



Manual Control Tool

SHIP2FAIR - Solar Heat for Industrial Process towards Food and Agro Industries commitment in Renewables

Grant agreement: 792276

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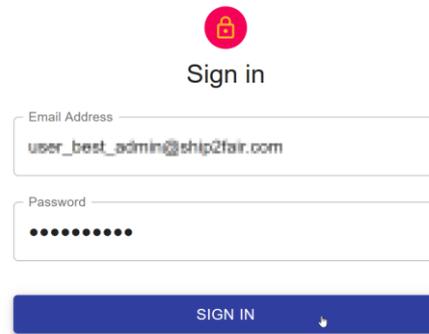
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Manual of the Ship2Fair Control Tool

1) Log In

- Get username and password from info@ship2fair-h2020.eu
- Enter <https://controltool.ship2fair.cloud/> and log in



Sign in

Email Address
user_best_admin@ship2fair.com

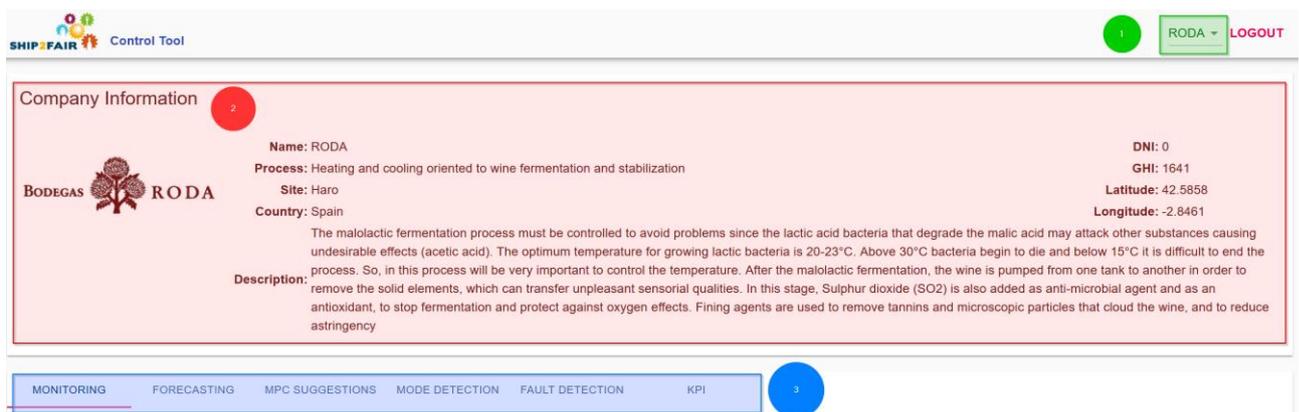
Password
●●●●●●●●

SIGN IN

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2) General Information

- (1) Select a plant in the drop down menu
- (2) General company and process information
- (3) Control Tool features
 - a. Monitoring: Visualize historic data
 - b. Forecasting: Visualize future data
 - c. MPC suggestions: model predictive control suggested parameters
 - d. Mode detection: data-driven modes of operation detection
 - e. Fault detection: neuronal-network based fault detection
 - f. KPI: key performance indicators



SHIP2FAIR Control Tool

RODA LOGOUT

Company Information

Name: RODA **DNI:** 0

Process: Heating and cooling oriented to wine fermentation and stabilization **GHI:** 1641

Site: Haro **Latitude:** 42.5858

Country: Spain **Longitude:** -2.8461

Description: The malolactic fermentation process must be controlled to avoid problems since the lactic acid bacteria that degrade the malic acid may attack other substances causing undesirable effects (acetic acid). The optimum temperature for growing lactic bacteria is 20-23°C. Above 30°C bacteria begin to die and below 15°C it is difficult to end the process. So, in this process will be very important to control the temperature. After the malolactic fermentation, the wine is pumped from one tank to another in order to remove the solid elements, which can transfer unpleasant sensorial qualities. In this stage, Sulphur dioxide (SO₂) is also added as anti-microbial agent and as an antioxidant, to stop fermentation and protect against oxygen effects. Fining agents are used to remove tannins and microscopic particles that cloud the wine, and to reduce astringency

MONITORING FORECASTING MPC SUGGESTIONS MODE DETECTION FAULT DETECTION KPI

3) Monitoring and Forecasting:

- a. Select a plant
- b. Define start / end date
- c. Define sensor

4) MPC suggestion

- a. Select Plant
- b. Get Q_{dot} for the boiler and the state of charge of the boilers in the predicted horizon

5) Mode detection:

- d. Select a plant
- e. Define start / end date
- f. Define mode

This section shows the operation-modes available in the system. Such operation modes have been produced analyzing the pumps signals and checking all possible ON/OFF combinations of the pumps. In the following of the section you will find what modes mean (how often do they occur? How much energy is transferred during a specific mode?). Finally you can interpret the day-to-day system performance using these modes (how much energy is transferred per mode per day? What is the time in each mode per day? What is the number of switches to a certain mode per day?).

6) Fault detection:

- a. Select a plant
- b. Define start / end date
- c. Define feature and fault

This section shows the output of the fault detection algorithm for a defined sensor (i.e. the outlet temperature sensor). Faults are detected by comparing measurements values with predicted values. If the offset is higher than a calculated threshold a warning is raised. Faults (if present) are displayed in a chart also showing measurements values, forecasted values and range of validity. Please note that you can zoom the displayed chart just drawing the area to zoom (using the mouse left button) and releasing the button. Chart will be automatically zoomed according to the selection.

7) KPI:

- d. Select a plant
- e. Define start / end date
- f. Define period

All key performance indicators are described including their units. If you choose select period "month", the KPIs will be shown in line charts comparing two months.