Manual Control Tool

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

Grant agreement: 792276

Prepared by: Bernhard Gerardts, SOLID Solar Energy Systems

Date: 30/06/2023

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 792276.
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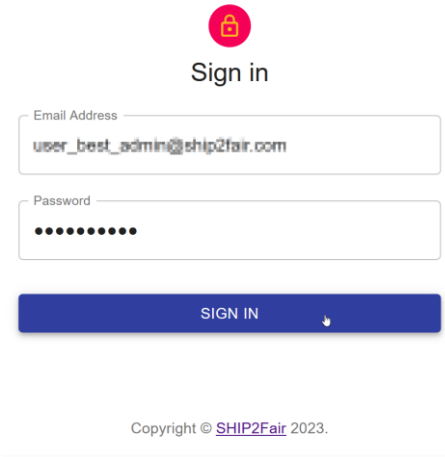
Manual of the Ship2Fair Control Tool

1) Log In

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



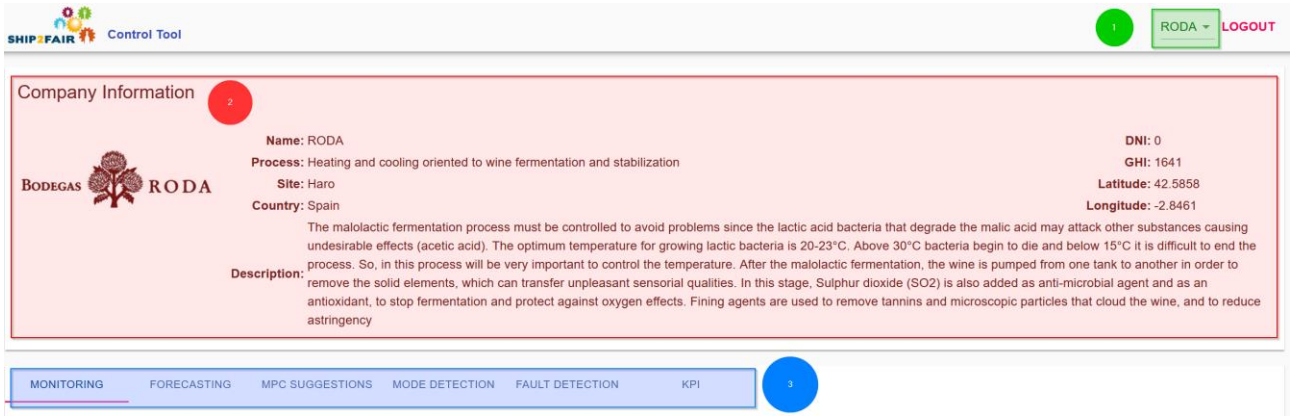
2) General Information

(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



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 horizont

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 decribed including their units. If you choose select period “month”, the KPIs will be shown in line charts comparing two months.