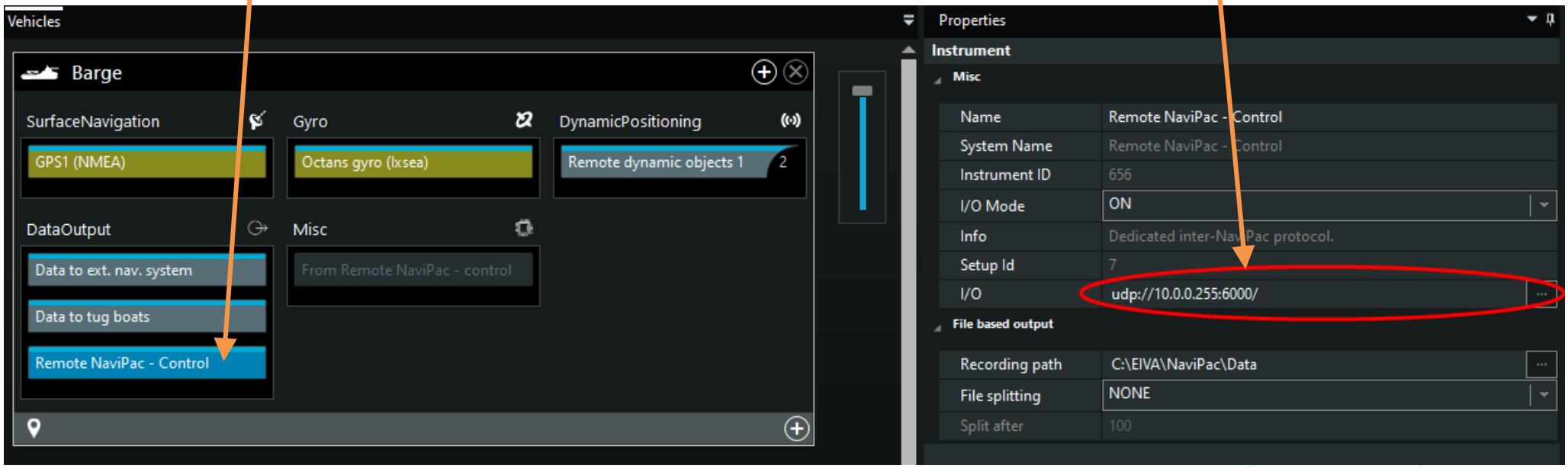
NaviPac format must be chosen.



NaviPac – Barge – Send Runlines

To send Runlines to the Tugs, a ‘Remote NaviPac – Control’ output must be defined as shown here:

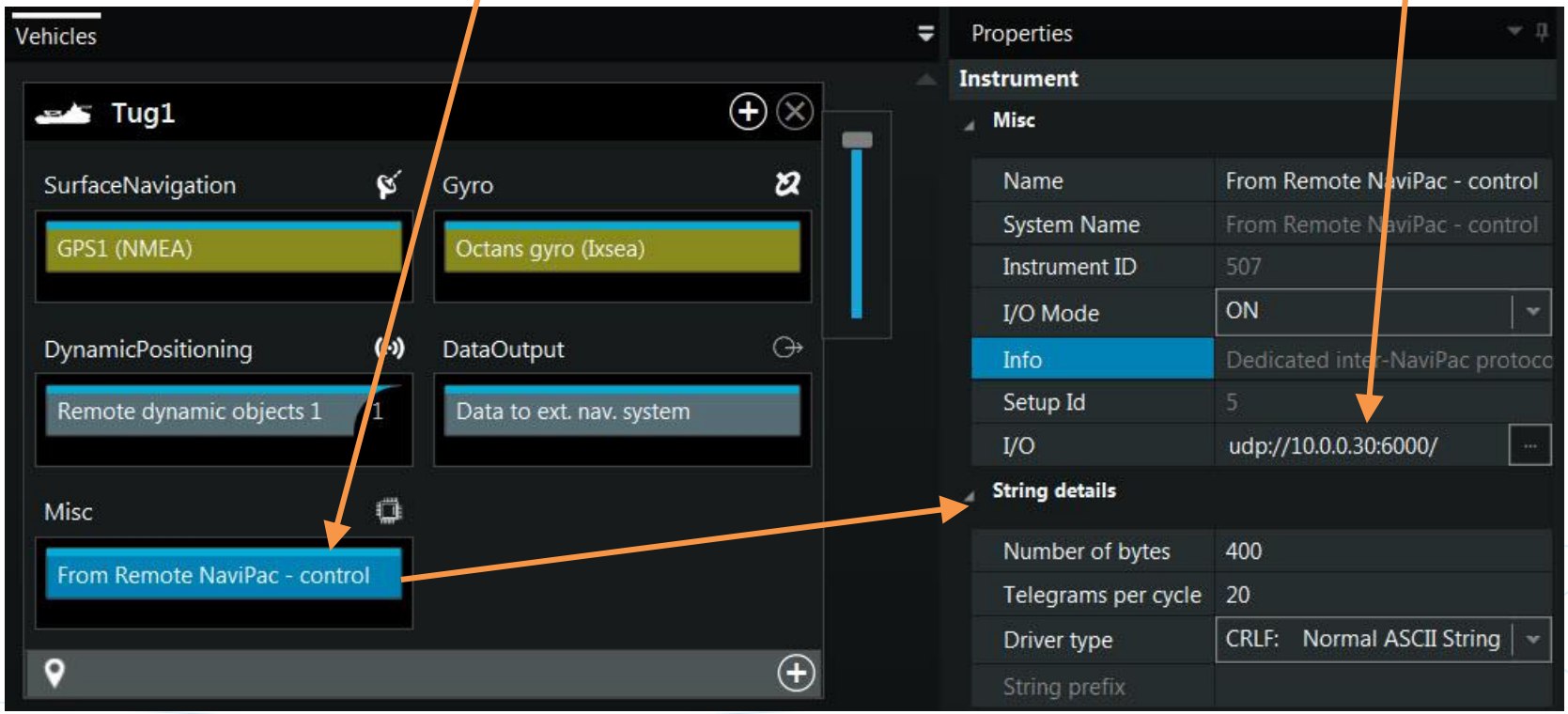
Note: same port as for ’Data to tug boats’.



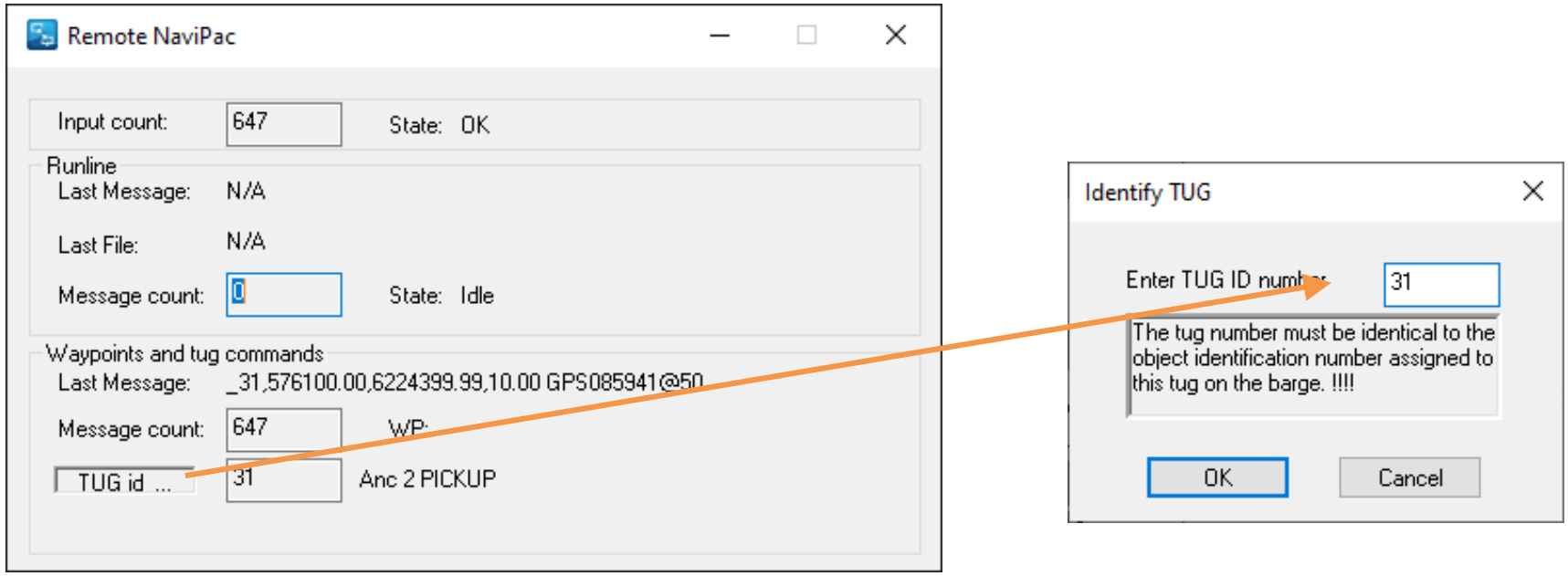
NaviPac – Tug – Receive Anchor Pattern I

To receive the anchor pattern on a tug, a 'From Remote NaviPac – control' Misc input must be defined:

The IP address: 10.0.0.30 is the IP address of the Barge computer.



NaviPac – Tug – Receive Anchor Pattern II



To receive the anchor pattern on the Tug, the Remote NaviPac window will be opened automatically when entering online mode. Click on the ’TUG id’ text-box and the window to the right will open. Now insert the ID (31 for Tug 1 etc). NaviPac will remember this setting.

NaviPac – Messages from Tug to Barge

The operator on the tug can activate some anchor-related commands towards the barge. The activation takes place from the Helmsman's Display of the Tug:

- PICKED UP - The anchor has been picked up from barge (state becomes 'Tracking').
- DROPPED - The anchor has been dropped on the seabed (state becomes 'Laid').
- DE-ASSIGN - The assignment is rejected from the Tug
- FIX - Various events performed on the tug (will be shown on HD of the Barge).

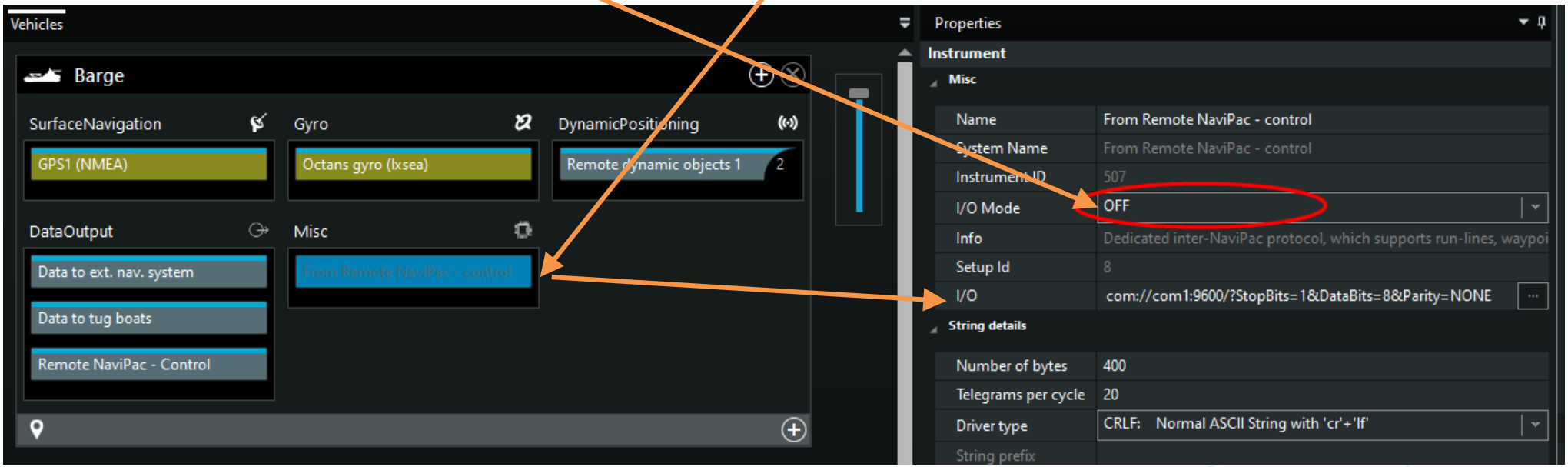
The commands are sent on top of the existing 'Data to external navigation system' output, so no additional setup is required on the tug boat.

The data output (on the Tugs) must be selected to 'NaviPac + Tug state' or 'Expanded NaviPac'.

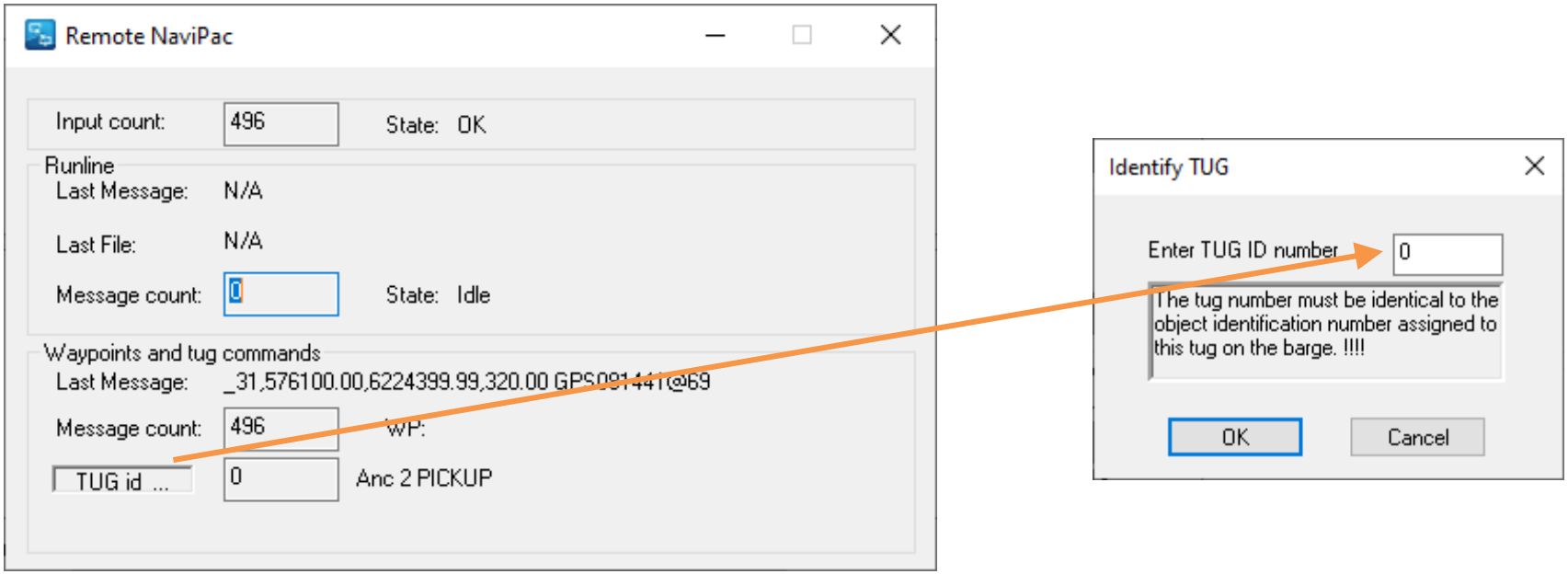
NaviPac – Barge - Messages from the Tugs I

A ‘Misc’ instrument, ‘From Remote NaviPac – control’, must be defined on the Barge, in order to enable the Barge NaviPac to be capable of using the in-coming tug commands.

As the data is overlaid the general navigation data (from the Tug) the driver must be specified to I/O mode ‘Off’.

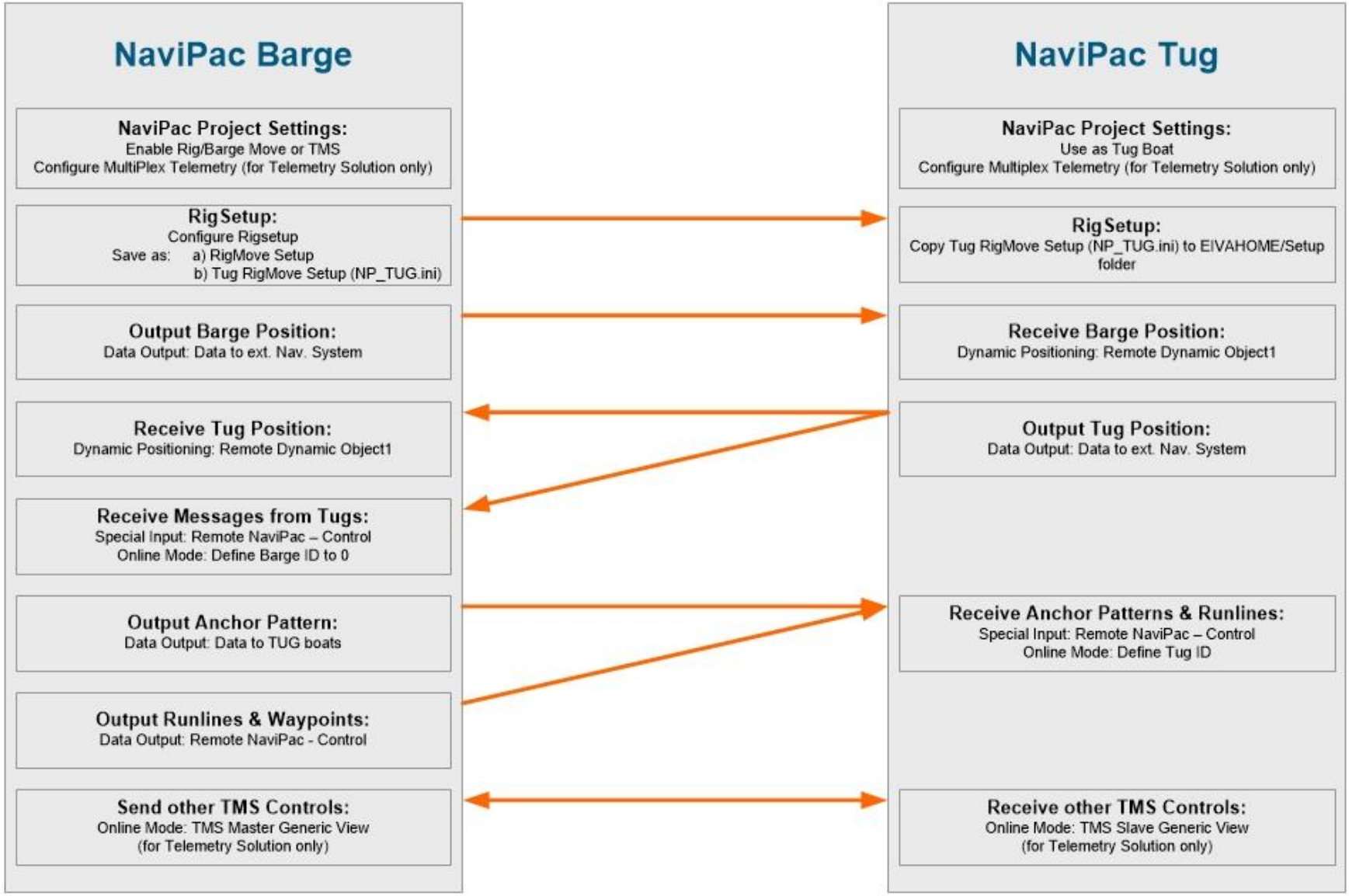


NaviPac – Messages from the Tugs II



When in online mode, click on the ’TUG id’ text-box and the window to the right will open. Now insert the ID (0 - telling that this is the barge). NaviPac will remember this setting. The window should never be closed, as it acts as interface between the NaviPac kernel (interpreter) and the TMS kernel (RigMon).

NaviPac 4 TMS - Schematic Overview



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