NAVI-CONNING 3000

(VERSION 4.01.00)

USER MANUAL

This document contains:

PREAMBLE

This chapter provides general information required for work with the document.

DATA REQUIRED FOR HANDLING THIS DESCRIPTION

The aim of this book is to provide the user with guidelines for handling "Navi-Conning 3000" application, "Play Back" utility and NC 3000 indicators description.

The description is divided into 4 parts:

Chapter 1 Handling Navi-Conning 3000 Application.

Chapter 2 Parameters Display Setup.

Chapter 3 Handling Play Back Utility.

Annex Screen View Indicator Table.

LIST OF DOCUMENTS

- Navi-Conning 3000 (version 4.01.00). Installation Guide;
- Navi-Conning 3000 (version 4.01.00). User Manual.

PRINTING HOUSE CONVENTIONS

Sample of an entry	Comments on the use
NAVI-CONNING 3000 (V. 4.01.00). USER MANUAL	To highlight documents which there are references to
Annex	To highlight, in a printed document, names of this document sections
Name	To highlight functions, Navi-Conning interface elements, etc. described in the document
<Enter>	To highlight keyboard key names
"Next>"	To highlight, in a printed document, names of a utilities, windows, buttons, etc.

LIST OF ABBREVIATIONS

- ADC – Analog-to-Digital Converter;
- BTW – Bearing To Waypoint;
- CB – Conning Box;
- COG – Course Over Ground;
- DTW – Distance To Waypoint;
- NC 3000 – Navi-Conning;
- NMEA – National Marine Electronics Association;
- NS – Navi-Sailor;
- PC – Personal Computer;
- ROT – Rate Of Turn;
- RPM – Revolution Per Minute;
- Sec – Second;
- SOG – Speed Over Ground;
- UTC – Universal Time Coordinated;
- WP – Way Point;
- XTE – Cross Track Error.

CHAPTER 1

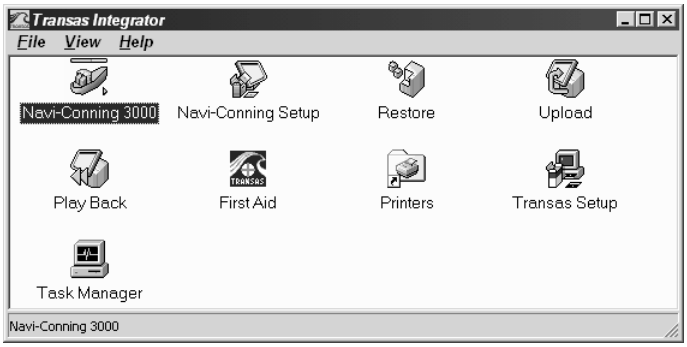
Handling Navi-Conning 3000 Application

This chapter provides a description of “Navi-Conning 3000” application handling procedures.

TURNING ON/OFF NAVI-CONNING APPLICATION

To Turn NC on

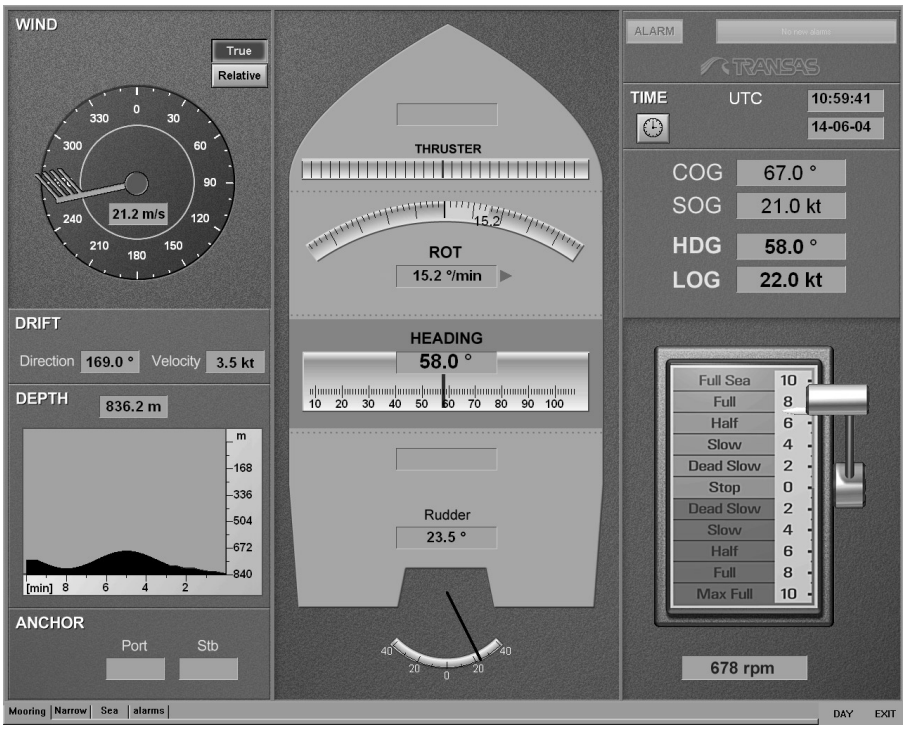
Run “Navi-Conning 3000” application by selecting the appropriate icon in “Transas Integrator” window.



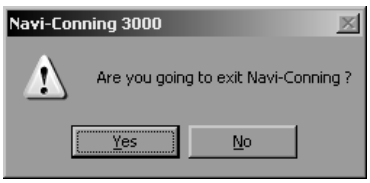
After the program start, the NC 3000 screen will be displayed.

To Turn NC off

To exit from “Navi-Conning” application, press “Exit” button in the right bottom corner of the NC 3000 screen.



Press “Yes” button to confirm exit from “Navi-Conning 3000” application.



The program will be closed.

SWITCHING SCREEN COLOUR PALETTES

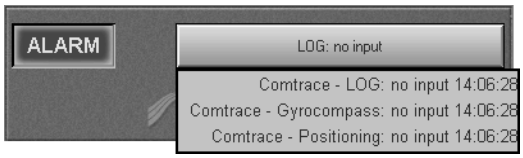
To switch the screen colour palettes, press “Day/Night” button in the right bottom part of the NC 3000 screen.

ALARM ACKNOWLEDGEMENT

For the display of an alarm status, there is a special window in the top right part of the screen view.

The right hand button displays a message about what caused the triggering off of the most recent alarm. Press the right hand button to acknowledge this alarm. The current alarm can also be acknowledged by pressing <Ctrl>+<A> hot keys.

To obtain more detailed information, press “Alarm” button.



The drop-down list displays names of all the alarms whose cause, which triggered them off, is not currently eliminated. The list specifies:

- Source of the parameter;
- Alarm name;
- Alarm type;
- Triggering-off time.

Position the cursor on the alarm message in the list of generated alarms, press the left trackball/mouse button.

The acknowledged alarm message will change its colour. Acknowledge all the alarms.

Alarms can also be acknowledged in “Alarms” Screen View table by pressing the indicator button the left of the alarm name (see document **NAVI-CONNING 3000 (V. 4.01.00). INSTALLATION GUIDE**, **Chapter 1**, paragraph **“Alarms” Screen View**).

HOT KEYS

The following hot keys are used in the operation of “Navi-Conning” application:

- <Alt>+<F1> – to switch to the day-time palette;
- <Alt>+<F4> – to switch to the nocturnal palette;
- <Tab> – to switch Screen Views;
- <Alt>+<X> – to exit from “Navi-Conning” program;
- <Ctrl>+<A> – to acknowledge an alarm.

CHAPTER 2

Parameters Display Setup

This chapter describes setup of parameters display on the Screen Views.

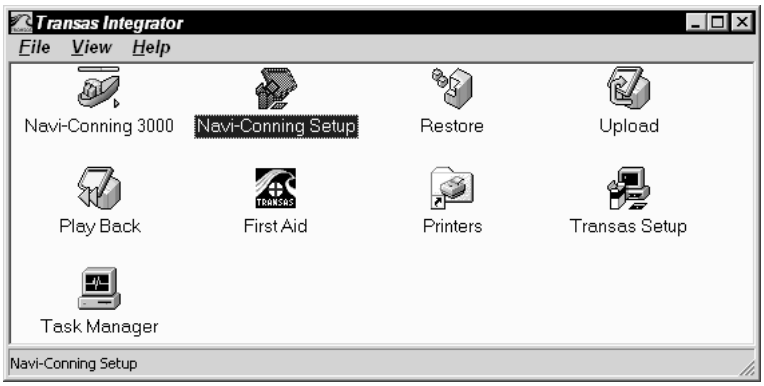
GENERAL

Setup of parameter display on the Screen Views varies with the indicator type. The base Screen Views use the following indicator types (for the outward appearance of indicators see **Screen View Indicator Table** in **Annex**):

- Data Monitoring;
- Data Monitoring with direction;
- Data Characteristic;
- Coordinates;
- Date and Time;
- Route;
- Nav. Lights;
- Time Graphic;
- Compass Line;
- Engine (bitmaps);
- Wind (bitmaps);
- Arrow with round ruler;
- Line Progress Bar;
- Round Progress Bar;
- XTE.

Note: For the external appearance of the indicators listed above see **Screen View Indicator Table** in **Annex**.

Run “Navi-Conning Setup” application by selecting the appropriate icon in “Transas Integrator” window.

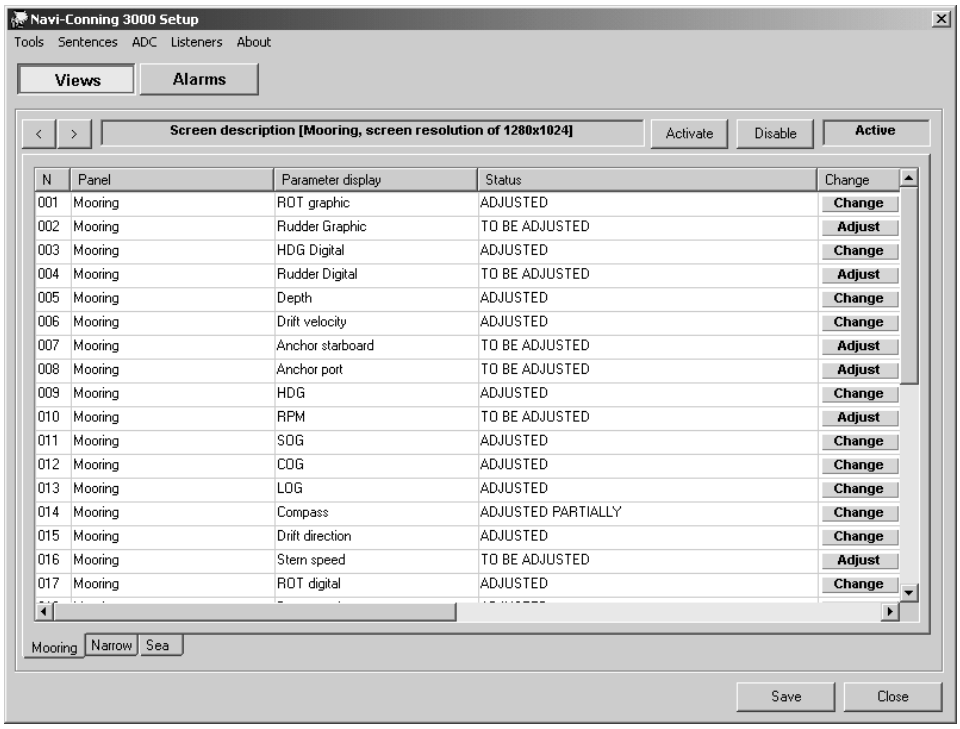


To set up the display of parameters, use the tab in the bottom part of the utility’s Main window to select the necessary Screen View.

ATTENTION!

For the indicator setup, parameter should already be connected to them (see document **NAVI-CONNING 3000 (V. 4.01.00). INSTALLATION GUIDE**, **Chapter 2**, paragraph **Input Data Display Setup**).

Select the necessary indicator.



The indicator status, depending on the previous setup, is displayed in “Status” column:

- **ADJUSTED** – connection of all the parameters which are displayed on the Screen View with the aid of this indicator;
- **ADJUSTED PARTIALLY** – parameters which are displayed on the Screen View via this indicator are partially connected;
- **TO BE ADJUSTED** – none of the parameters displayed on the Screen View via this indicator is connected.

To set up the display of parameters, press a button in “Change” column; depending on the status, this button has the following name:

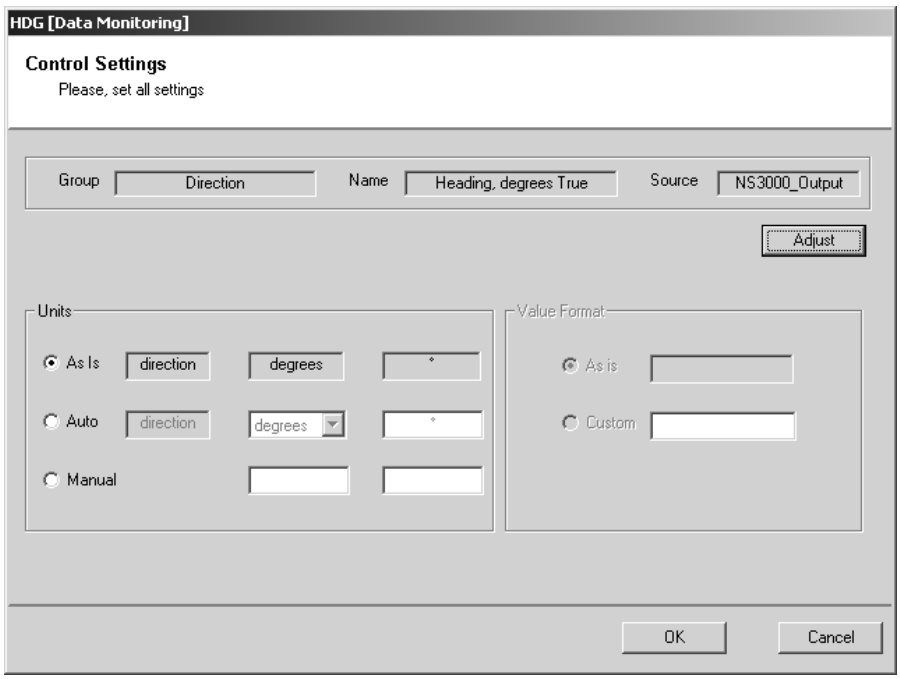
- Change – for indicators with **ADJUSTED** and **ADJUSTED PARTIALLY** status;
- Adjust – for indicators with **TO BE ADJUSTED** status.

DATA MONITORING, DATA MONITORING “ETA PILOT”

“Data Monitoring” indicators are intended for the display of parameters in the digital form only, measurement units specified.

This type includes the following indicators: “HDG Digital”, “Rudder digital”, “Depth”, “Drift velocity”, “Drift direction”, “Anchor starboard”, “Anchor port”, “HDG”, “RPM”, “SOG”, “COG”, “LOG”, “DWT”, “BTW”, “HDOP”, “Number of Satellite”, “Waypoint ID”, “Age of diff”. Indicator “ETA Pilot” is displayed on the alternative Screen View.

For the description of parameters displayed on these indicators, see **Screen View Indicator Table** in **Annex**.



By default, the parameter will be displayed on the Screen View in the same measurement units as supplied by the parameter source (in **Units** group, **As Is** option button is selected).

In addition to the usual functions of indicator “Data Monitoring”, the indicator “Data Monitoring ETA Pilot” provides triggering off the visual warnings (background colour turns red).

ATTENTION!

Measurement units supplied by the parameter source (**As Is** line) are used in “Auto” and “Manual” modes for re-calculations to the new measurement units with appropriate coefficients. Therefore, for the correct operation of “Auto” mode using “Units” database, it is necessary that measurement units supplied by the parameter source should be in “Units” database system (see document **NAVI-CONNING 3000 (V. 4.01.00). INSTALLATION GUIDE**, paragraph **Creating and Editing Measurement Units Database** of **Annex A**).

NC 3000 program allows setting any measurement units for a parameters displayed on the Screen View, the exception constituted by networked parameters. To do this, select **Auto** option button in **Units** group and select necessary measurement units out of those available in "Units" database. In this case, the parameter will be displayed on the Screen View in the measurement units re-calculated on the basis of **Units** database.

Where it is necessary to use measurement units not contained in "Units" database, select **Manual** option button in **Units** group. Use the boxes to the right of the option button to enter the re-calculation coefficient (see document **NAVI-CONNING 3000 (v. 4.01.00). INSTALLATION GUIDE**, paragraph **Creating and Editing Measurement Units Database** of **Annex A**) and a shortened name of the required measurement units. In this case, the parameter will be displayed on the Screen View in measurement units re-calculated on the basis of the set coefficient and in the measurement units entered in **Manual** input box.

Press "OK" button in "Control Settings" window to save the settings you have made and exit to the Main window of "Navi-Conning 3000 Setup" utility.

Press "Save" button on the Main window of "Navi-Conning 3000 Setup" utility to save the changes you have made.

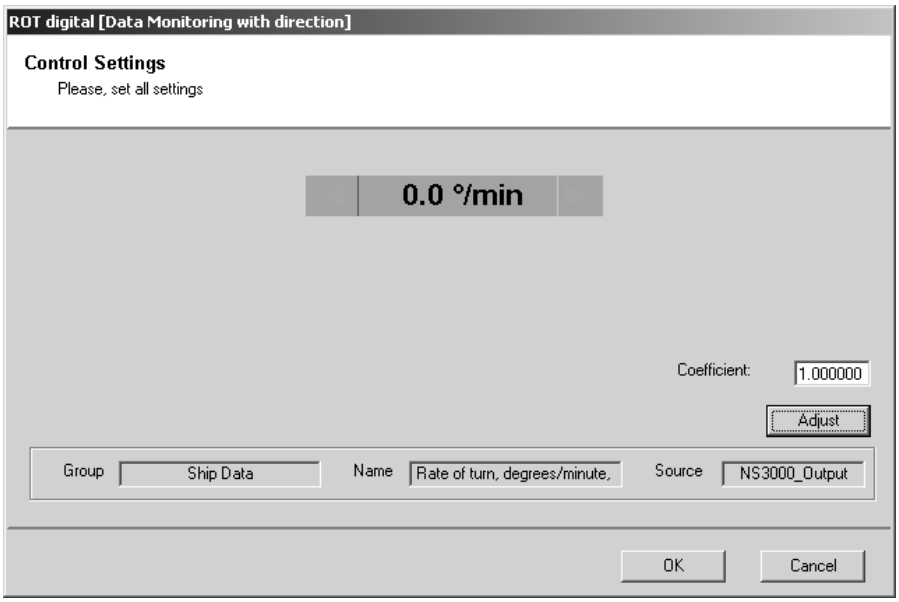
DATA MONITORING WITH DIRECTION

"Data Monitoring with direction" indicators are intended for displaying parameters in the digital form only, with the specification of the measurement units and direction depending on the sign of the parameter.

This type includes the following indicators:

- "Stern speed";
- "Bow speed";
- "XTE";
- "ROT digital".

For the description of parameters displayed on these indicators see **Screen View Indicator Table** in **Annex**.



Use **Coefficient** input box to enter the re-calculation coefficient. In this case, the parameter will be displayed on the Screen View in the set measurement units with a value re-calculated on the basis of the set coefficient.

Press “OK” button in “Control Settings” window to save the settings you have made and exit to the Main menu of “Navi-Conning 3000 Setup” utility.

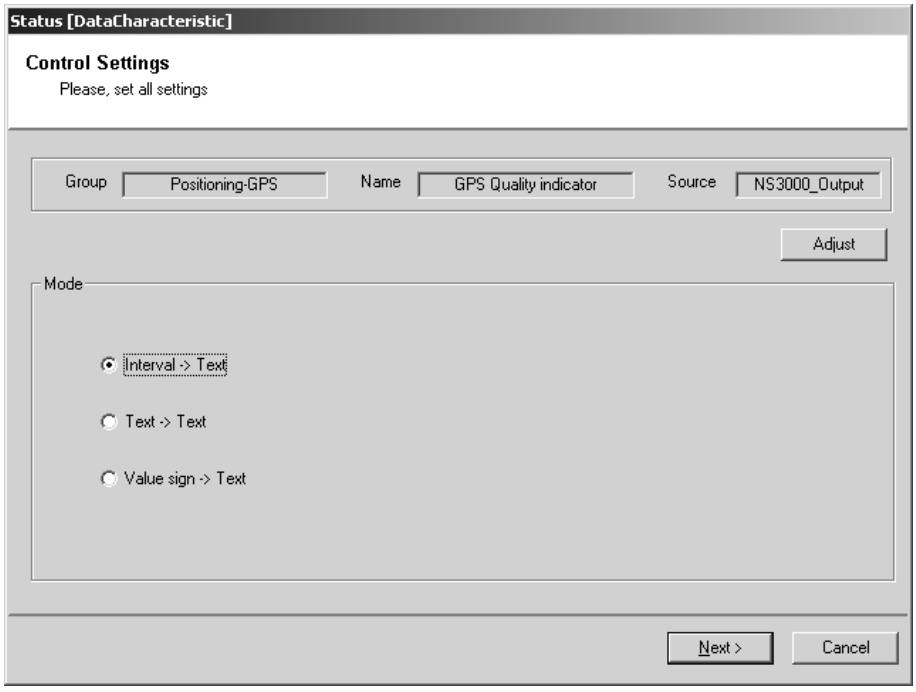
Press “Save” button on the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

DATA CHARACTERISTIC

“Data Characteristic” indicators are intended for displaying parameters in both, symbol and digital forms. This type of indicators can be used for the display of substituted information, which depends on the input data, e.g. for the on-indicator display of different texts depending on “Status”, “Reference” characteristics, as well as the Talker. To this end, boxes with these characteristics should be set for the value of the parameter, which is connected to “Data Characteristic” indicator (see document **NAVI-CONNING 3000 (V. 4.01.00). INSTALLATION GUIDE** item **Setting of Parameter Value** of paragraph **Addition of New Parameters** in **Annex A**).

This type includes “Status” indicator.

Note: With the automatic setup of the parameter display (Autoadjustment), the parameter is displayed as received from the source. Substitution for “Status” parameter is adjusted in manual mode only.

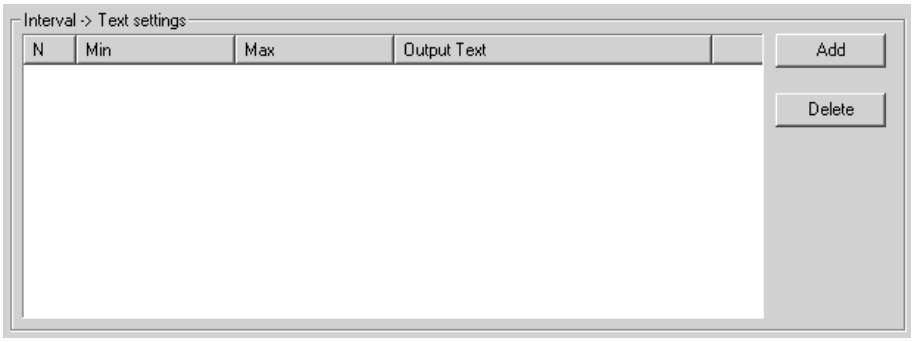


Select the substitution type and press “Next>” button.

Depending on the substitution type, the appropriate setup window will open up.

Interval -> Text

This type of substitution is used for setting correspondence between the arriving parameter value intervals and the text displayed on the Screen View.

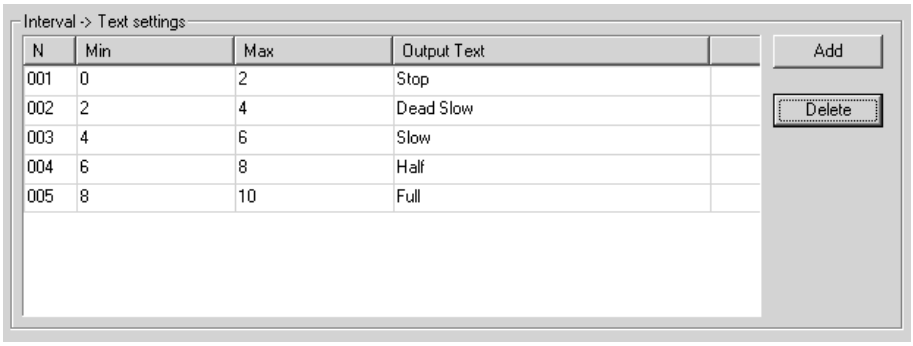


Press “Add” button. Position the cursor on the cell in “Min” column and double click the left trackball/mouse button Enter the minimum interval value in “Min” column. Press <Enter> key. Use a similar procedure to enter the maximum interval value in “Max” column and the text corresponding to this interval in “Output Text” column. With the arrival of parameter values within the set range, the Screen View will display an appropriate text. Use “Add” button to set the necessary number of intervals.

Note: When setting the intervals, it is necessary to remember that the text corresponding to an interval will be displayed if the following inequality is observed:

Min ≤ Parameter Value<Max, where:

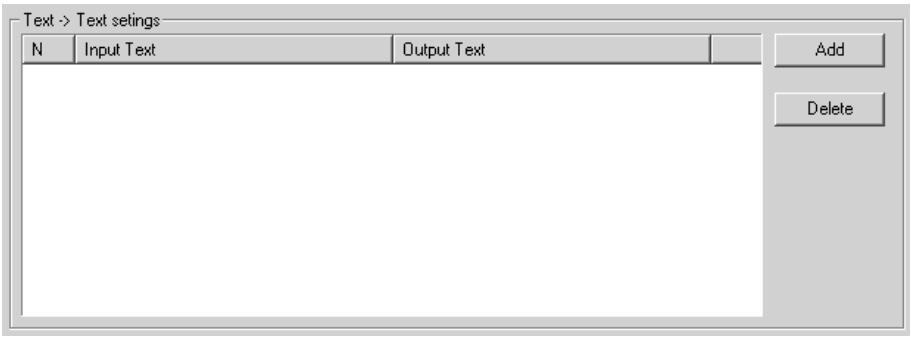
- Min is a value set in “Min” column;
- Max is a value set in “Max” column.



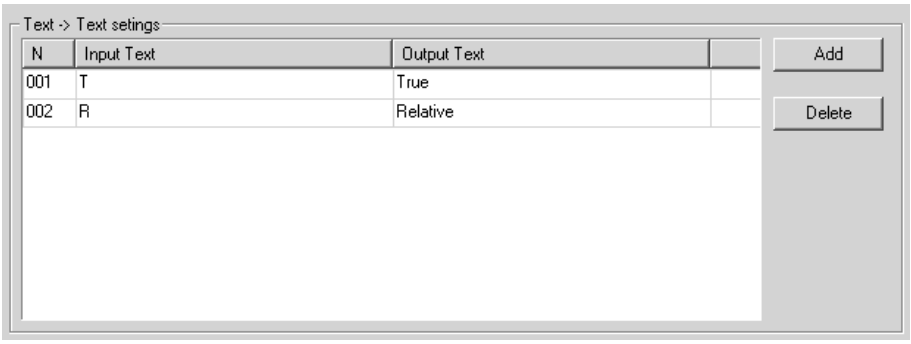
To delete an unnecessary table row, position the cursor on the row and press the left trackball/mouse button. Press “Delete” button.

Text -> Text

This type of substitution is used for setting correspondence between the arriving symbol (text) and the text displayed on the Screen View.



Press “Add” button. Position the cursor on “Input Text” cell and double click the left trackball/mouse button. Enter the symbol which arrives from the parameter source. Press <Enter> key. Use a similar procedure to enter its corresponding text in “Output Text” column. With the arrival of the entered text parameter, the Screen View will display the corresponding text. Use “Add” button to enter the necessary number of text parameters.



To delete an unnecessary table row, position the cursor on this row and press the left trackball/mouse button. Press “Delete” button.

Value Sign -> Text

This type of substitution is used for setting correspondence between the sign of the parameter and the text displayed on the Screen View.

Position the cursor on “Output Text” cell in “plus” row and double click the left trackball/mouse button. Enter the necessary text for the positive parameter value. Press <Enter> key. Use a similar procedure to enter the text for a negative value in “minus” row. With the arrival of a positive of negative parameter value, the Screen View will display an appropriate text.

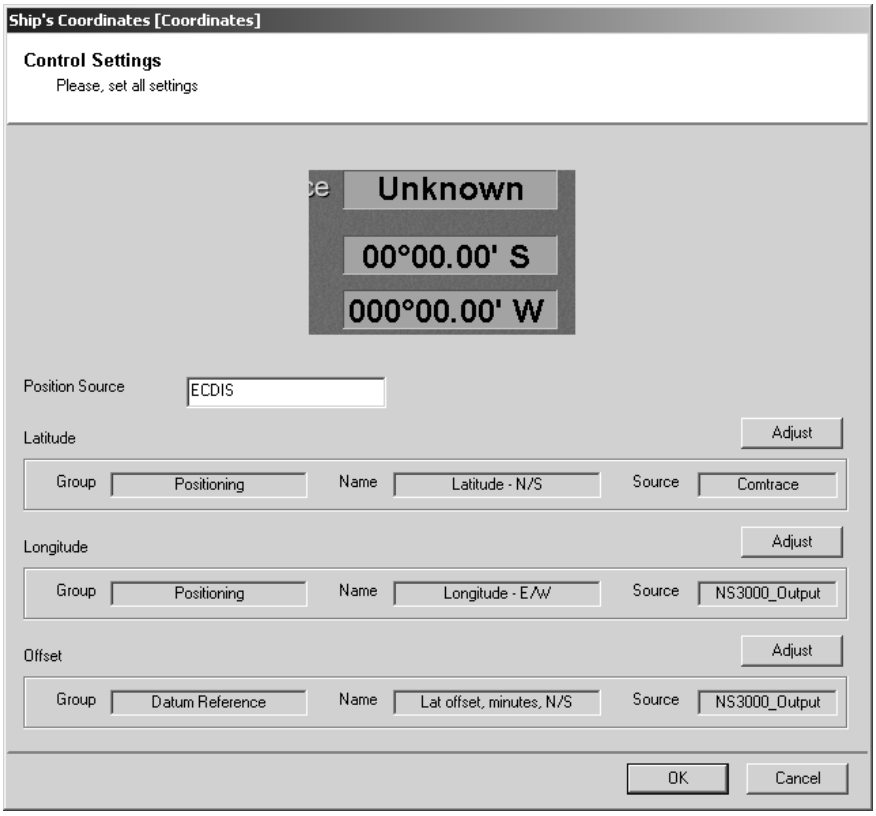
Press “OK” button to save the settings you have made and exit to the Main window of “Navi-Conning 3000 Setup” utility.

Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

COORDINATES

“Coordinate” indicators are intended for the display of geographic coordinates.

This type includes the following parameters: “WP Coordinates”, “Ship’s Coordinates”. For the description of parameters displayed on these indicators, see **Screen View Indicator Table** in **Annex**.



Use **Position Source** box to enter the name of the coordinates source which will be displayed on the Screen View.

Note: With the automatic parameter display setup (Autoadjustment), the source of coordinates is not specified, so its input can be made in the manual mode only.

Adjustment of offset parameter can be made for the latitude (Lat) or longitude (Lon).

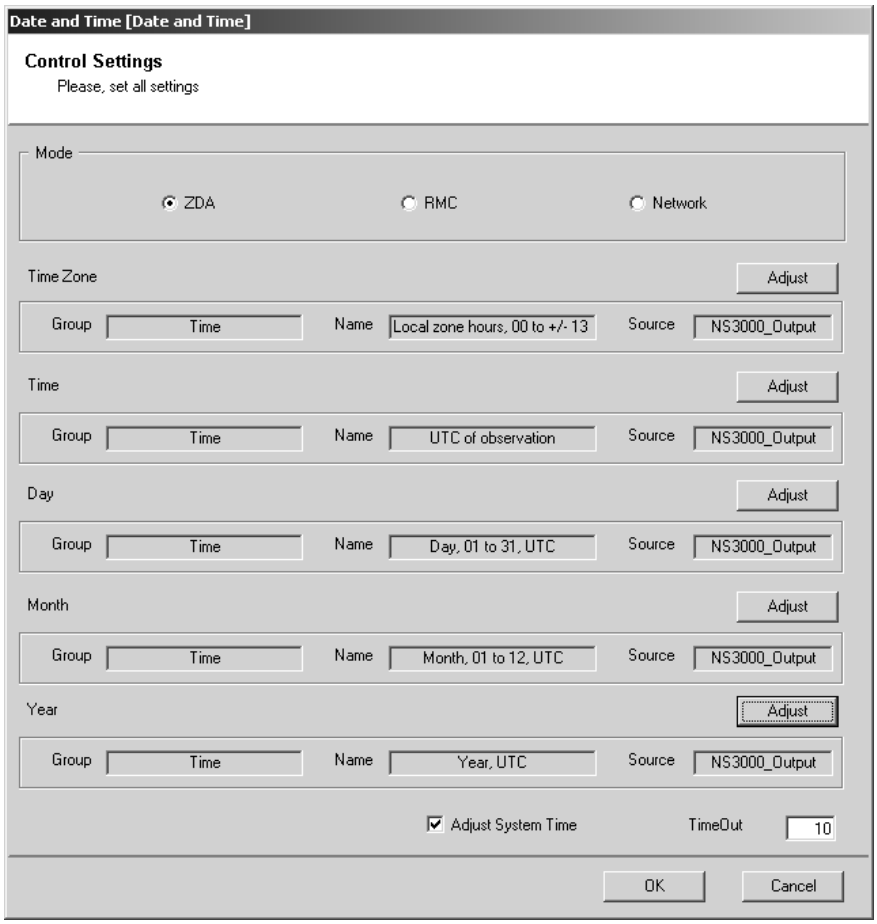
Press “OK” button to save the settings you have made and exit to the Main menu of “Navi-Conning 3000 Setup” utility.

Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

DATE AND TIME

“Date and Time” indicator is intended for displaying the date and time.

For the description of parameters displayed by this indicator, see **Screen View Indicator Table** in **Annex**.



Select the source of time data in **Mode** group.

Note: Depending on the set time data source, some of parameters may be unavailable for connection to the indicator (e.g. **Time Zone**, **Month** and **Year** if RMC sentence is selected).

Adjust System Time checkbox is checked by default, so the system (computer) time is brought into agreement with the external time (received from the parameter source). To cancel the alignment of the system and external time, uncheck **Adjust System Time** checkbox for all the “Date and Time” indicators of all the Screen Views.

Use **Time Out** box to set the time interval in seconds upon which the indicator will display system time in the absence of data from the source.

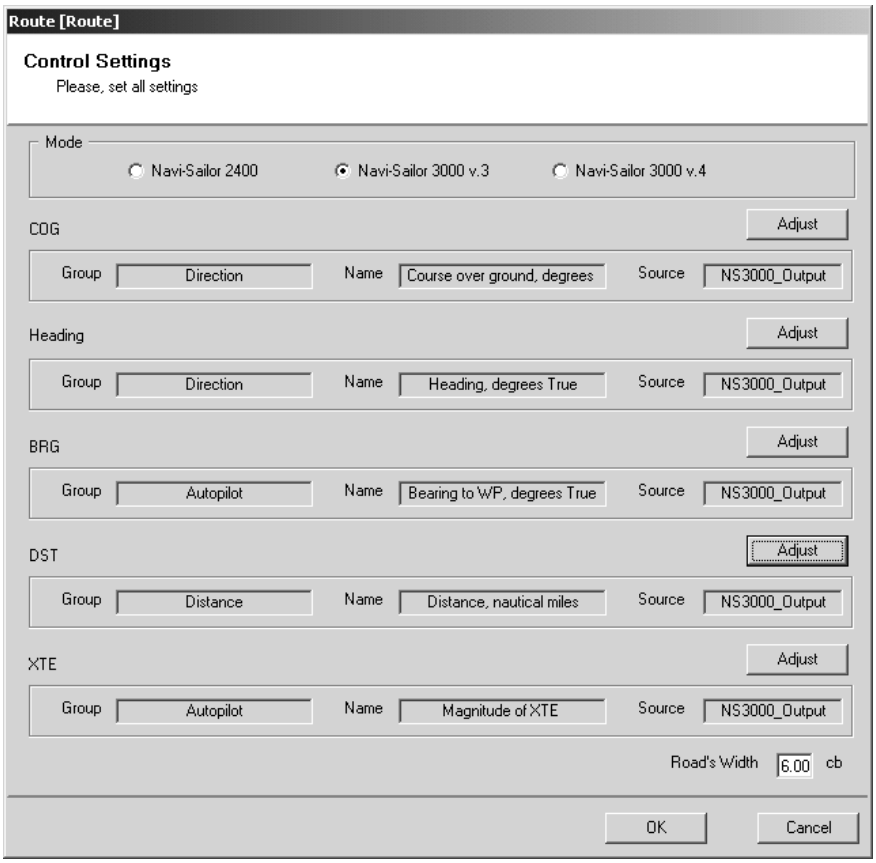
Press “OK” button to save the settings you have made and exit to the Main menu of “Navi-Conning 3000 Setup” utility.

Press “Save” button in the Main window of “Navi-Conning Setup” utility to save the changes you have made.

ROUTE

“Route” indicator is intended for displaying graphically the ship position on the current leg of the monitored route.

For the description of parameters displayed by this indicator, see **Screen View Indicator Table** in **Annex**.



Select the route data source in **Mode** group.

Note: Depending on the set source of information on the route, some of parameters may be unavailable for connection to the indicator (e.g. for **Navi-Sailor 2400** and **Navi-Sailor 3000 v.4**. In this case, parameters are connected automatically).

Use **Road’s Width** box to enter the safe corridor width in cables to be displayed on the Screen View.

Press “OK” button to save the settings you have made and exit to the Main menu of “Navi-Conning 3000 Setup” utility.

Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

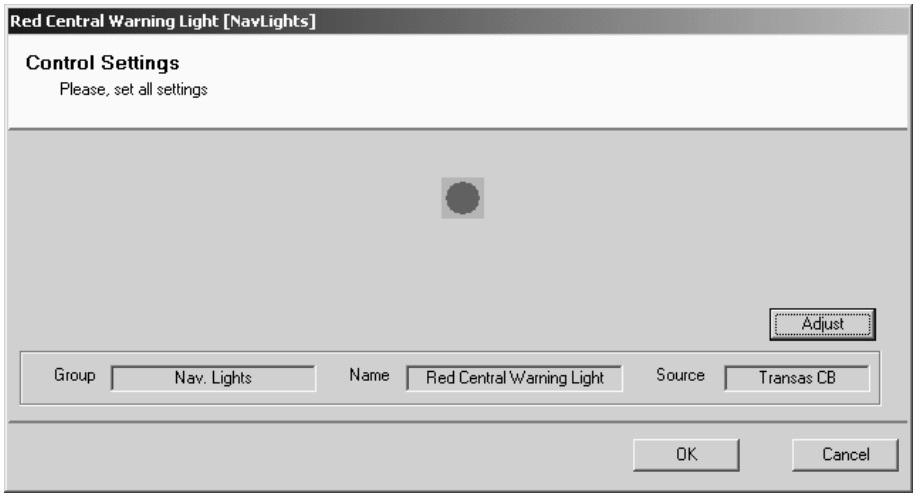
NAVIGATIONAL LIGHTS

"Nav. Lights" indicators are intended for displaying parameters characterised with two states only: ON/OFF.

This type includes indicators of navigational lights status:

- "Red Upper Warning Light";
- "Top Light, Front";
- "Red Central Warning Light";
- "Green Fishing Light";
- "Red Fishing Light";
- "Top Light, Rear, Lower";
- "Top Light, Rear, Upper";
- "Port Side Light";
- "Stb Side Light";
- "White Warning Light";
- "Red Lower Warning Light";
- "White Fishing Light";
- "Anchor Light, Rear";
- "Towing Light";
- "Stern Light";
- "Anchor Light";
- "Front".

For the description of parameters displayed by this indicators, see **Screen View Indicator Table** in **Annex**.



Press "OK" button to save the settings you have made and exit to the Main menu of "Navi-Conning 3000 Setup" utility.

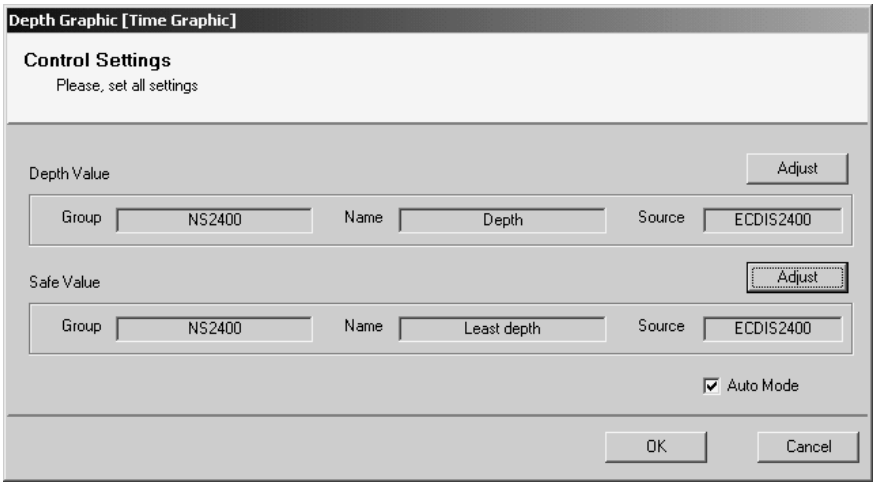
Press "Save" button in the Main window of "Navi-Conning 3000 Setup" utility to save the changes you have made.

TIME GRAPHIC

“Time Graphic” indicators are intended for displaying values of a parameters deployed in time.

This type includes “Depth Graphic” indicator, which is intended for showing the echogram and line of safety depth (available only from NS 2400).

For the description of parameters displayed by this indicator, see **Screen View Indicator Table** in **Annex**.



Auto Mode checkbox for the automatic setting of depths scales is checked by default. In this case, the maximum depth from the depth scale is assigned with the maximum depth value obtained by the echosounder and multiplied by 1.2. As a new maximum value is received, the echogram is re-drawn to take into account a new maximum depth.

Uncheck **Auto Mode** checkbox as required; as this is done, the depth scale will be set with the maximum depth of 50 m.

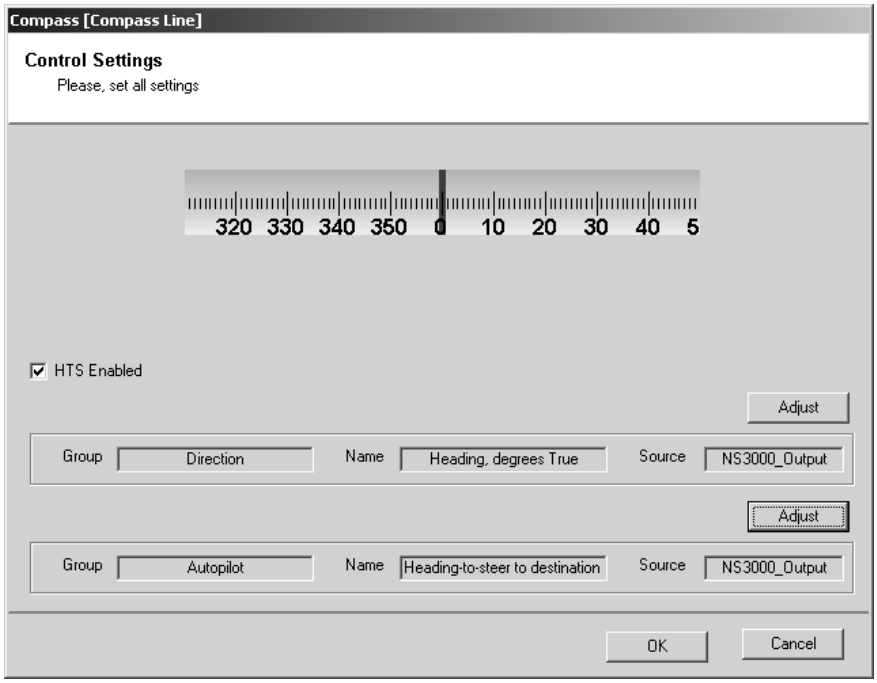
Press “OK” button to save the settings you have made and exit to the Main menu of “Navi-Conning 3000 Setup” utility.

Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

COMPASS LINE

"Compass Line" indicator is intended for the graphic display of the ship course.

For the description of parameters displayed by this indicator, see **Screen View Indicator Table** in **Annex**.



For the indicator to display the course for steering to the route leg, check **HTS Enabled** checkbox and connect the appropriate parameter by using "Adjust" button which has been activated.

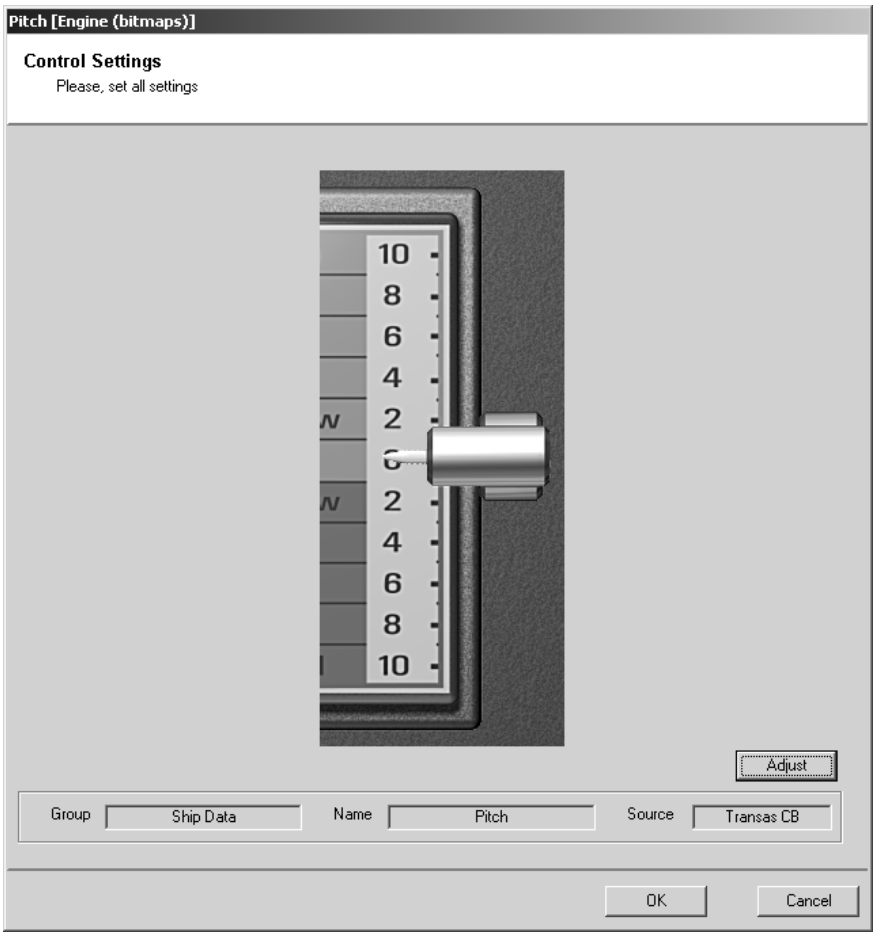
Press "OK" button to save the settings you have made and exit to the Main menu of "Navi-Conning 3000 Setup" utility.

Press "Save" button in the Main window of "Navi-Conning Setup" utility to save the changes you have made.

ENGINE (BITMAPS)

“Pitch” indicator which belongs to “Engine (bitmaps)” type is intended for the graphic display of the engine telegraph handle position.

For the description of parameters displayed by this indicator, see **Screen View Indicator Table** in **Annex**.

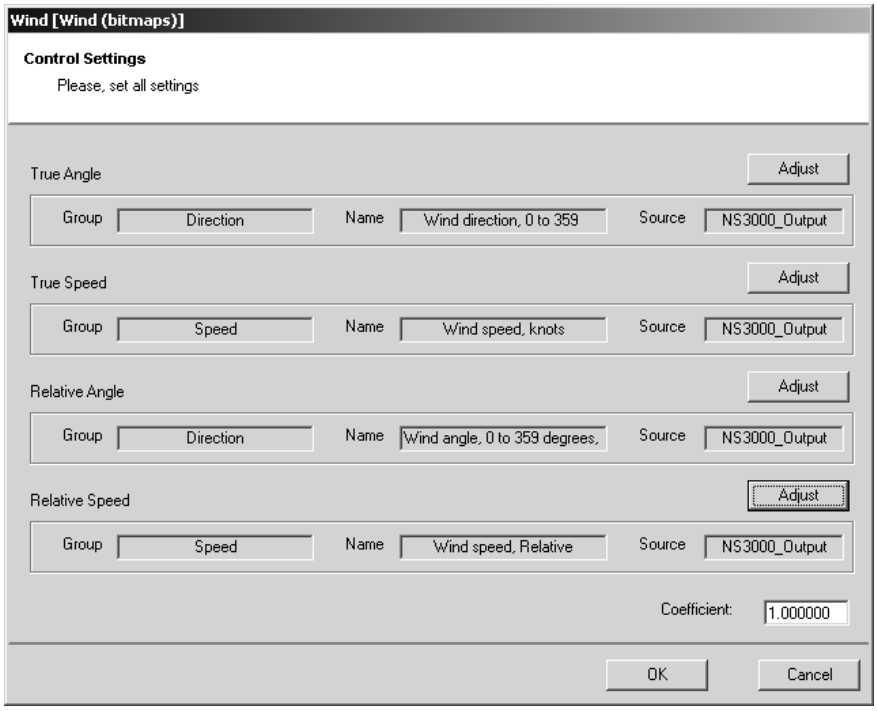


Press “OK” button to save the settings you have made and exit to the Main menu of “Navi-Conning 3000 Setup” utility.

Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

WIND

"Wind" indicator is intended for the graphic/digital display of the wind speed and direction.



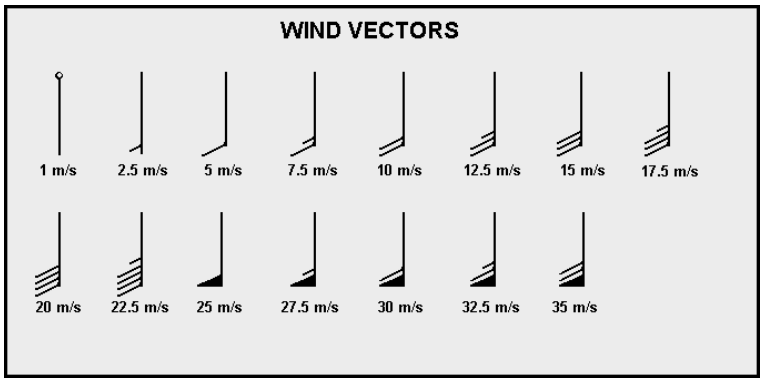
The speed displayed on "Wind" indicator uses "m/s" for measurement units. If other measurement units are used for the wind speed parameter, use **Coefficient** box to enter the coefficient for re-calculating to "m/s". In this case, the parameter will be displayed on the Screen View with a value re-calculated by using the set coefficient.

"Wind" indicator can operate with the same measurement units for both, true and relative wind.

The indicator can be adjusted for work in three modes:

- Displaying of only one arrow (relative or true wind) at the same time;
- Displaying of only one arrow (relative or true wind) at the same time with availability of shifting between them by pressing the respective button;
- Simultaneous displaying of two arrows (relative and true wind) at the same time.

The drawing below shows a graphic presentation of the wind speed.



Note: With the wind speed values within ± 1.25 m/s interval from those specified in the drawing, the indicator will display an appropriate wind vector.

Press “OK” button to save the settings you have made and exit to the Main menu of “Navi-Conning 3000 Setup” utility.

Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

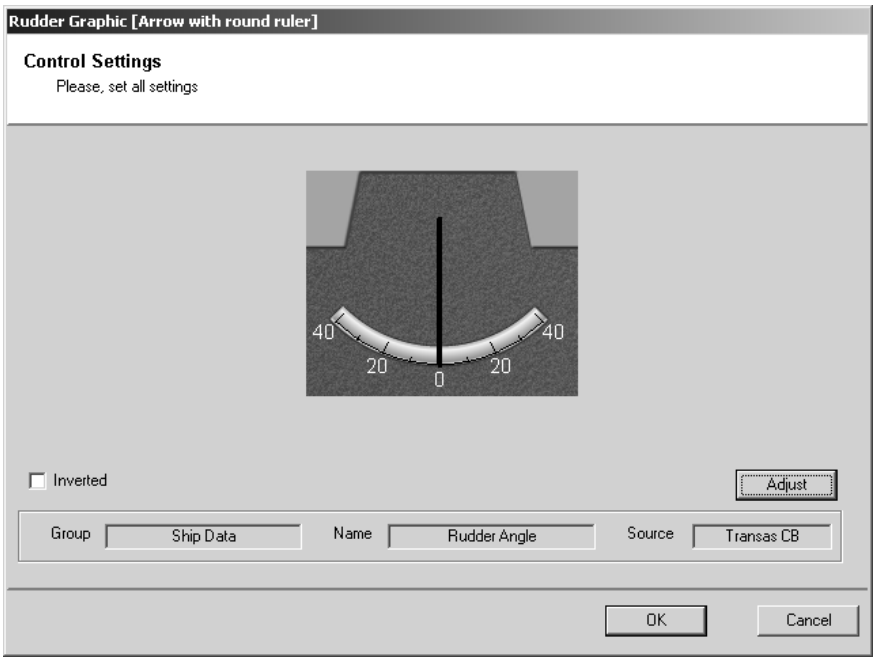
For the description of parameters displayed by this indicator, see **Screen View Indicator Table** in **Annex**.

ARROW WITH ROUND RULER

“Arrow with round ruler” indicator is intended for the graphic display of parameters.

This type includes “Rudder Graphic” indicator designed for the graphic presentation of the rudder position.

For the description of parameters displayed by this indicator, see **Screen View Indicator Table** in **Annex**.



Where the Screen View is required to display an opposite value of the rudder blade angle, check **Inverted** checkbox.

Press “OK” button to save the settings you have made and exit to the Main menu of “Navi-Conning 3000 Setup” utility.

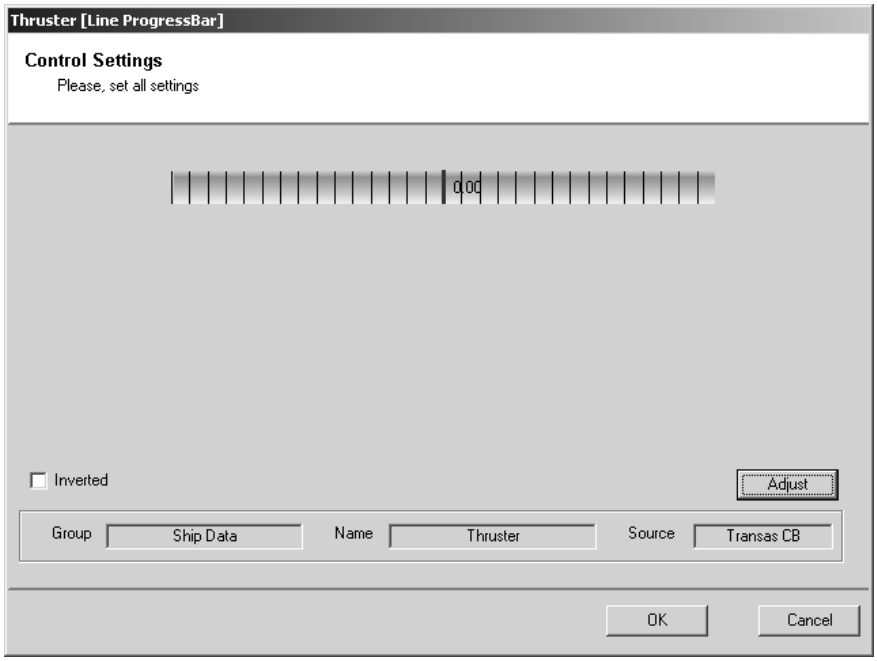
Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

LINE PROGRESS BAR

"Line Progress Bar" indicator is intended for the graphic presentation of parameters.

This type includes "Thruster" indicator, which is designed for the graphic presentation of the thruster load value in %.

For the description of parameters displayed by this indicator, see **Screen View Indicator Table** in **Annex**.



Where the Screen View is required to display an inverted value of the thruster load value, check **Inverted** checkbox.

Press "OK" button to save the settings you have made and exit to the Main menu of "Navi-Conning 3000 Setup" utility.

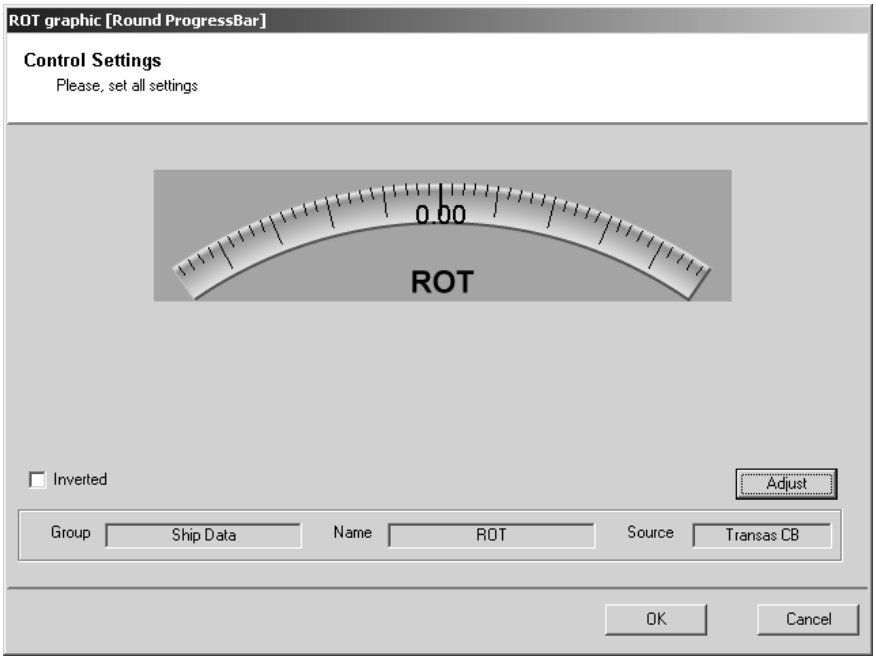
Press "Save" button in the Main window of "Navi-Conning 3000 Setup" utility to save the changes you have made.

ROUND PROGRESS BAR

"Round Progress Bar" indicator is intended for the graphic presentation of parameters.

This type includes "ROT Graphic" indicator designed for the graphic display of the ship rate of turn.

For the description of parameters displayed by this indicator, see **Screen View Indicator Table** in **Annex**.



Where the Screen View is required to display an inverted value of the ship rate of turn, check **Inverted** checkbox.

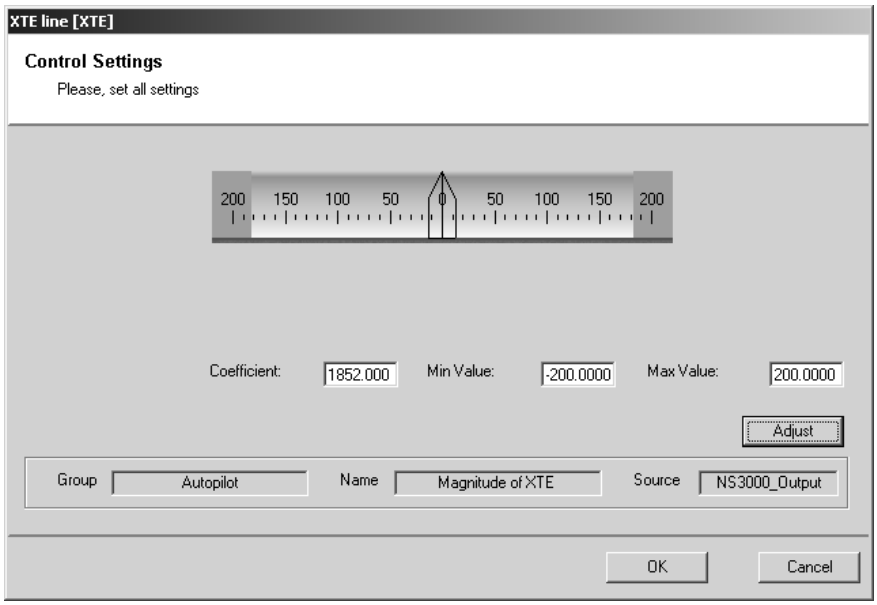
Press "OK" button to save the settings you have made and exit to the Main menu of "Navi-Conning 3000 Setup" utility.

Press "Save" button in the Main window of "Navi-Conning 3000 Setup" utility to save the changes you have made.

XTE

This type includes “XTE line” indicator designed for the graphic presentation of the ship deviation from the monitored route leg.

For the description of parameters displayed by this indicator, see **Screen View Indicator Table** in **Annex**.



Use **Coefficient** box to enter the coefficient for re-calculating XTE.

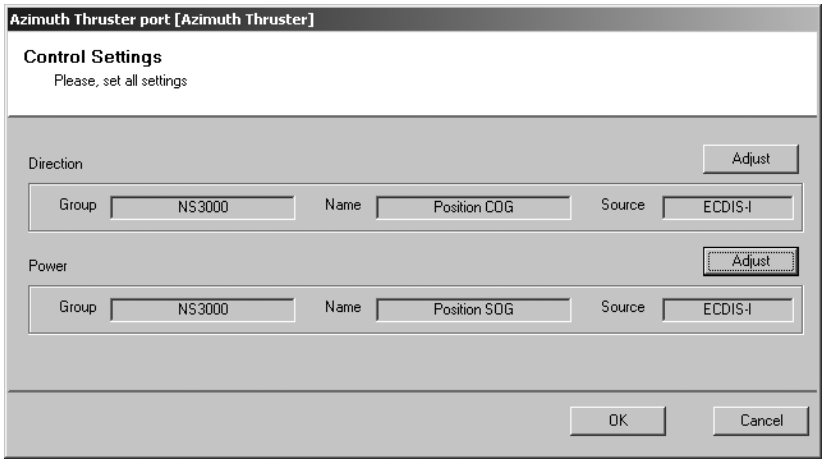
Set the safe corridor width. To do this, use **Min Value** box with “–” sign to set the minimum safe value for the portside deviation from the route leg, and **Max Value** box to set the maximum safe value of starboard deviation from the route leg.

Press “OK” button to save the settings you have made and exit to the Main menu of “Navi-Conning 3000 Setup” utility.

Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

AZIMUTH THRUSTER

"Azimuth Thruster" indicator is intended for the graphic presentation of parameters.

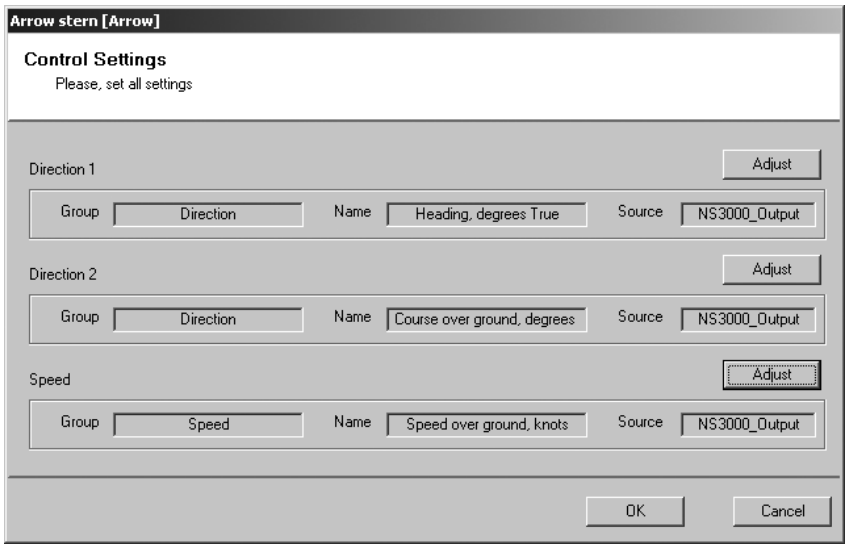


This type includes indicator designed for the graphic presentation of the module of parameter value (%) in the form of progress bar and direction of the parameter application related to the round scale.

For the description of parameters displayed by this indicator, see **Screen View Indicator Table** in **Annex**.

ARROW

"Arrow" indicator is intended for calculation and graphic presentation of parameters.



The control includes indicator intended for graphic presentation of the module of parameter value in the form of resizable arrow and calculated direction of the parameter application related to the invisible fixed scale.

The sources for direction parameters calculation as well as value of parameter are to be defined in the appropriate fields **Direction 1**, **Direction 2** and **Speed** in NC Setup Utility.

Direction of the parameter application is calculated as a difference of the values Direction 1 and Direction 2.

For the description of parameters displayed by this indicator, see **Screen View Indicator Table** in **Annex**.

CHAPTER 3

Handling Play Back Utility

This chapter provides description of “Play Back” application operating principles and of the procedures to handle it.

PURPOSE OF PLAY BACK UTILITY

During the operation of “Navi-Conning 3000” application, all the information supplied by the connected sources is recorded. Recording is referenced to the system time.

Information is recorded if there are at least 700 Mb of free space on the hard disk. If the free space has been reduced to 700 Mb in the course of data recording, trace files containing the oldest information are deleted, and new information is recorded in their place.

Note: If at the moment when “Navi-Conning 3000” application is turned on, there are less than 700 Mb of free space on the hard disk, there is no information recording.

“Play Back” utility is intended for playing back information recorded by the NC system in the process of operation. Playback can be made from any date and any moment of the recorded information in the real or fast time playback mode with 2:1, 5:1 and 10:1 coefficients.

ATTENTION!

“Play Back” utility cannot operate simultaneously with operation of “Navi-Conning 3000” application.

Information is played back successively as per the system time of the computer where the recording was made. Data playback succession implies that if there was a change of system time during the recording, the playback will reproduce all the information up to the time change moment, and then all the information after the time change notwithstanding the fact that the system time values may be identical.

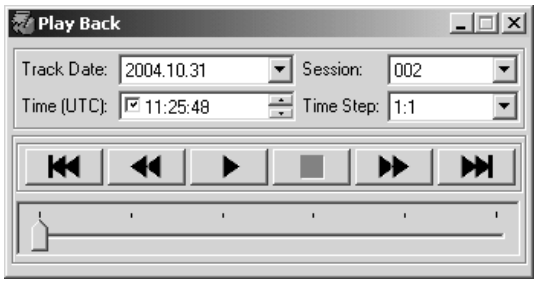
“Play Back” utility cannot reproduce information unless “Navi-Conning 3000” program configuration (settings of parameter sources, connections of parameters and sources, etc.) is the same as in the data recording.

ATTENTION!

With the upgrade of “Navi-Conning 3000” program via “Upload” utility (see document **NAVI-CONNING 3000 (V. 4.01.00). INSTALLATION GUIDE** paragraph **Installation of New Options** of **Chapter 3**), “Play Back” is not always capable of playing back information recorded with the previous configuration. To reproduce this information, it is necessary to perform “Restore” procedure in order to restore the previous version, see **Chapter 4** of document **NAVI-CONNING 3000 (V. 4.01.00). INSTALLATION GUIDE**.

“Play Back” utility does not reproduce data for the SSPA predictor.

PLAY BACK CONTROL WINDOW



"Play Back" window is designed for controlling the playback of data which was recorded to special trace files with `*.log` extension during the operation of "Navi-Conning 3000" application. Parameters received in each operating session of "Navi-Conning 3000" application are recorded to a separate trace file. The operating sessions is a time interval from the time when "Navi-Conning 3000" was turned on until it was turned off, or from turning on until 24:00 of the current date (UTC); in the case of continuous operation – from 00:00 to 24:00 of the current date.

Session recording uses computer system time values, which may differ from time values displayed on the Screen Views in "Date and Time" indicator.

Time used for the information playback is the time of that PC where the recording was made.

"Play Back" window contains the following elements:

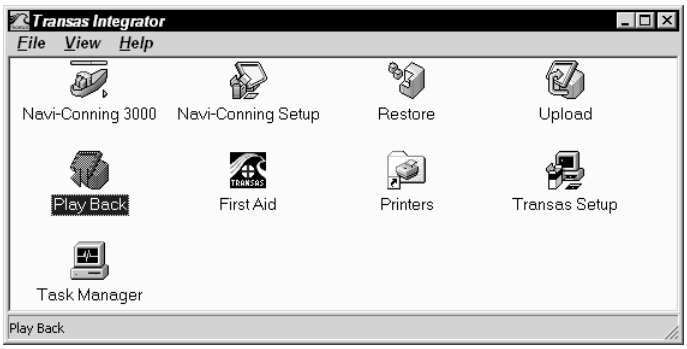
- **Track Date** – to select the date of the situation to be played back from the list;
- **Session** – to select the operation sessions from the list (in the case of a single session – from 00:00 to 24:00 – the session selection window is not available, and the session cannot be selected). If the window is available, this means that "Navi-Conning 3000" application was run several times;
- **Time** – playback start time (UTC). With the checkbox in the window checked, playback starts from the time set in the window, if unchecked – from the start of the session.

  Hours, minutes and seconds are set in **Time** box by selecting an appropriate field with the cursor and changing the value by using buttons in the right hand part of the box.
- **Time Step** – playback speed is set as divisible to the real time playback mode (1:1);
- Control buttons:
  - to move to the beginning of the trace file;
  - minute-by-minute playback of information in the time decrease direction;
  - to start information playback process;
  - to stop information playback process;
  - minute-by-minute playback of information in the time increase direction;
  - to move to the end of the trace file;
  - to set the playback start in an arbitrary trace file point.

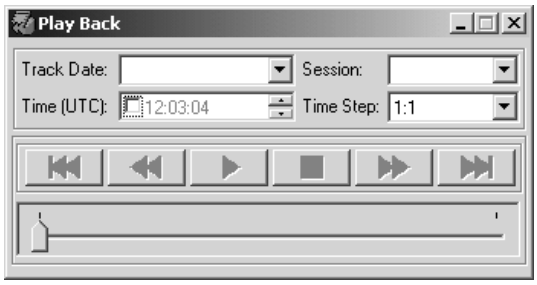
Strokes are used on the playback scale to mark whole minutes only, so if the recording was made within a minute (from 20 to 40 seconds) the scale will have two strokes: the one corresponding to 0 sec of the minute within which the recording was made and 0 sec of the next minute. Accordingly, if a recording was made between minutes (from 40 seconds of one minute to 20 seconds of the next one), the playback scale will have 3 minutes marks.

PLAY BACK APPLICATION HANDLING PROCEDURE

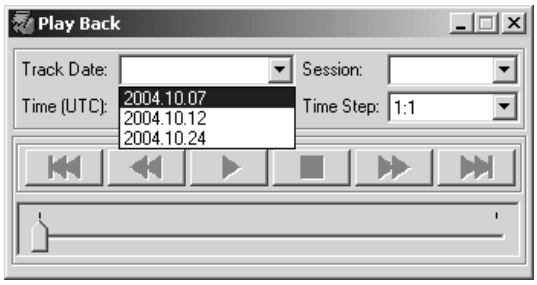
Run “Play Back” utility by selecting the appropriate icon in “Transas Integrator” window.



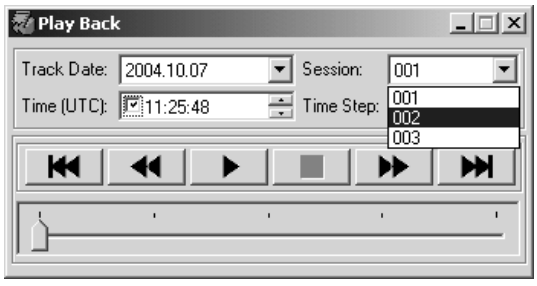
After the program start, “Play Back” application control window will be displayed.



In **Track Date** input box, select a date from the list for the playback of recorded information.



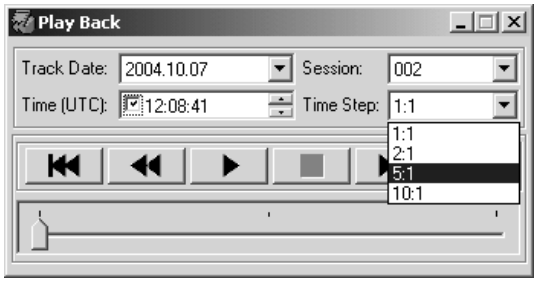
In **Session** input box, select the necessary work session from the list (if there is one sessions – from 00:00 to 24:00 – the session selection window is not available).



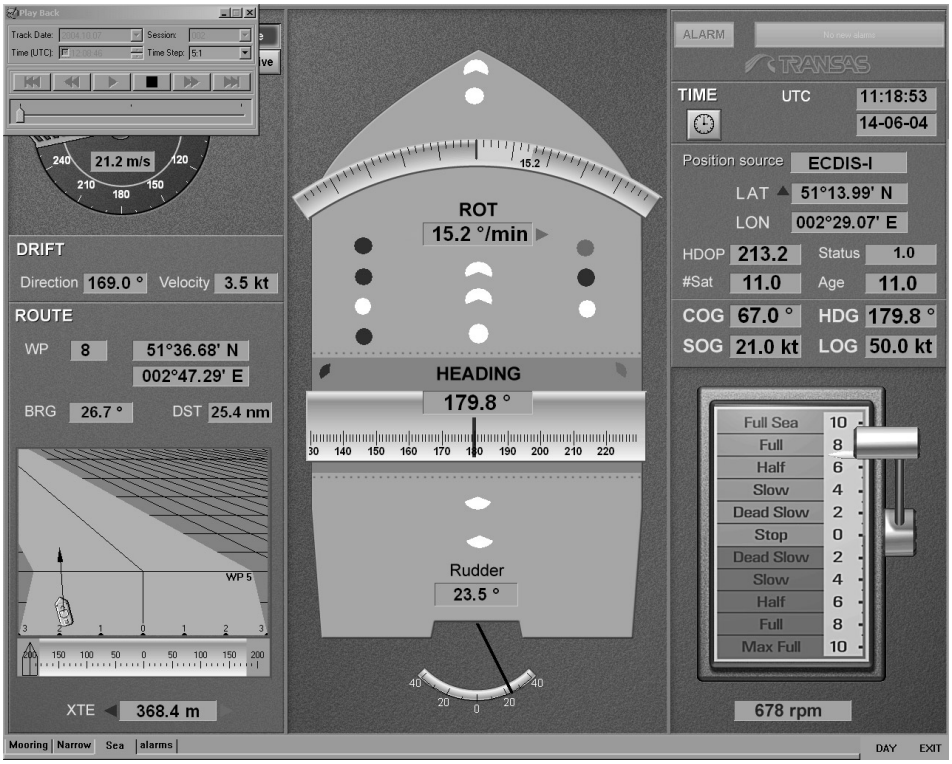
By default, **Time (UTC)** input box specified the selected session start time. **Time (UTC)** checkbox checked by default allows setting the necessary data playback start time. Use the trackball/mouse or the keyboard to enter the necessary playback start time. If the entered time value is not in the trace file, playback will be started from the beginning of the trace file.

To set playback start time, you can use control buttons (see paragraph **Play Back Control Window** of this chapter).

In **Time Step** input box, select the recorded information playback speed from the list.



To start playback, press ▶ button. In some time, “Navi-Conning 3000” application will be started, and playback of recorded parameters will begin from the set moment of time.



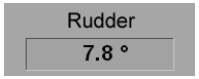
To stop the playback, press ■ button. “Navi-Conning” application will close down.

To exit from “Play Back” application, press the button in the top right corner of “Play Back” window.

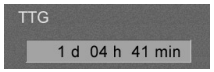
ANNEX

Screen View Indicator Table

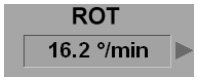
This annex specifies parameters, which are by default connected to the Screen View indicators in the case of automatic adjustment.

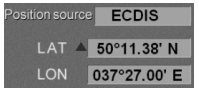
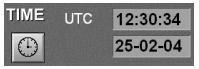
Item	Name	Drawing	Input parameters (Auto Adjustment)		Comments
			Interface	Version/Parameter name	
1	HDG Digital		NMEA:	V. 2.1/3.00/3.01: • Heading, degrees True; • Heading, degrees Magnetic; • Magnetic sensor heading, degrees	Measurement units set by default: degrees (°)
			ADC:	Transas CB: • Heading	
			Network:	NS 2400/NS 3000 v.3/NS 3000 v.4.00.01: • Heading	
2	Rudder digital		NMEA	N/A	Measurement units set by default: degrees (°)
			ADC:	Transas: • Rudder Angle	
			Network:	N/A	
3	Depth		NMEA:	V. 2.1/3.00/3.01: • Water depth relative to the transducer, meters; • Water depth, Fathoms; • Water depth, feet; • Water depth, Meters	Measurement units set by default: meter (m)
			ADC:	Transas: • Depth	
			Network:	NS 2400/NS 3000 v.3/NS 3000 v.4.00.01: • Depth	
4	Drift velocity		NMEA:	V. 2.1/3.00/3.01: • Current speed, knots	Measurement units set by default: knots (kt)
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.3/NS 3000 v.4.00.01: • Drift Current	

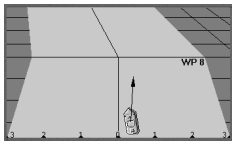
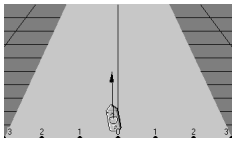
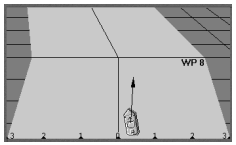
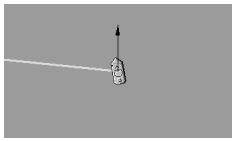
Item	Name	Drawing	Input parameters (Auto Adjustment)		Comments
			Interface	Version/Parameter name	
5	Drift direction		NMEA:	V. 2.1/3.00/3.01: • Drift direction, degrees True; • Drift direction, degrees Magnetic	Measurement units set by default: degrees (°)
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.3/NS 3000 v.4.00.01: • Drift Set	
6	Anchor starboard		NMEA:	N/A	Measurement units set by default: meter (m)
			ADC:	Transas: • Anchor starboard side	
			Network:	N/A	
7	Anchor port		NMEA:	N/A	Measurement units set by default: meter (m)
			ADC:	Transas: • Anchor portside	
			Network:	N/A	
8	HDG		NMEA:	V. 2.1/3.00/3.01: • Heading, degrees True; • Heading, degrees Magnetic; • Magnetic sensor heading, degrees	Measurement units set by default: degrees (°)
			ADC:	Transas: • Heading	
			Network	NS 2400/NS 3000 v.3/NS 3000 v.4.00.01: • Heading	
9	SOG		NMEA:	V. 2.1/3.00/3.01: • Speed over ground, knots; • Speed over ground, km/hr	Measurement units set by default: knots (kt)
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.3/NS 3000 v.4.00.01: • Position SOG	

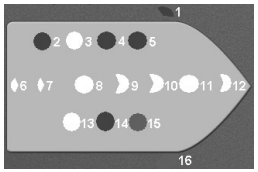
Item	Name	Drawing	Input parameters (Auto Adjustment)		Comments
			Interface	Version/Parameter name	
10	COG		NMEA:	V. 2.1/3.00/3.01: • Course over ground, degrees True; • Course, degrees Magnetic	Measurement units set by default: degrees (°)
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.3/NS 3000 v.4.00.01: • Position COG	
11	LOG		NMEA:	V. 2.1/3.00/3.01: • Speed, knots; • Speed, km/hr; • Longitudinal water speed, knots; • Longitudinal ground speed, knots	Measurement units set by default: knots (kt)
			ADC:	Transas: • LOG	
			Network:	NS 2400/NS 3000 v.3/NS 3000 v.4.00.01: • LOG	
12	RPM		NMEA:	V. 2.1/3.00/3.01: • Speed, rev/min, single or on centreline; • Speed, rev/min, odd=starboard; • Speed, rev/min, even=port	Measurement units set by default: revolution per minute (rpm)
			ADC:	Transas: • RPM	
			Network:	N/A	
13	Waypoint ID		NMEA:	V. 2.1/3.00/3.01: • Waypoint ID	
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.4.00.01: • Waypoint	
14	TTG		NMEA:	N/A	
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.4.00.01: • TTG	

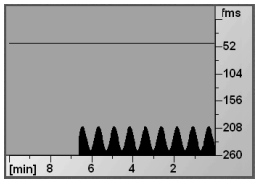
Item	Name	Drawing	Input parameters (Auto Adjustment)		Comments
			Interface	Version/Parameter name	
15	ETA		NMEA:	N/A	
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.4.00.01: • ETA time; • ETA date	
16	DWT		NMEA:	V. 2.1/3.00/3.01: • Distance, nautical miles	Measurement units set by default: nautical miles (nm)
			ADC:	N/A	
			Network:	NS 2400: • RNG. NS 3000 v.4.00.01: • DTW	
17	BTW		NMEA:	V. 2.1/3.00/3.01: • Bearing to WP, degrees True; • Bearing to WP, degrees Magnetic	Measurement units set by default: degrees (°)
			ADC:	N/A	
			Network:	NS 2400: • BRG. NS 3000 v.4.00.01: • BTW	
18	HDOP		NMEA:	V. 2.1/3.00/3.01: • Horizontal dilution of precision	
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.4.00.01: • GGA HDOP	
19	Number of Satellite		NMEA:	V. 2.1/3.00/3.01: • Number of satellites in use, 00-12, may be different from the number in view	
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.4.00.01: • GGA satellite number	

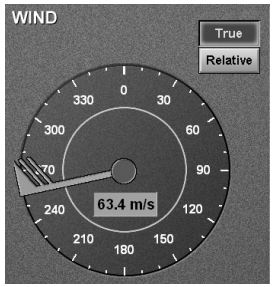
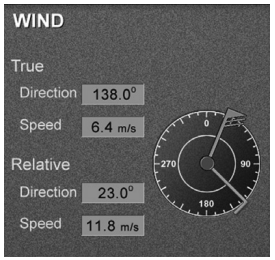
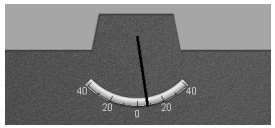
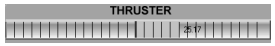
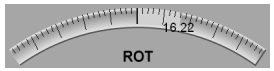
Item	Name	Drawing	Input parameters (Auto Adjustment)		Comments
			Interface	Version/Parameter name	
20	Age of diff		NMEA:	V. 2.1/3.00/3.01: • Age of Differential GPS data	Measurement units set by default: second (sec.)
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.4.00.01: • GGA age	
21	Bow speed		NMEA:	V. 2.1/3.00/3.01: • Transverse water speed, knots; • Transverse ground speed, knots	Measurement units set by default: knots (kt)
			ADC:	N/A	
			Network:	N/A	
22	Stern speed		NMEA	V. 2.1/3.00/3.01: • Stern transverse water speed, knots; • Stern transverse ground speed, knots	Measurement units set by default: knots (kt)
			ADC:	N/A	
			Network:	N/A	
23	XTE		NMEA:	V. 2.1/3.00/3.01: • Magnitude of XTE (cross-track-error)	Measurement units set by default: meter (m)
			ADC:	Transas:	
			Network:	NS 2400/NS 3000 v.4.00.01: • XTE	
24	ROT digital		NMEA:	V. 2.1/3.00/3.01: • Rate of turn, degrees/minute, "-" = bow turn to port v. 3.0	Measurement units set by default: rate of turn degrees/minute (°/min)
			ADC:	Transas: • ROT	
			Network:	NS 3000 v.4.00.01: • ROT	

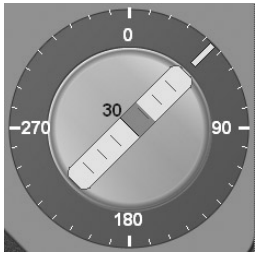
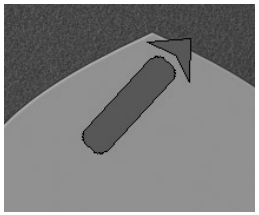
Item	Name	Drawing	Input parameters (Auto Adjustment)		Comments
			Interface	Version/Parameter name	
25	Status		NMEA:	V. 2.1/3.00/3.01: • GPS Quality indicator	
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.4.00.01: • GGA status	
26	WP Coordinates		NMEA:	V. 2.1/3.00/3.01: • Waypoint longitude, E/W; • Waypoint latitude, N/S	
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.4.00.01: • Waypoint Longitude; • Waypoint Latitude	
27	Ship's Coordinates		NMEA:	V. 2.1/3.00/3.01: • Longitude – E/W; • Latitude – N/S	
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.3/NS 3000 v.4.00.01: • Position Longitude; • Position Latitude; • Latitude offset	
28	Date and Time		NMEA:	V. 2.1/3/00/3/01: • Local zone hours, 00 to +/- 13 hrs; • UTC of observation; • Day, 01 to 31, UTC; • Month, 01 to 12, UTC; • Year, UTC; • Date: ddmmyy	By default, the indicator is in "ZDA" mode
			ADC:	N/A	
			Network:	NS 2400/NS 3000/ECDIS-I: • Time Zone; • UTC Time; • UTC Date	

Item	Name	Drawing	Input parameters (Auto Adjustment)		Comments
			Interface	Version/Parameter name	
29	Route		NMEA:	V. 2.1/3/00/3/01: • Course over ground, degrees True; • Bearing to WP, degrees True; • Distance, nautical miles; • Magnitude of XTE (cross-track-error); • Heading, degrees True	By default, the indicator is in “Navi-Sailor 2400” mode. When displayed on the indicator, the ship contour is always aligned with the ship gyro heading. The vector with an arrow is aligned with COG. With XTE of not more than 3 cb, the ship symbol in the 6cb wide corridor, and the current route leg segment with 3 nm in perspective are displayed. Alignment is with the current leg of the monitored route.  With DTW value equal to or less than 3 nm, the next WP is shown on the display. It start moving in the direction of ship symbol with DTW value equal to 0.5 nm. Alignment is with the current leg of the monitored route.  With XTE of more than 3 cb, or of the ship symbol deviates from the current route leg to more than 90 degrees, the ship symbol is shown on the grey coloured field. The orange coloured line on the indicator corresponds to BTW direction. Alignment is with COG. 
			ADC:	N/A	
			Network:	NS 2400//NS 3000 v.4.00.01: • Position COG; • BRG; • RNG; • XTE; • Nextcrs; • Waypoint; • Heading	

Item	Name	Drawing	Input parameters (Auto Adjustment)		Comments
			Interface	Version/Parameter name	
30	Nav.Lights	 1. Port Side Light. 2. Red Lower Warning Light. 3. White Warning Light. 4. Red Central Warning Light. 5. Red Upper Warning Light. 6. Stern Light. 7. Towing Light. 8. Anchor Light, Rear. 9. Top Light, Rear, Upper. 10. Top Light, Rear, Lower. 11. Anchor Light, Front. 12. Top Light, Front. 13. White Fishing Light. 14. Red Fishing Light. 15. Green Fishing Light. 16. Stb Side Light	NMEA	N/A	
			ADC	Transas: • Port Side Light; • Red Lower Warning Light; • White Warning Light; • Red Central Warning Light; • Red Upper Warning Light; • Stern Light; • Towing Light; • Anchor Light, Rear; • Top Light, Rear, Upper; • Top Light, Rear, Lower; • Anchor Light, Front; • Top Light, Front; • White Fishing Light; • Red Fishing Light; • Green Fishing Light; • Stb Side Light	
			Network:	N/A	

Item	Name	Drawing	Input parameters (Auto Adjustment)		Comments
			Interface	Version/Parameter name	
31	Depth Graphic		NMEA:	V. 2.1/3.00/3.01: • Water depth relative to the transducer, meters; • Water depth, Fathoms; • Water depth, feet; • Water depth, Meters	Measurement units set by default: meter (m)
			ADC:	Transas: • Depth	
			Network:	NS 2400: • Depth; • Least depth. NS 3000 v.4.00.01: • Depth	
32	Compass		NMEA:	V. 2.1/3.00/3.01: • Heading, degrees True; • Heading, degrees Magnetic; • Magnetic sensor heading, degrees	Measurement units set by default: degrees (°)
			ADC:	Transas: • Heading	
			Network:	NS 2400/NS 3000 v.3/NS 3000 v.4.00.01: • Heading	
33	Pitch		NMEA:	N/A	Measurement units set by default: percent (per)
			ADC:	Transas: • Pitch	
			Network:	N/A	

Item	Name	Drawing	Input parameters (Auto Adjustment)		Comments
			Interface	Version/Parameter name	
34	Wind		NMEA:	V. 2.1/3.00/3.01: • Wind direction, 0 to 359 degrees True; • Wind direction, 0 to 359 degrees Magnetic; • Wind speed true, knots; • Wind speed true, meters/second	The control can be set for working in three modes: • Displaying of one arrow (true or relative wind); • Displaying of one arrow (true or relative wind with availability of switching between them); • Simultaneous displaying of two arrows (true and relative wind).  Measurement units set by default: • Speed – meter per second (m/s); • Direction – degrees (°)
			ADC:	Transas: • Wind direction true; • Wind speed true	
			Network:	NS 2400/NS 3000 v.3/NS 3000 v.4.00.01: • Wind True angle; • Wind True speed	
35	Rudder Graphic		NMEA:	N/A	Measurement units set by default: degrees (°)
			ADC:	Transas: • Rudder Angle	
			Network:	N/A	
36	Thruster		NMEA:	N/A	Measurement units set by default: percent (per)
			ADC:	Transas: • Thruster	
			Network:	N/A	
37	ROT Graphic		NMEA:	V. 2.1/3.00/3.01: • Rate of turn, degrees/minute, "–" = bow turn to port	Measurement units set by default: rate of turn degrees/minute (°/min)
			ADC:	Transas: • ROT	
			Network:	NS 3000 v.4.00.01: • ROT	

Item	Name	Drawing	Input parameters (Auto Adjustment)		Comments
			Interface	Version/Parameter name	
38	XTE line		NMEA:	V. 2.1/3.00/3.01: • Magnitude of XTE (cross-track-error)	Measurement units set by default: meter (m)
			ADC:	N/A	
			Network:	NS 2400/NS 3000 v.4.00.01: • XTE	
Alternative Screen Views controls (Manual Adjustment)					
39	Azimuth Thruster			The control can be adjusted for data processing by the following interfaces: • NMEA; • ADC; • Network	The following capabilities were implemented in the control: • Availability of selection of the progress bar reference point; • Availability selection of the round scale reference point; • Availability of hiding of any half/quarter of the round scale.
40	Arrow			The control can be adjusted for data processing by the following interfaces: • NMEA; • ADC; • Network	
41	ETA Pilot			The control can be adjusted for data processing by the following interfaces: • NMEA; • ADC; • Network	

SPECIFICATION FOR BASIC SCREEN VIEWS

PANELS	List of Indicators			Interfaces
	SEA	NARROW	MOORING	
WIND	Wind			NMEA, ADC, network NS2400/3000v.3/3000v.4.00.01
DRIFT	Set			
	Drift			
POSITION	COG			
	SOG			
	HDG			
	LOG			
CENTRAL	Compass			
	ROT digital			NMEA, ADC, network NS3000 v.4.00.01
	ROT graphic			
	Rudder digital			NMEA, ADC
	Rudder graphic			
ENGINE	Pitch			
	RPM			
TIME	Date and time			NMEA (ZDA, RMC), network NS2400/3000v.3/3000v.4.00.01
ALARM	Alarm indicator			Internal interface
DEPTH	N/A	Depth digital		NMEA, ADC, network NS2400/3000v.3/3000v.4.00.01
		Depth graphic		
		Anchor port		NMEA, ADC
		Anchor stb		
LIGHTS	Nav. lights		N/A	NMEA, ADC
POSITION	Ship's coordinates			NMEA, network NS2400/3000v.3/3000v.4.00.01
	HDOP			NMEA, ADC, network NS2400/3000v.4.00.01
	Num. of Satellite			
	GPS status			
	Age of diff			
ROUTE	XTE			
	XTE line			
	WP number			
	BTW			
	DTW			
	WP coordinates			NMEA, network NS2400/3000v.4.00.01
	Route			Network NS2400/3000v.4.00.01 Network NS3000v.3 only if supplemented with NMEA
CENTRAL	N/A		Thruster	NMEA, ADC
			Bow speed	
			Stern speed	
ALARM TABLE	ALARM TABLE			Interfaces
	Alarm Table			Internal interface