THE MOBILISER

LOCATIONS · PORTS · CONNECTIONS · DRAWING

User Manual

The vessel survey set-up
with a set-up drawing, port lists and clash checks

Version 1.0

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1 Introduction

The Mobiliser records how the survey spread is set up on a vessel: where everything is, what is plugged into what, and what every COM port, UDP / TCP port, multiplexer channel and video output is for. From that it draws the set-up, lists every port and IP address, checks for clashes and makes a set-up report for the vessel.

It replaces the mobilisation spreadsheets and hand-drawn sketches: the next person on board, the office or the client can see the whole set-up at a glance, and the change log shows what has been changed since.

You want to	Use
Record the job and vessel	The Job tab (section 3)
Add the rooms, ROVs and equipment	Locations & equipment (section 4)
Set up a COM, UDP / TCP or video port	The ports of each item (section 5)
Say what is plugged into what	Connections (section 6)
See the set-up drawn	Drawing (section 7)
Find a port, an IP address or a clash	Port lists and Checks (sections 8 and 9)
Send the set-up report	File > Export set-up report (section 11)

2 Getting started

2.1 Installing and starting

Copy **Mobiliser.exe** into a folder of your choice and double-click it. There is no installer. The program opens the last set-up you used. You can also drag a set-up file (.mobil) onto Mobiliser.exe to open it.

> **Note**
> The first time you start the program, Windows may show a **Windows protected your PC** message. Click **More info**, then **Run anyway**.

2.2 The main window

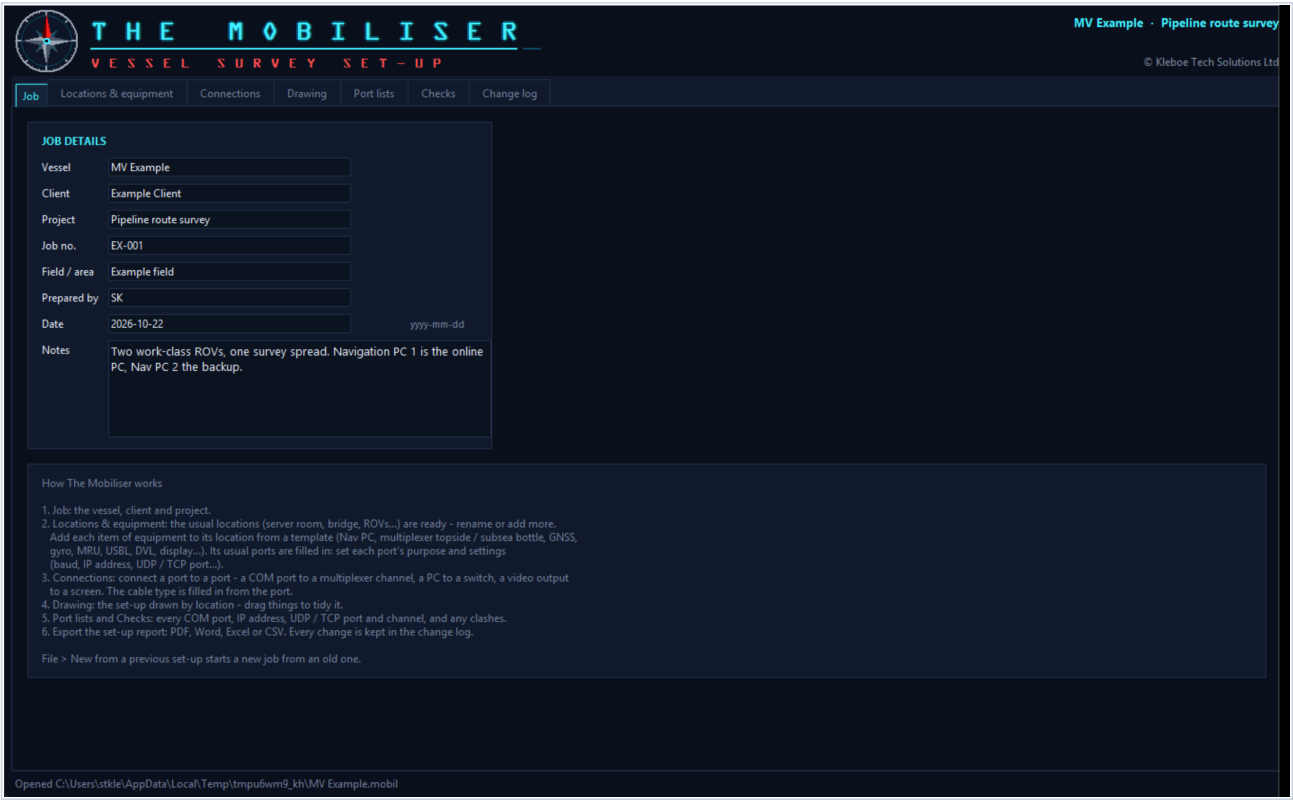
The window has seven tabs, in the order you usually work: **Job**, **Locations & equipment**, **Connections**, **Drawing**, **Port lists**, **Checks** and **Change log**. The menus have File (set-ups and the report), Edit (add things, your initials) and Help.

> **Tip**
> **File > Open the example** opens a finished set-up for a made-up vessel with two ROVs. The pictures in this manual are of the example.

2.3 Saving

File > Save (Ctrl+S) saves the set-up as a .mobil file. Once it has a file name, it saves itself after every change. **File > New set-up** starts an empty one with the usual locations ready.

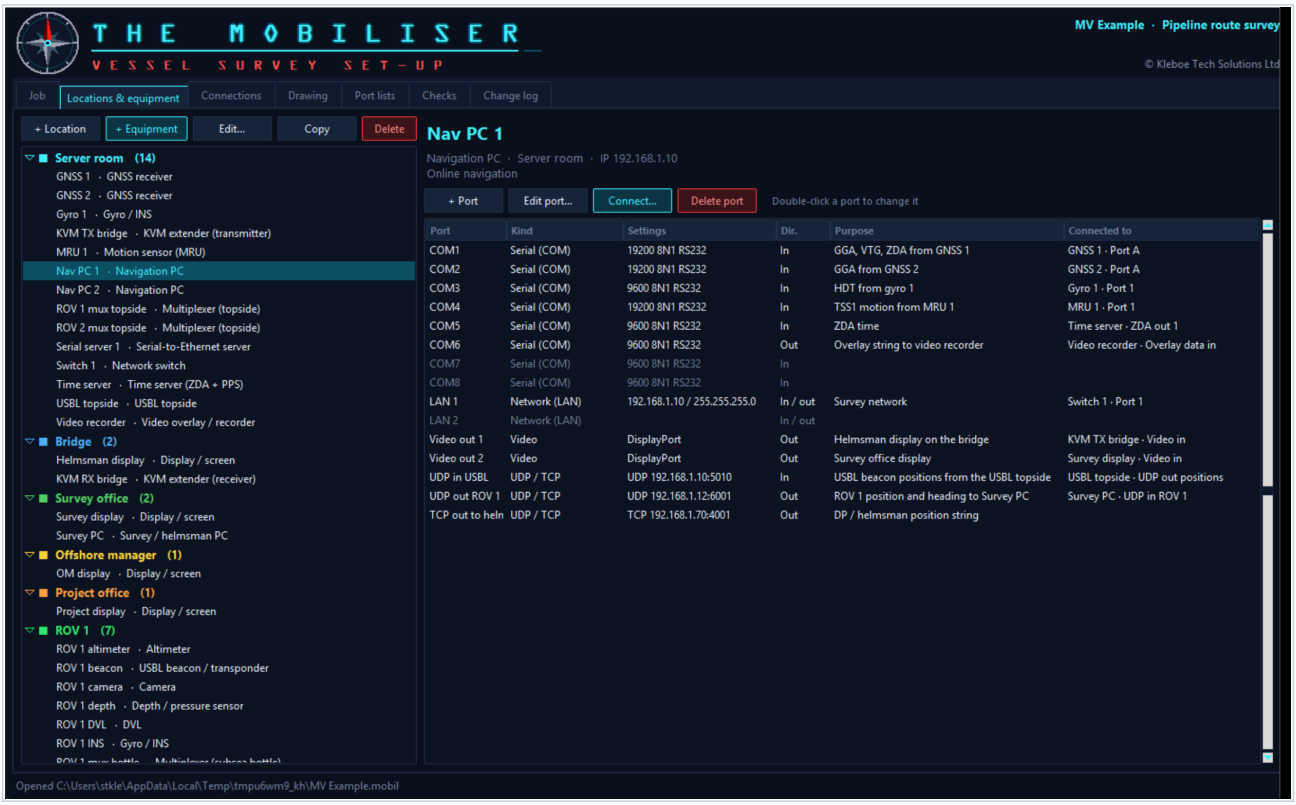
3 The job



The Job tab.

Type the **vessel**, **client**, **project**, **job no.**, **field / area**, who it was **prepared by** and the **date**. They are printed at the top of the set-up report. **Notes** are printed under them - for example which PC is online and which is the backup.

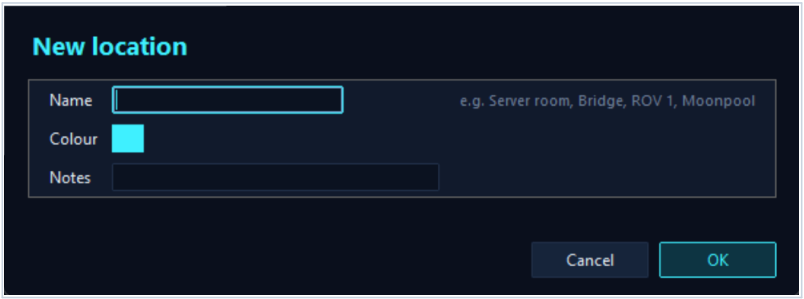
4 Locations and equipment



Locations & equipment: the locations and their equipment on the left, the ports of the chosen item on the right.

4.1 Locations

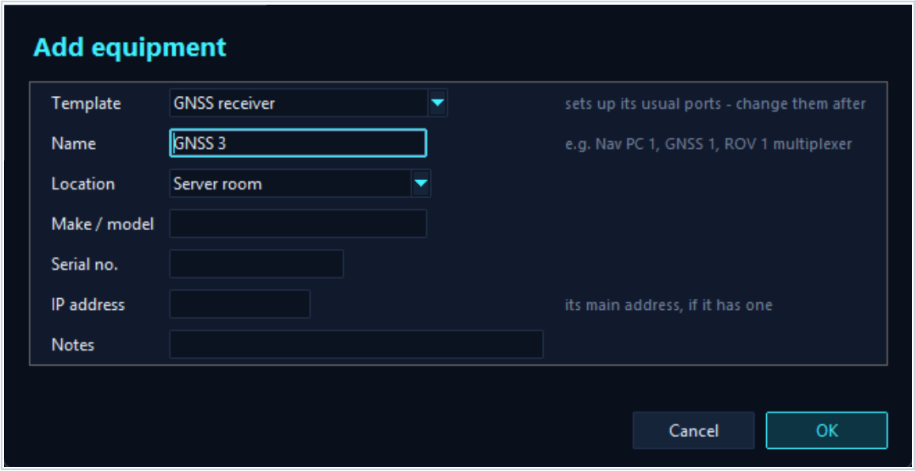
A location is anywhere equipment is: a room, a vehicle or an area. A new set-up starts with **Server room**, **Bridge**, **Survey office**, **Offshore manager**, **Project office**, **ROV 1** and **ROV 2**. Click **+ Location** to add another (for example *Moonpool*, *Instrument room* or *Tow fish*), and double-click a location to rename it or change its colour. Each location has its own colour in the list and on the drawing.



Adding a location.

4.2 Adding equipment

Choose a location and click **+ Equipment**. Pick a **template**: it fills in the item's usual ports, so you only need to set them up. Then give it a **name**, check its **location**, and if you like its **make / model**, **serial no.**, main **IP address** and **notes**.



Adding a GNSS receiver from its template.

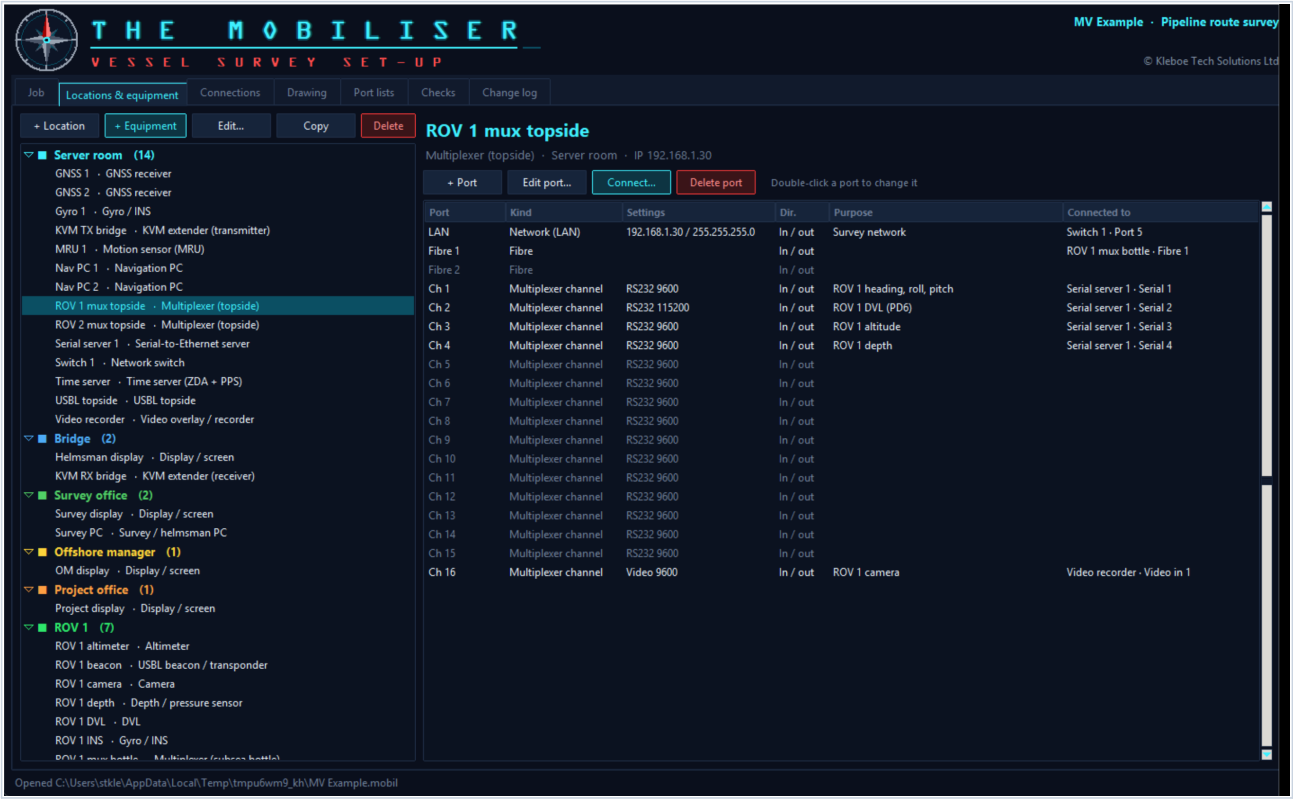
Template	Ports it starts with
Navigation PC	COM1 to COM8, LAN 1 and 2, two video outputs
Survey / helmsman PC	COM1 to COM4, LAN 1, one video output
Multiplexer (topside)	LAN, two fibres, channels 1 to 16
Multiplexer (subsea bottle)	Two fibres, channels 1 to 16
GNSS receiver	Ports A to C, LAN, 1PPS out
Gyro / INS, Motion sensor (MRU)	Serial outputs (and LAN for the gyro / INS)
USBL topside, transceiver, beacon	LAN and serial; deck cable; none
DVL, altimeter, depth sensor, SV probe	One serial output
Multibeam (topside / sonar head)	LAN, position, motion, heading and time inputs, 1PPS; head cable
Network switch, Serial-to-Ethernet server	Eight network ports; LAN and serial 1 to 8
Display, KVM extender, Camera, Video overlay / recorder	Video inputs and outputs
Time server (ZDA + PPS)	ZDA and 1PPS outputs, LAN
Other equipment	No ports - add your own

4.3 Changing, copying and deleting

- **Edit…** (or double-click) changes an item - including moving it to another location.
- **Copy** makes a copy of an item with the same ports (but no connections), for example a second GNSS.
- **Delete** deletes an item and its connections. A location can only be deleted once it is empty.

5 Ports

The right-hand side of Locations & equipment lists the chosen item's ports: name, kind, settings, direction, purpose and what it is connected to. Ports with no purpose and no connection are greyed out - they are spare.

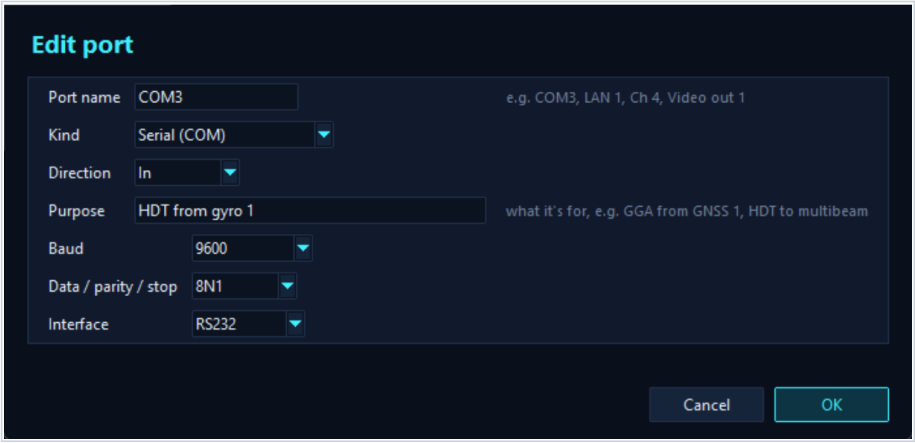


The ports of a multiplexer topside: channels 1 to 4 carry the ROV sensors to the serial server.

5.1 Setting up a port

Double-click a port (or select it and click **Edit port…**), or click **+ Port** to add one. Every port has a **name**, a **kind**, a **direction** (In, Out or In / out) and a **purpose** - what it is for, such as *HDT from gyro 1* or *ROV 1 depth*. The other settings depend on the kind:

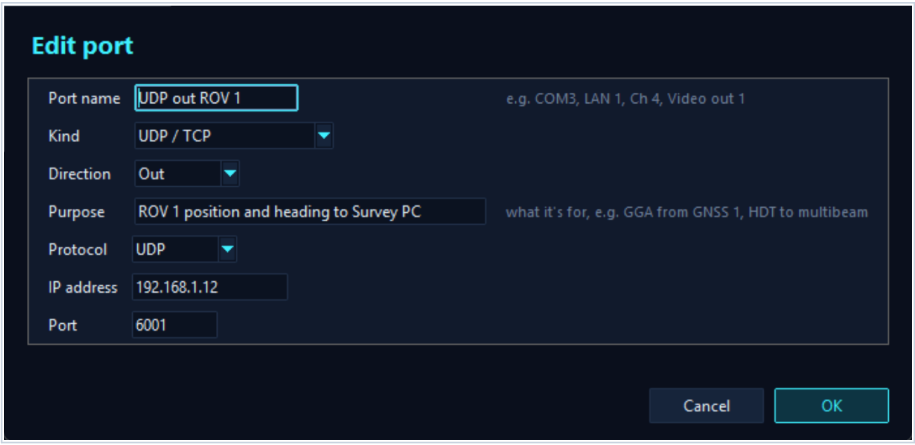
Kind	Settings
Serial (COM)	Baud, data / parity / stop (e.g. 8N1), interface (RS232, RS422, RS485)
UDP / TCP	Protocol, IP address, port number
Network (LAN)	IP address, subnet, gateway
Multiplexer channel	Interface (RS232, RS422, RS485, Ethernet, video, analogue), baud
Fibre	Connector, fibre number
Video	Connector (HDMI, DVI, DisplayPort, VGA, SDI, composite, KVM)
Other	Just the name, direction and purpose (e.g. 1PPS, deck cable)



A COM port on the navigation PC.

5.2 UDP and TCP ports

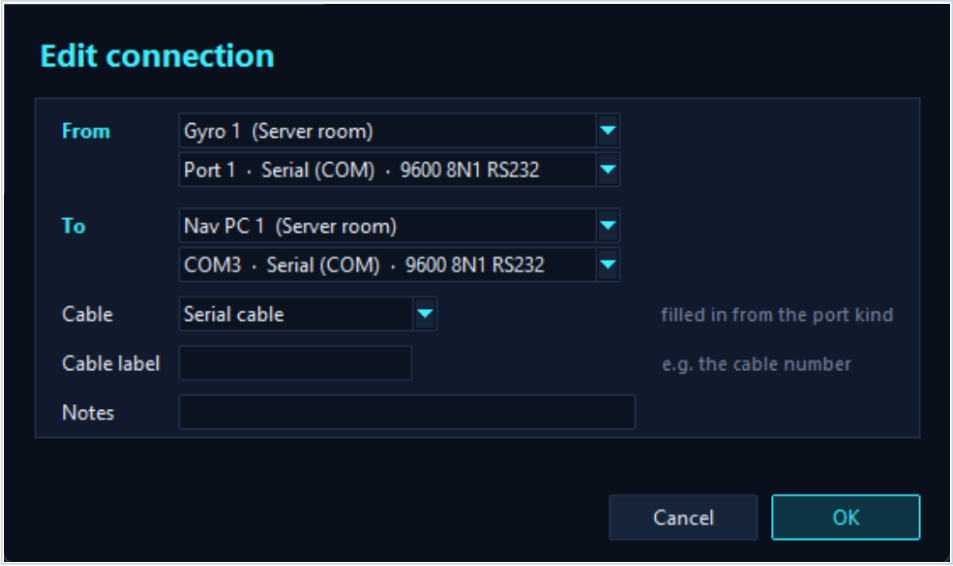
A program sending or receiving data over the network is a **UDP / TCP** port: add one to the PC for each stream, with the protocol, the IP address it is sent to (or received on) and the port number. Connect the sending port to the receiving port, and the Checks tab will find two programs listening on the same port.



A UDP output from the navigation PC to the survey PC.

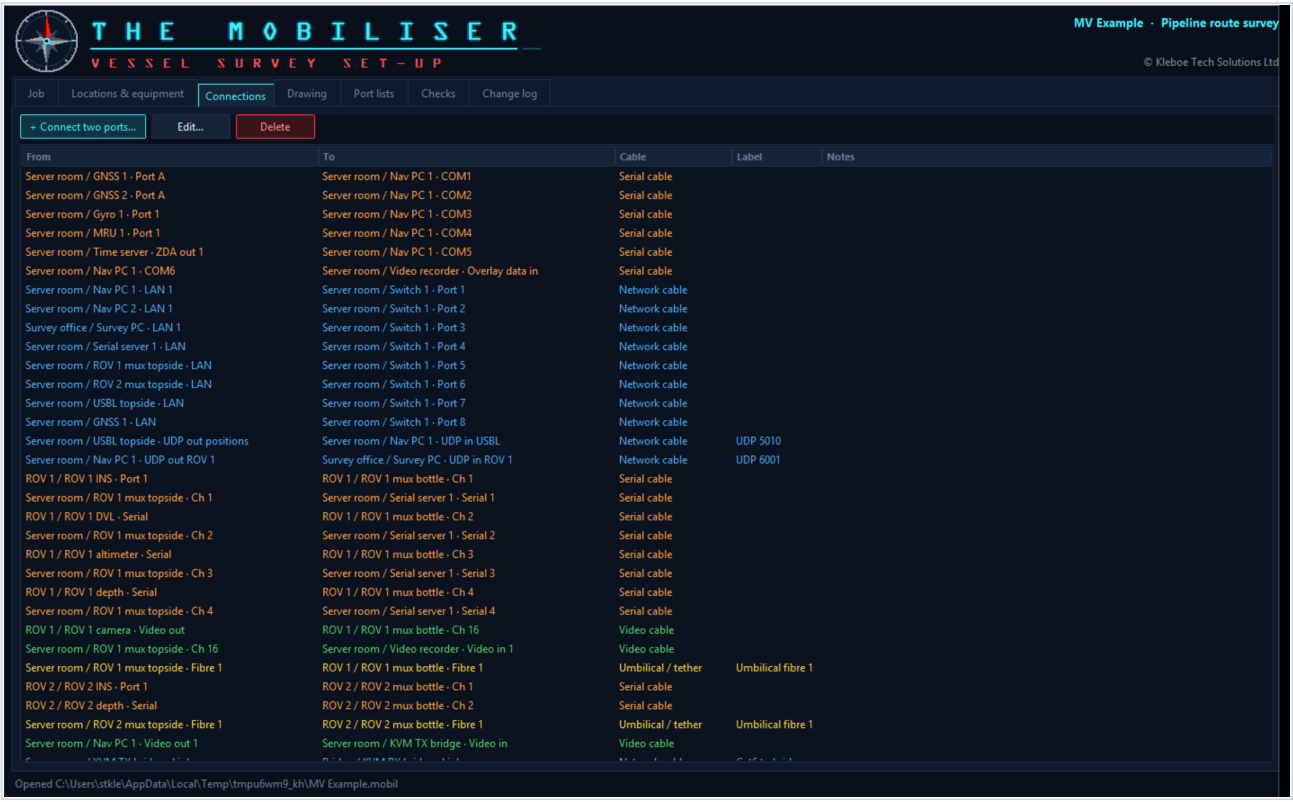
6 Connections

A connection joins two ports: a GNSS output to a COM port, a PC to a switch, a multiplexer channel to a sensor, a video output to a screen. Click **+ Connect two ports…** on the Connections tab, or select a port on Locations & equipment and click **Connect…** so that end is filled in already.



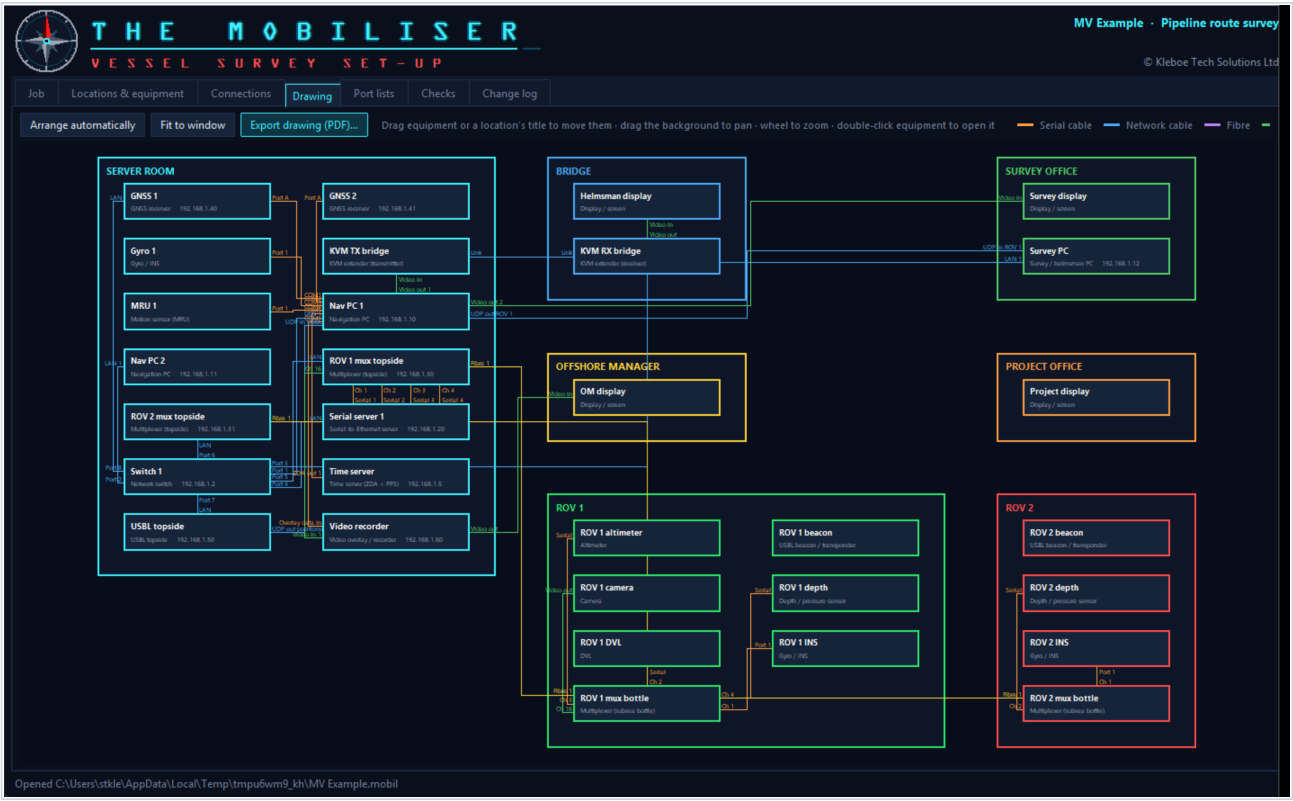
Connecting gyro 1 to COM3 of the navigation PC.

- Choose the equipment, then the port, at each end. The ports are listed with their kind and settings.
- The **cable** is filled in from the port kind: serial cable, network cable, fibre, video cable, umbilical / tether or other. Change it if you like.
- Type the **cable label** (the number on the cable) and any notes.



The Connections tab: every connection, coloured by cable type. Double-click one to change it.

7 The drawing



The example's set-up drawing.

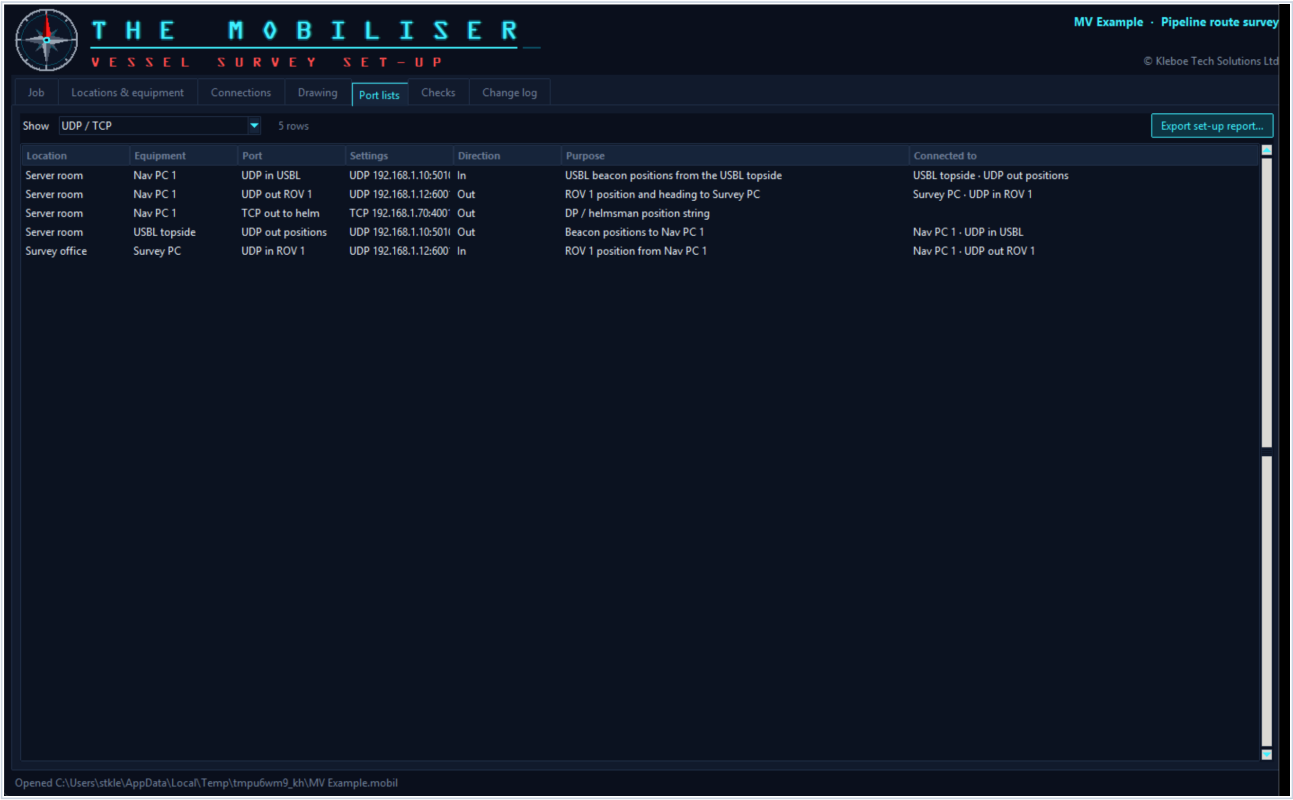
The Drawing tab draws the whole set-up: each location as a box in its colour with its equipment inside, and every connection as a line coloured by cable type, with the port name at each end. It is drawn for you the first time; after that you can tidy it:

- **Drag an item** to move it, or **drag a location's title** to move the location with everything in it.
- **Drag the background** to move round the drawing, and use the **mouse wheel** to zoom.
- **Double-click an item** to open it on the Locations & equipment tab.
- **Arrange automatically** draws it again from scratch; **Fit to window** fits it on screen.
- **Export drawing (PDF)…** saves the drawing on its own, on landscape A4.

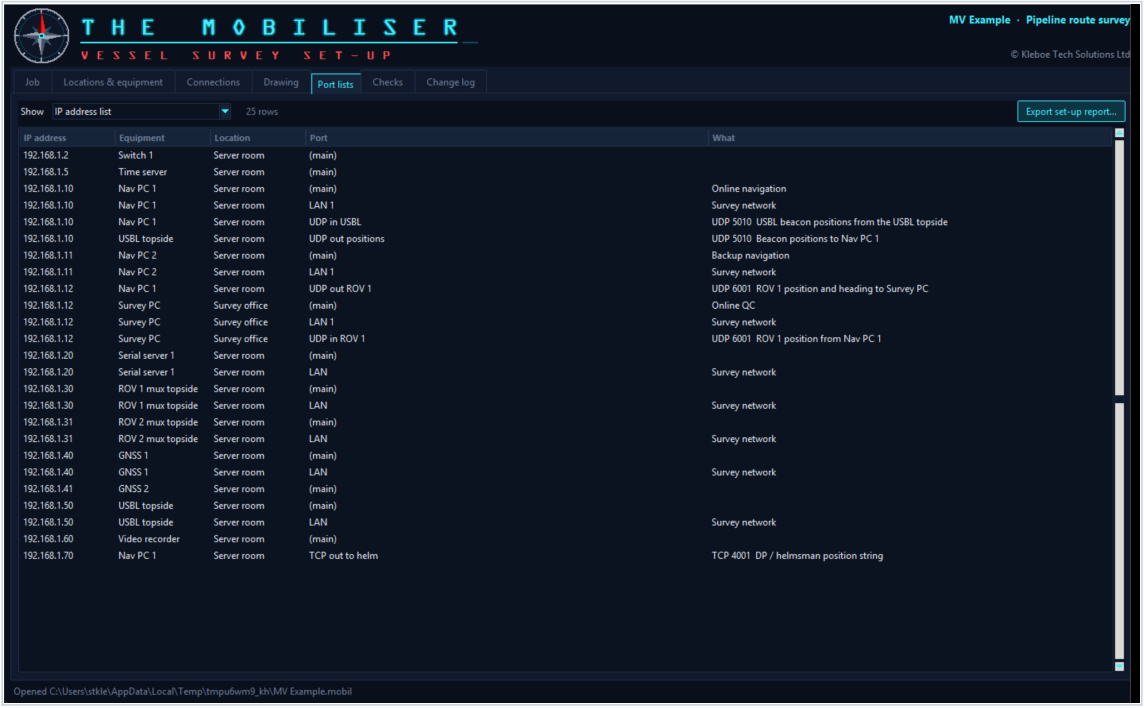
Lines between items in the same column go round the outside so they don't cross the items in between. Lines between locations far apart can cross another location: move the locations to tidy them.

8 Port lists

The Port lists tab shows every port of one kind, across the whole vessel, with its location, equipment, settings, direction, purpose and connection. Choose the list in **Show**: COM ports, UDP / TCP, Network (LAN) and IP addresses, Multiplexer channels, Video and screens, Fibres, Other ports, the **IP address list** (every address in order) or the **Equipment register**.



Every UDP / TCP port on the vessel.



The IP address list, in address order.

9 Checks

The Checks tab looks for mistakes in the set-up. The tab shows how many clashes there are, so you can see them from any tab.

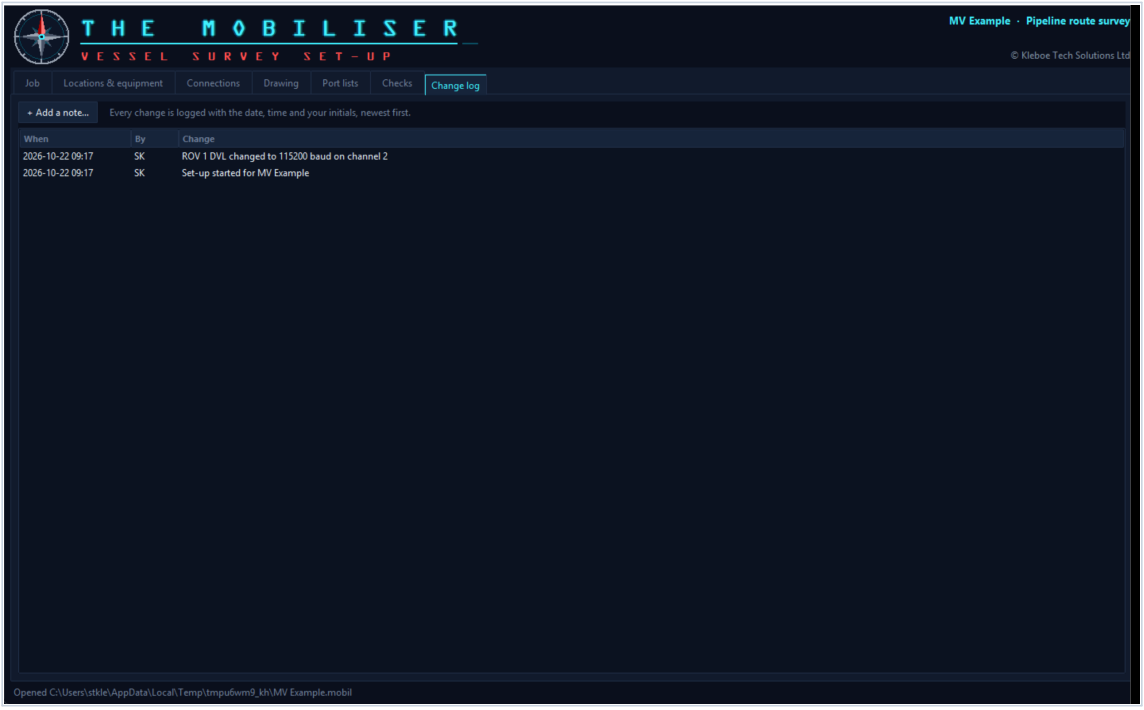
Level	Check
Clash (red)	The same IP address on two items; an IP address that isn't valid; the same UDP / TCP port received on the same address by two ports; a connection to a port that has been deleted.
Check (amber)	A COM port, multiplexer channel or fibre with more than one connection; the two ends of a serial link at different baud rates or data / parity / stop settings; two outputs or two inputs wired together; equipment with no location.
Note (grey)	How many ports are spare; ports that are connected but have no purpose written.

Two clashes: the same IP address on both navigation PCs, and two programs on UDP port 6001.

10 The change log and reusing a set-up

10.1 The change log

Every change - an item added, a port changed (with its old and new settings), a connection made - is written in the change log with the date, time and your initials. **+ Add a note…** adds anything else, such as *GNSS 2 antenna moved to the aft mast*. The first time you change something you are asked for your initials (**Edit > Your initials** changes them).



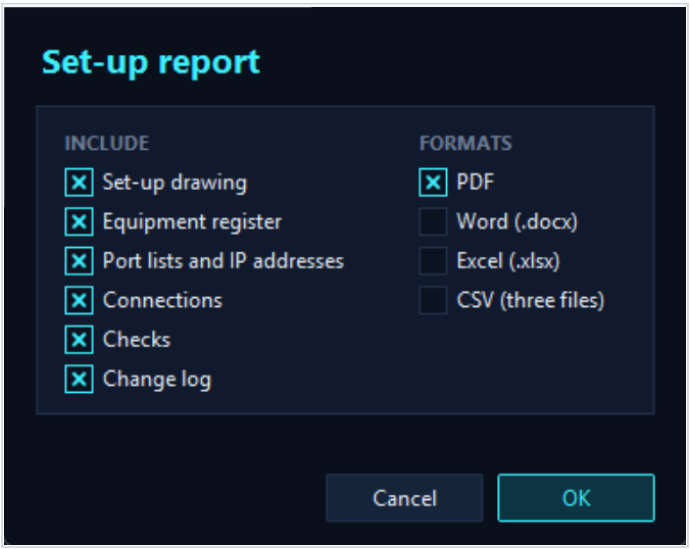
The change log, newest first.

10.2 Starting from a previous set-up

File > New from a previous set-up… copies a set-up - locations, equipment, ports and connections - into a new job. The job details and the change log start empty (the vessel name is kept). Save it with a new name and change only what is different this time.

11 The set-up report

File > Export set-up report… (Ctrl+E) asks what to include and in which formats, then where to save it. The files are named *Survey_setup_<vessel>*.



Choosing the parts and formats of the report.

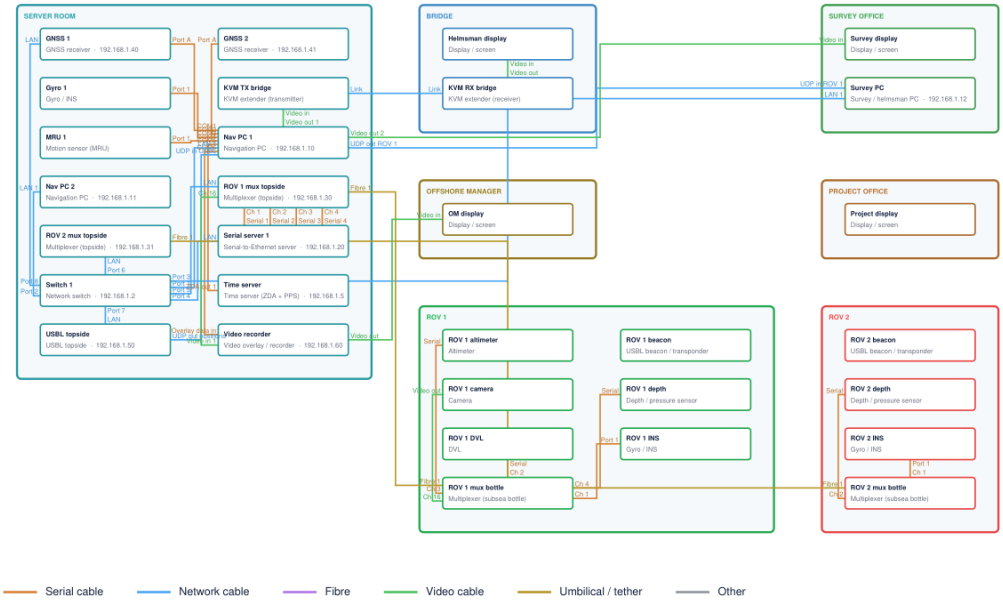
Format	What you get
PDF	Landscape A4: the job details, the set-up drawing on its own page, then the equipment register, every port list, the IP address list, the connections, the checks and the change log.
Word (.docx)	The same, as an editable document, with the drawing as a picture.
Excel (.xlsx)	A sheet for the job and one for each list, with filters.
CSV	Three files - equipment, ports and connections - for other programs.

Survey set-up · MV Example

Vessel	MV Example	Client	Example Client	Project	Pipeline route survey	Job no.	EX-001
Field / area	Example field	Prepared by	SK	Date	2026-10-22		

Two work-class ROVs, one survey spread. Navigation PC 1 is the online PC, Nav PC 2 the backup.

Set-up drawing



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Page 1 of the example's PDF report: the job and the set-up drawing.

Location	Equipment	Port	Settings	Direction	Purpose	Connected to
Server room	GNSS 1	Port C	19200 8N1 RS232	Out		
Server room	GNSS 2	Port A	19200 8N1 RS232	Out	to Nav PC 1 COM2	Nav PC 1 · COM2
Server room	GNSS 2	Port B	19200 8N1 RS232	Out		
Server room	GNSS 2	Port C	19200 8N1 RS232	Out		
Server room	Gyro 1	Port 1	9600 8N1 RS232	Out	to Nav PC 1 COM3	Nav PC 1 · COM3
Server room	Gyro 1	Port 2	9600 8N1 RS232	Out		
Server room	Gyro 1	Port 3	9600 8N1 RS232	Out		
Server room	MRU 1	Port 1	19200 8N1 RS232	Out	to Nav PC 1 COM4	Nav PC 1 · COM4
Server room	MRU 1	Port 2	19200 8N1 RS232	Out		
Server room	Nav PC 1	COM1	19200 8N1 RS232	In	GGA, VTG, ZDA from GNSS 1	GNSS 1 · Port A
Server room	Nav PC 1	COM2	19200 8N1 RS232	In	GGA from GNSS 2	GNSS 2 · Port A
Server room	Nav PC 1	COM3	9600 8N1 RS232	In	HDT from gyro 1	Gyro 1 · Port 1
Server room	Nav PC 1	COM4	19200 8N1 RS232	In	TSS1 motion from MRU 1	MRU 1 · Port 1
Server room	Nav PC 1	COM5	9600 8N1 RS232	In	ZDA time	Time server · ZDA out 1
Server room	Nav PC 1	COM6	9600 8N1 RS232	Out	Overlay string to video recorder	Video recorder · Overlay data in
Server room	Nav PC 1	COM7	9600 8N1 RS232	In		
Server room	Nav PC 1	COM8	9600 8N1 RS232	In		
Server room	Nav PC 2	COM1	9600 8N1 RS232	In		
Server room	Nav PC 2	COM2	9600 8N1 RS232	In		
Server room	Nav PC 2	COM3	9600 8N1 RS232	In		
Server room	Nav PC 2	COM4	9600 8N1 RS232	In		
Server room	Nav PC 2	COM5	9600 8N1 RS232	In		
Server room	Nav PC 2	COM6	9600 8N1 RS232	In		
Server room	Nav PC 2	COM7	9600 8N1 RS232	In		
Server room	Nav PC 2	COM8	9600 8N1 RS232	In		
Server room	Serial server 1	Serial 1	9600 8N1 RS232	In / out	ROV 1 heading, roll, pitch (virtual COM on Nav PC 1)	ROV 1 mux topside · Ch 1
Server room	Serial server 1	Serial 2	115200 8N1 RS232	In / out	ROV 1 DVL (PD6) (virtual COM on Nav PC 1)	ROV 1 mux topside · Ch 2
Server room	Serial server 1	Serial 3	9600 8N1 RS232	In / out	ROV 1 altitude (virtual COM on Nav PC 1)	ROV 1 mux topside · Ch 3
Server room	Serial server 1	Serial 4	9600 8N1 RS232	In / out	ROV 1 depth (virtual COM on Nav PC 1)	ROV 1 mux topside · Ch 4
Server room	Serial server 1	Serial 5	9600 8N1 RS232	In / out		
Server room	Serial server 1	Serial 6	9600 8N1 RS232	In / out		
Server room	Serial server 1	Serial 7	9600 8N1 RS232	In / out		
Server room	Serial server 1	Serial 8	9600 8N1 RS232	In / out		
Server room	Time server	ZDA out 1	9600 8N1 RS232	Out	to Nav PC 1 COM5	Nav PC 1 · COM5
Server room	Time server	ZDA out 2	9600 8N1 RS232	Out		
Server room	USBL topside	Serial 1	9600 8N1 RS232	In / out		
Server room	USBL topside	Serial 2	9600 8N1 RS232	In / out		

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A page of the COM port list.

12 Trial and licence

The program runs as a free 48-hour trial with everything working. A bar under the title shows how long is left. After that it needs a Survey Software Suite licence key: click **Enter licence key…**, paste the key from the email and click **Activate**. One key unlocks every program in the suite on the PC, on up to 4 PCs. With a licence the bar goes, and the window title shows **Licensed until** and the date. The licence is checked online now and then and works for up to 30 days at a time without internet. Your set-up files are never affected.

13 Troubleshooting

Problem	What to check
A port I need isn't on the item	Select the item and click + Port. Templates are a start - add or delete ports freely.
The port isn't in the list when connecting	Choose the equipment first; then its ports are listed.
“IP address … is used by 2 items”	Two items have the same address - change one (Locations & equipment, or the port's IP address).
“… are connected but set to different baud rates”	Set both ends the same, or correct whichever is wrong.
The drawing is untidy	Drag the items and locations, or click Arrange automatically.
An item is in the wrong location	Edit it and choose the right location; it moves on the drawing too.
The report won't save	Close it in the PDF viewer, Word or the spreadsheet, and export again.

Keyboard shortcuts

Keys	Command
Ctrl+N / Ctrl+O / Ctrl+S	New, open and save a set-up
Ctrl+E	Export the set-up report