

## IVSP 2.0 MANUAL

Welcome to the new iVSP 2.0!

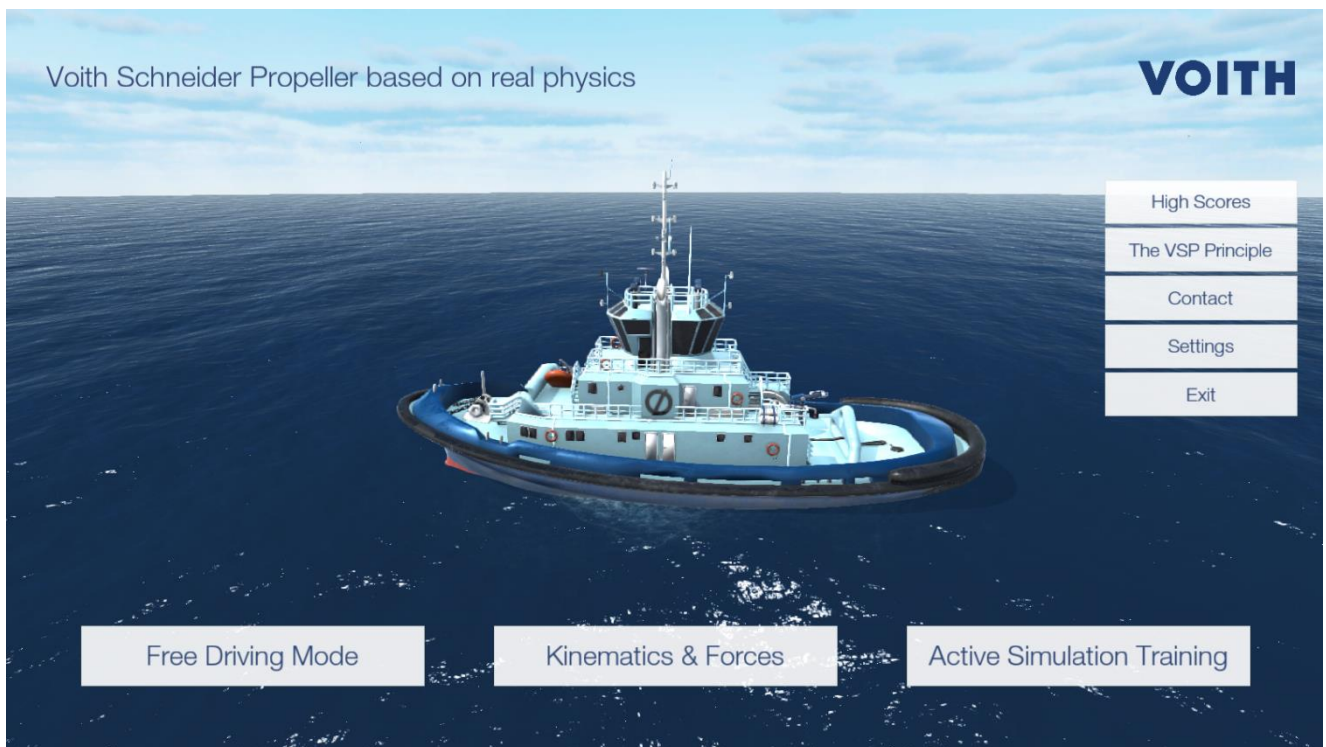
The program this manual is based on is a remake of Voith's iVSP in 3D and based on real physics.

This manual will explain the main features of iVSP 2.0

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## 1. MAIN MENU

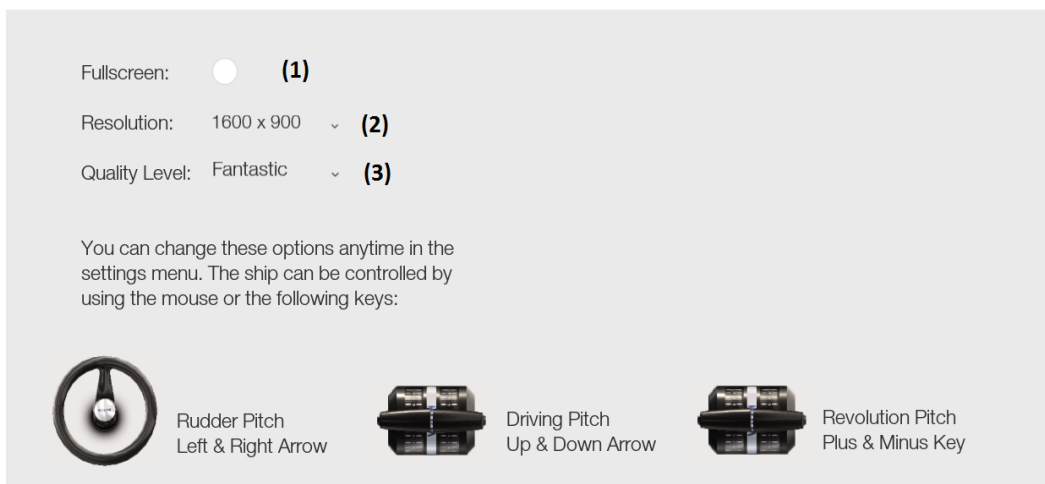


After starting iVSP 2.0 you automatically get to the Main Menu of the application. In its center the model of a tug boat is displayed. This model is used in the core features of the program.

On the right hand side there are some menu points of which the first one, named “High Scores”, presents you with a list of the results from the Training Courses. “The VSP Principle” shows some information about the Voith Schneider Propeller and provides a link to the Voith homepage for further information. Under “Contact” you find information about how to contact Voith. “Exit” closes the application.

In the Settings menu you can choose between Fullscreen and Window Mode (1) and set the resolution (2) and quality (3) of the application. If the performance is insufficient, try a smaller resolution and a lower quality level.

### Settings



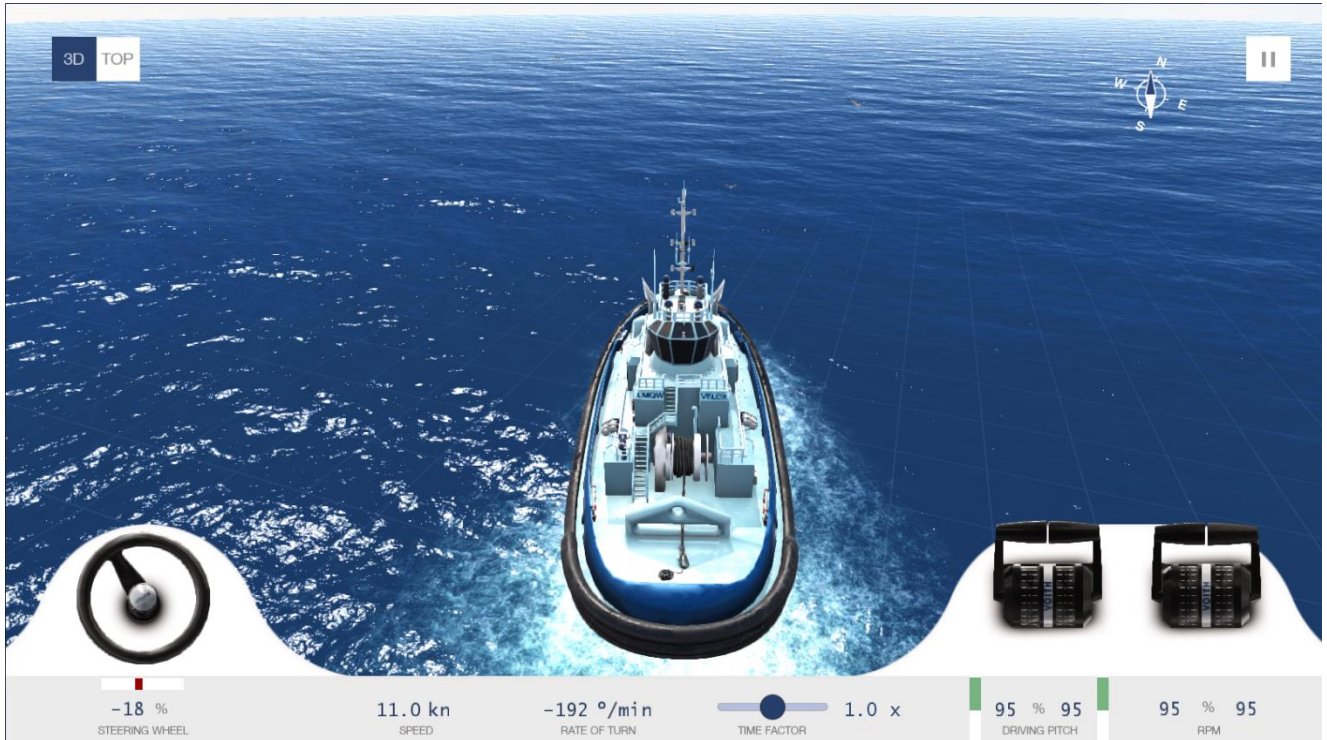
The three buttons near the bottom of the application’s Main Window take you to the different core modes of iVSP 2.0: The explanatory mode (Free Driving in 3D view and Kinematics and Forces in Top view) and the Active Simulation Training.

## 2. EXPLANATORY MODE

This mode explains how the Voith Schneider Propeller works, lets you experience how it feels to control a tug boat with our propellers and shows what a ship is able to do with such a propulsion system.

### 2.1 FREE DRIVING (3D VIEW)

The following picture is taken from “Free Driving” you can access from the main program menu:



This mode provides a never ending water plane to steer the ship around.

On the Screen below the on-screen controls you can see the exact values the controls are set to, as well as the speed of the ship and the rate of turn. The steering wheel can be dragged around using the mouse to change its value or alternatively you can use the left and right arrow keys on the keyboard. The Driving Pitch and RPM Levers can be clicked and dragged, too. Here you can choose to control both VSPs at once (click in the middle of the handle) or control the VSPs one at a time (by clicking on the left or right side of the handles). You can also set the values using the keyboard – up and down arrow keys for Driving Pitch and plus and minus key for RPM. Combine this with holding ctrl or alt key to control only one Vsp (ctrl key for the left one, alt key for the right one).

By clicking the pause button on the upper right corner you can get back to the main menu.

You can also change the time factor using the slider at the bottom center to see everything in slow motion or to fasten it up.

On the upper left corner you see two buttons “3D” and “TOP”. Now you are in 3D mode and can click on “TOP” to get to the kinematics view.

## 2.2 KINEMATICS (TOP VIEW)



If you clicked on the button “Kinematics and Forces” in the main menu or on the button “Top” in Free Driving Mode you get this view where you can see the ship from above. The arrows at the front and back show to which direction the ship is moving. On the left and right side there are 3D models of the propellers. You can watch how the mechanical elements (called kinematic linkage) of the VSP react to the control units.

You can also rotate the propeller models by clicking and dragging them to see it from every side.

The control units and displays are the same as in 3D view mode. You can get back to the free driving mode by clicking on the button “3D” in the upper left corner or you can change to the hydrodynamic view by clicking on the button “Hydrodynamic Forces”.

## 2.3 HYDRODYNAMIC FORCES (TOP VIEW)



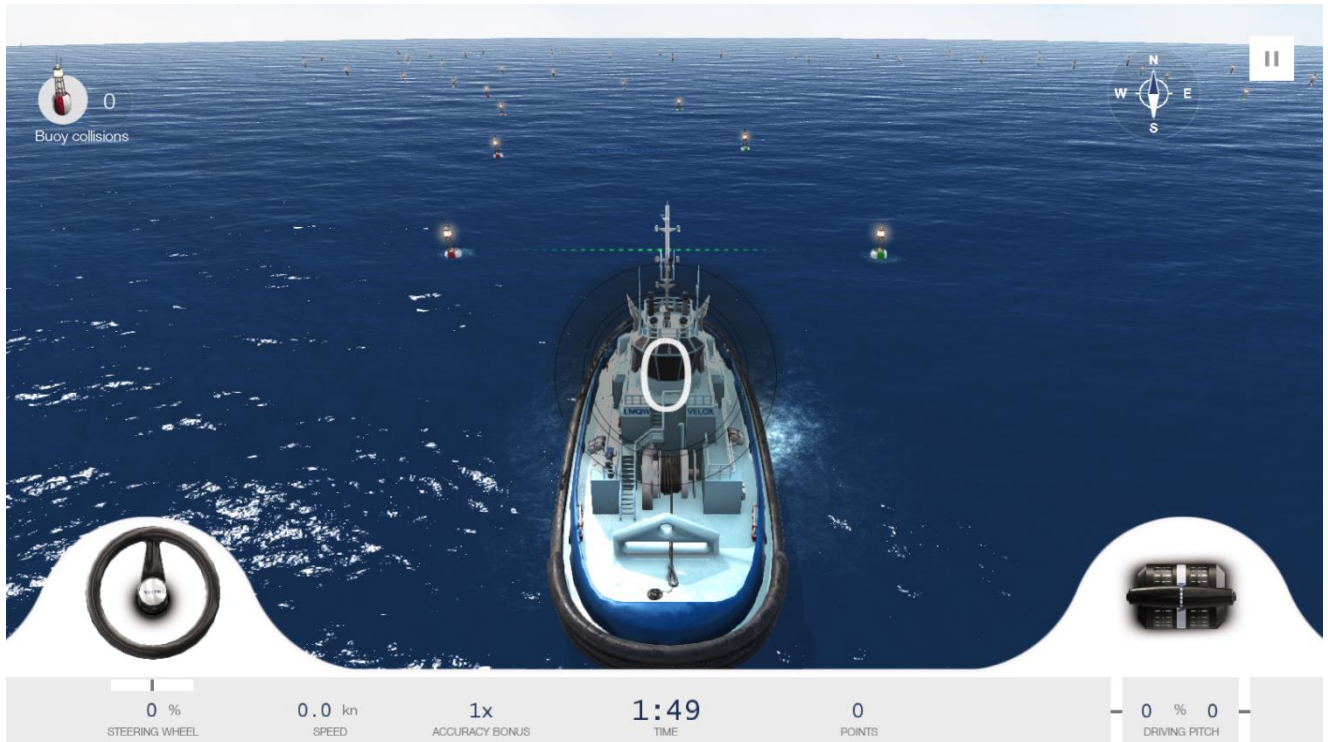
In the hydrodynamic forces view you can see the ship from above and the arrows at the ship show its moving direction. On the left and right side is a schematic propeller with its blades and the steering point (crosshair). The colored arrows show the thrust at every single blade and the total thrust (green arrow) of the propeller. To provide better understanding of the principle of operation the propeller's forces are displayed as static thrust. So the forces in the schematics are displayed having their full effect instantly without being dependent on drag, incident flow or other environmental forces. Whereas the forces being applied to the bow and stern of the ship's top down view are, in contrast, subject to drag, incident flow and other environmental forces.

To get back to the main menu click on the pause button in the upper right corner, to get back to the kinematics view click on “Kinematics” and if you want to go back to 3D view and the free driving mode click on “3D” in the upper left corner.



## 3. ACTIVE SIMULATION TRAINING

If you click the button “Active Simulation Training” in the main menu, you can choose your training challenge. Currently there is a single one available, but more will follow. In the buoy course you can test and improve your steering abilities.



The buoy course lets you control the ship using the steering wheel and the driving pitch lever. (rpm of each VSP is fixed at 95%). The time factor in this mode is set to 2x .

You can either use the mouse or the arrow keys to set the values.

When countdown has reached 0, time is running and the green blinking line shows you the next buoys between which the ship must pass.

Not hitting buoys will increase your accuracy bonus and you get more points for each passage. If you hit a buoy you will get -1000 points and the accuracy bonus will drop to 1.

If you crossed the last passage your total score will be calculated and you can choose to save it in the Highscore list and compare it to earlier results. If there is still time remaining after you passed the finish line you will get bonus points, so try to find the shortest way through the buoy course.

By clicking the pause button in the upper right corner you can either pause the game, restart it or go back to the main menu.