



SYMSITES

ECOSITES implementation for industrial-urban symbiosis through social and technological solutions

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Abstract

The present deliverable D3.6 provides the video and its structure to facilitate the understanding of the IT Regional Management Platform (ITRMP), developed and implemented within the framework of Task 3.3, 3.4 and 3.5. This document includes the structure of the screen flows, and the texts used in the video for each of the ITRMP modules: Smart Monitoring, Control and Optimization (SMCO module); I-US potential Map (IUSM module); Smart Matchmaking (MATCH module); and Policymaking based on Social Factors (κ -SDSS module)

List of Acronyms

Acronym	Meaning
ITRMP	IT Regional Management Platform
IUSM	Industrial-Urban Symbiosis potential Map
κ -SDSS	Social Decision Support System
MATCH	Smart Matchmaking
SMCO	Smart Monitoring, Control and Optimization



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1 Executive summary

This deliverable is part of the activities of the SYMSITES project, “*Industrial Urban symbiosis and its social, economic and environmental impact on different European regions*”, funded by the European research programme Horizon Europe (Grant Agreement ID: 101058426). The third objective (O3) of the project is to develop an IT Regional Management Platform (ITRMP) to foster and manage the implementation of Industrial-Urban Symbiosis (I-US) activities at regional level. The platform consists of four distinct modules: Smart Monitoring, Control and Optimization (SMCO module); I-US potential Map (IUSM module); Smart Matchmaking (MATCH module); and Policymaking based on Social Factors (κ -SDSS module).

Deliverable D3.6 is an output from the activities in Tasks 3.3, 3.4, and 3.5. It presents the content of the demonstration video, which shows the functionality of each of the modules comprising the ITRMP.

2 Objectives

The objective of deliverable D3.6 is to present the ITRMP and modules that constitute it. Its purpose is to offer a visual guide that describes the function and the range of actions that can be performed within each module, with the goal of demonstrating their usability.

3 Video content

This section provides a detailed description of the content included in the video. The following subsections outline the screen flow, the actions performed, and the explanatory text associated with each step. The video is structured into the following modules:

- Smart Monitoring, Control and Optimization (SMCO) module
- Industrial-Urban Symbiosis potential Map (IUSM) module
- Smart Matchmaking (MATCH) module
- Social Decision Support System (κ -SDSS) module

3.1 ITRMP platform presentation

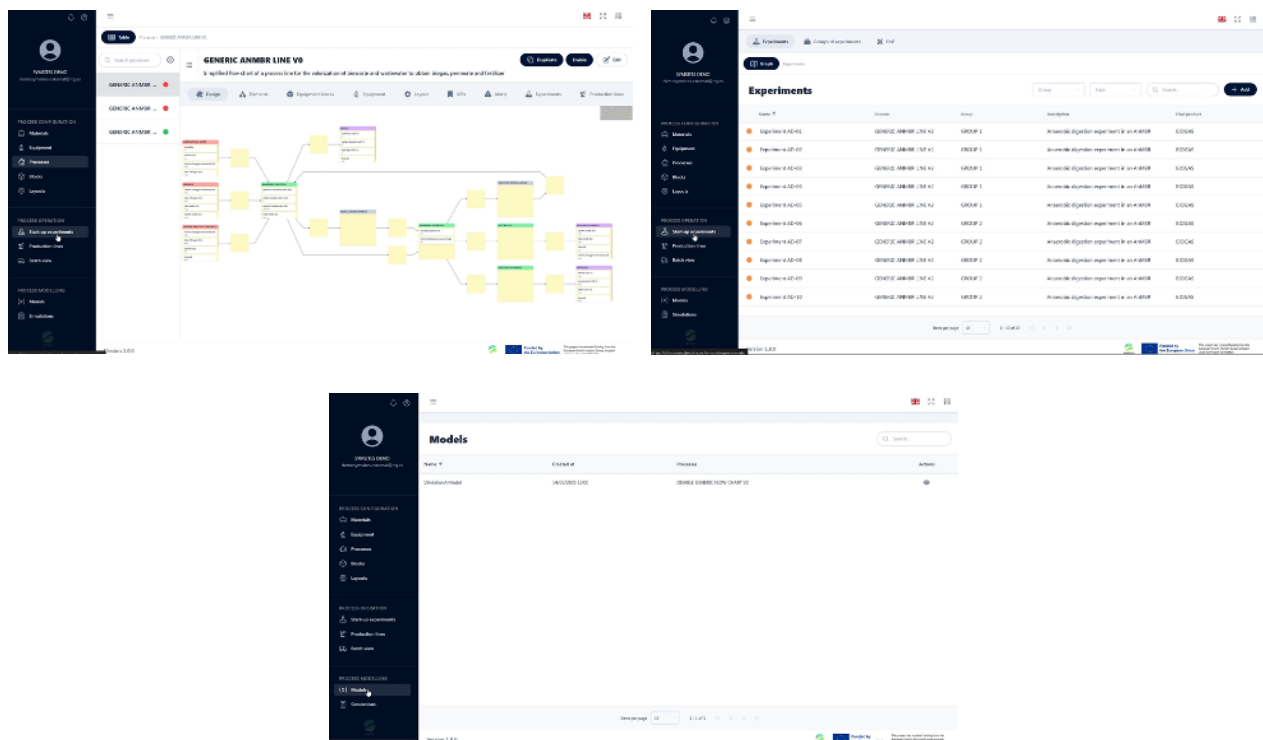
- **Title:** N/A
- **Text and screen flow:** Screen 1 SMCO module (Assist in the recording of process information and the analysis and optimization of registered parameters) >> Screen 2 IUSM module (Assist in the evaluation of the potential of I-US in a geographical area, taking into account technological, economic and environmental aspects) >> Screen 3 MATCH module (Assist in the expansion of potential synergies between key actors for collaboration within the I-US framework through a pairing assessment) >> Screen 4 κ -SDSS module (Assist in the simulation of complex scenarios to assess social impacts and support evidence-based policy making)





3.2 SMCO module presentation

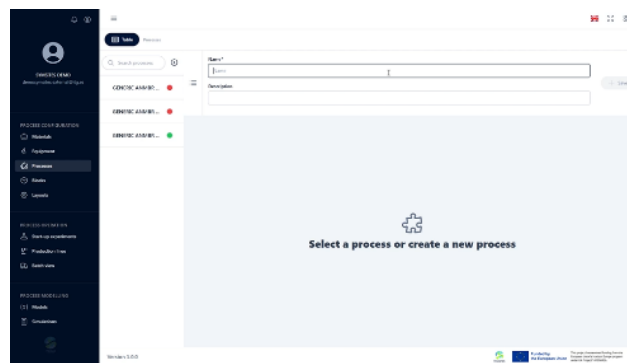
- **Title:** Screen 1 (Process configuration) >> Screen 2 (Process operation) >> Screen 3 (Process modelling)
- **Text and screen flow:** Screen 1 (Register materials, equipment and processes) >> Screen 2 (Record experiments, production lines and associated batches) >> Screen 3 (Consult and apply models related to processes)



3.2.1 Process configuration

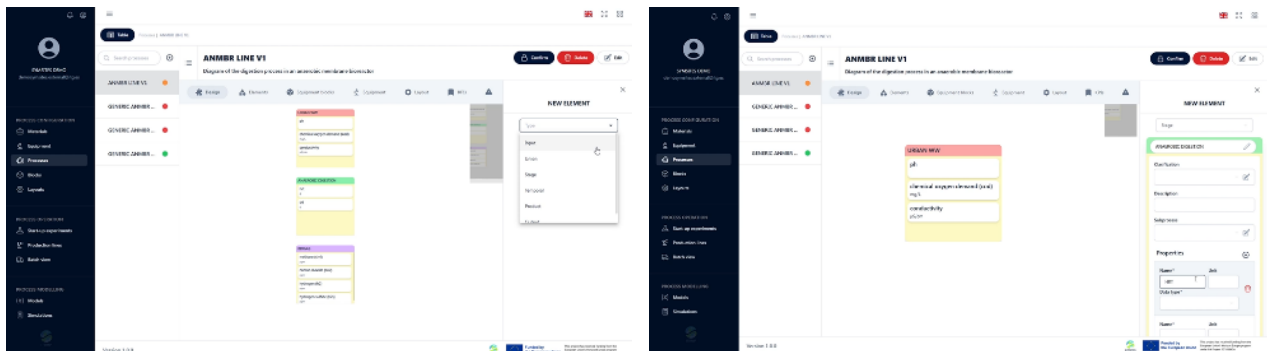
3.2.1.1 Create a process

- **Title:** Create processes and their elements
- **Text and screen flow:** >> Screen 1 (Include process flow charts and configure their stages and flows)



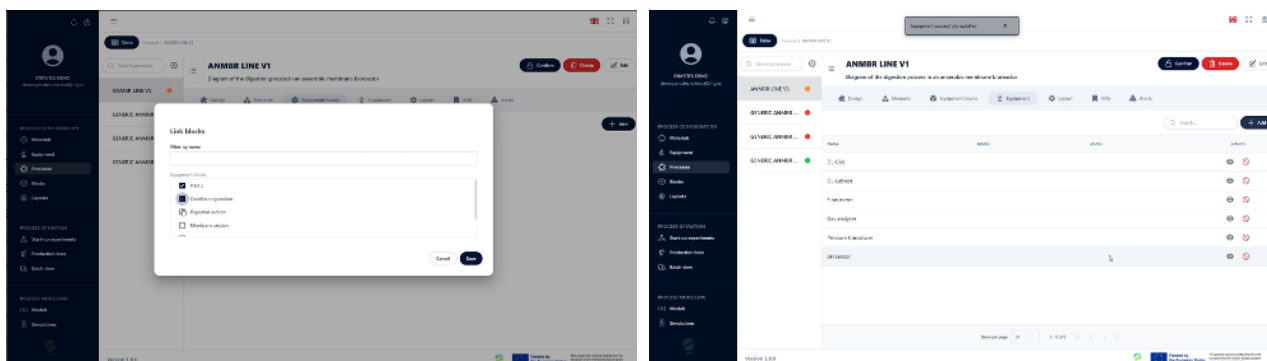
3.2.1.2 Configure elements

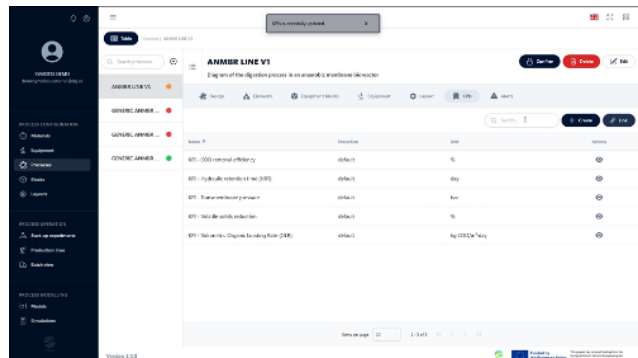
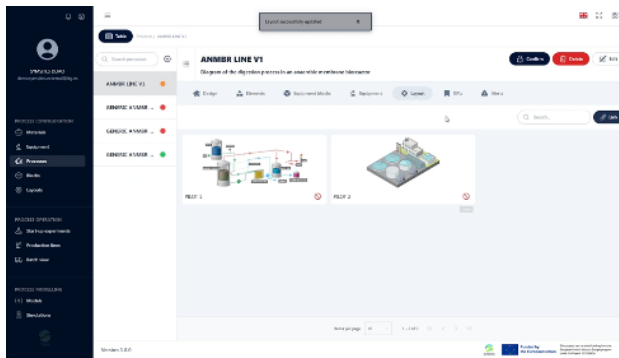
- **Title:** Create processes and their elements
- **Text and screen flow:** >> Screen 1 [Create an INPUT] (Include process flow charts and configure their stages and flows) >> Screen 2 [create a STAGE] (Same text) >> Screen 3 [create a PRODUCT] (Same text) >> Screen 4 [create an UNION] (Same text)



3.2.1.3 Link KPIs, equipment, blocks and layouts

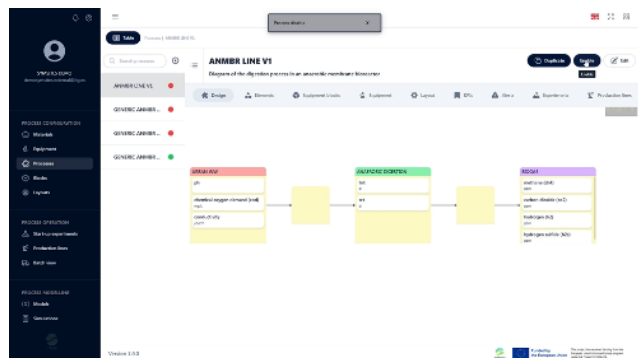
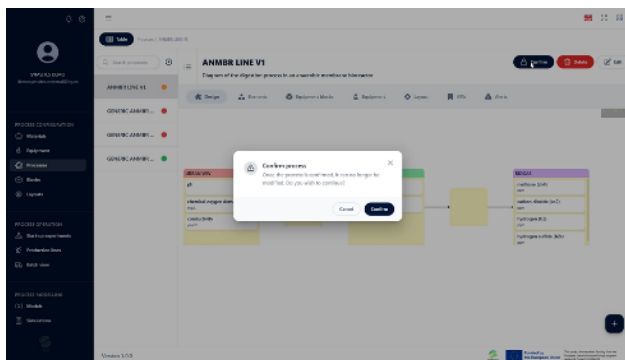
- **Title:** Associate contextual information with processes
- **Text and screen flow:** >> Screen 1 [Link equipment blocks] (Link previously configured blocks, equipment, layouts and KPIs to selected processes) >> Screen 2 [Link Equipment] (Same text) >> Screen 3 [Link Layout] (Same text) >> Screen 4 [Link KPIs] (Same text)





3.2.1.4 Edit process status

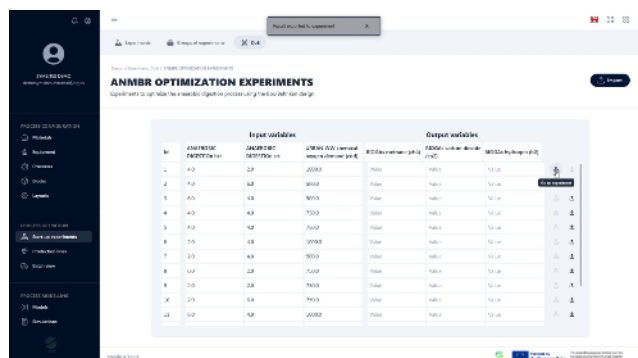
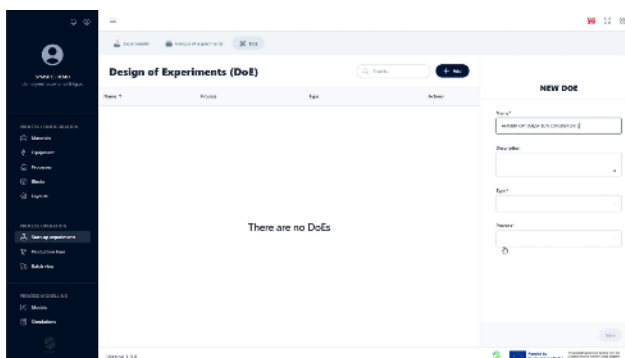
- Title:** Edit the status of processes
- Text and screen flow:** >> Screen 1 [Confirm process] (Enable or disable a process to determine its availability within other sections of the SMC module) >> Screen 2 [Disable process] (Same text) >> Screen 3 [Confirm process] (Same text)



3.2.2 Process operation – start-up experiments

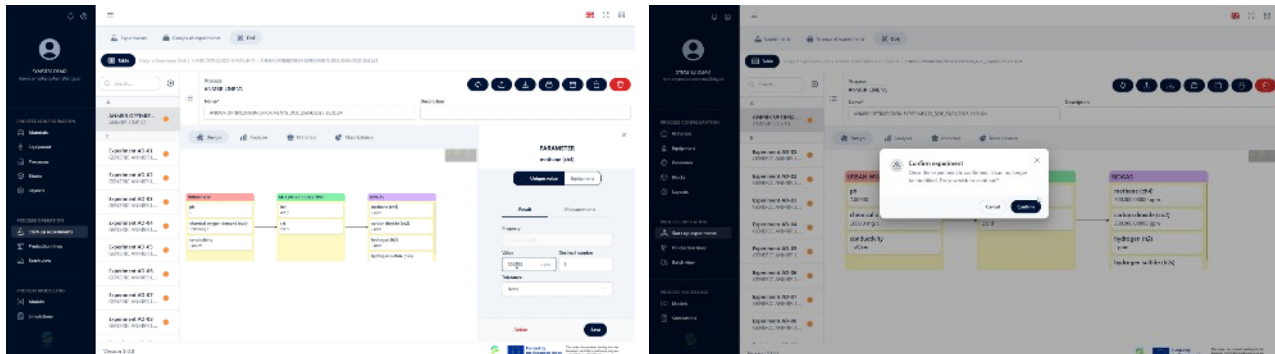
3.2.2.1 Create a DoE matrix

- Title:** Create experiments
- Text and screen flow:** >> Screen 1 [Create a DoE matrix] (Generate experiments based on processes, either using a matrix generated through the DoE methodology or directly within the experimentation section) >> Screen 2 [show the experiment matrix] (Same text)>> Screen 3 [Migrate one experiment] (Same text)



3.2.2.2 Upload and connect data with experiment

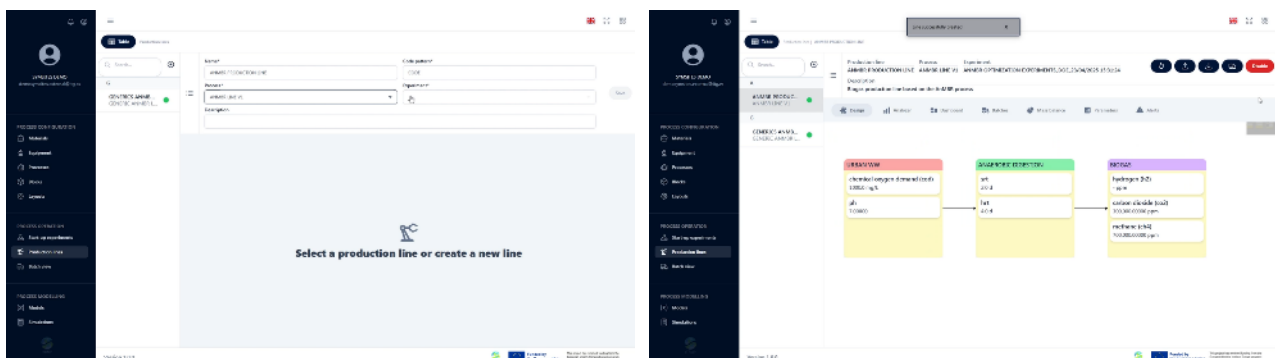
- **Title:** Upload data into experiments
- **Text and screen flow:** >> Screen 1 [Upload data in experiment] (Upload or connect data in an experiment manually in the diagram, via a form, a CSV template or through IIoT) >> Screen 2 [Confirm the experiment to use it as a base for the production line] (Same text)



3.2.3 Process operation – production line

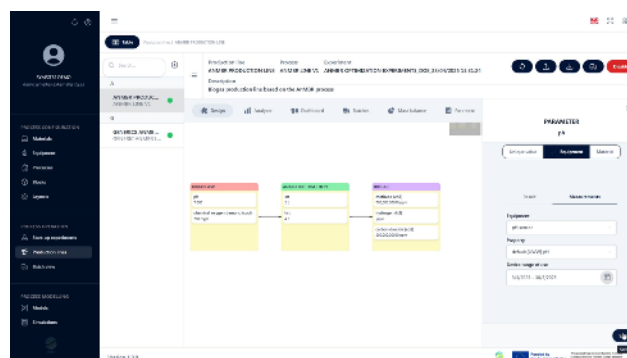
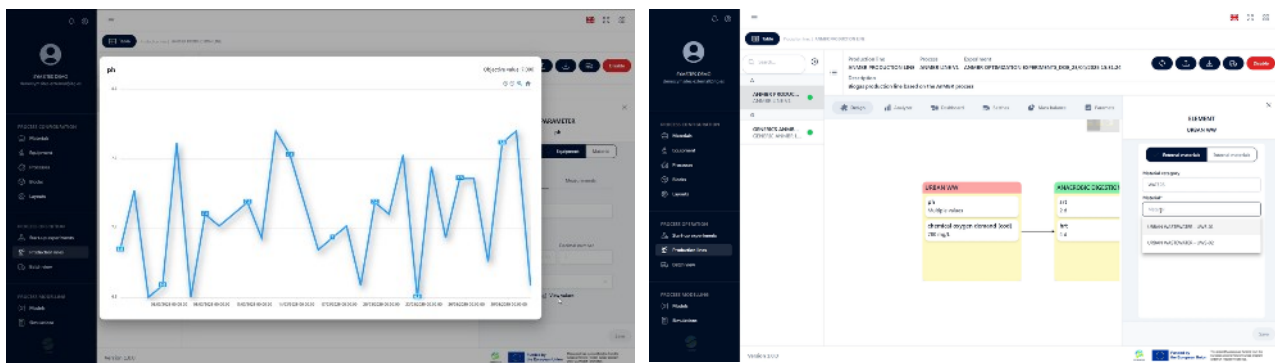
3.2.3.1 Create a production line

- **Title:** Create production lines
- **Text and screen flow:** Screen 1 [Create a production line] (Establish production lines based on selected and/or promising experiments)



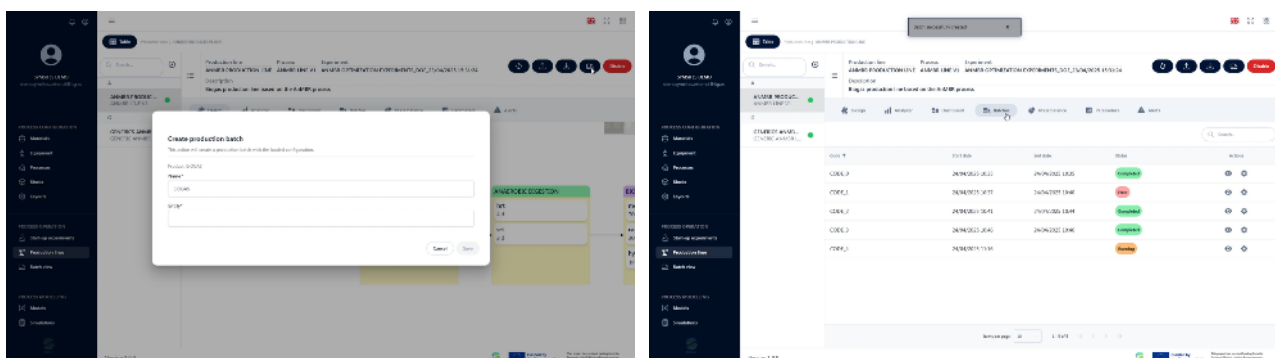
3.2.3.2 Upload and connect data with production line

- **Title:** Upload data into production lines
- **Text and screen flow:** Screen 1 [Upload data via IIoT] (Upload or connect data into a production line manually in the diagram, using a form, a CSV template, a material or via IIoT) >> Screen 2 [Upload data via materials] (Same text)



3.2.3.3 Create a batch

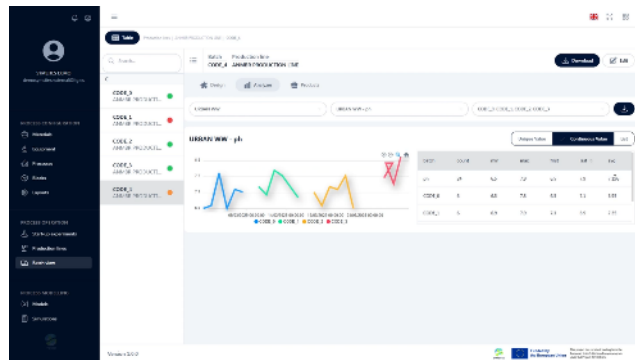
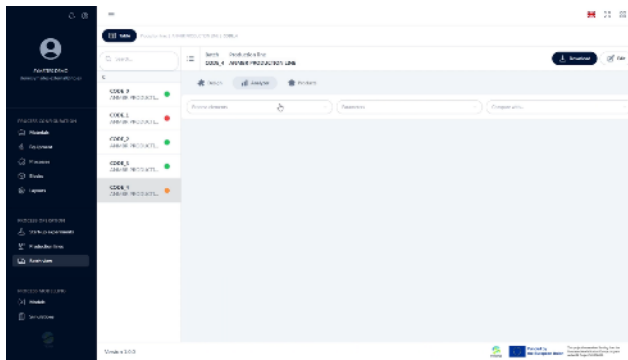
- **Title:** Create batches
- **Text and screen flow:** Screen 1 [Create a batch] (Generate batches with the data contained in the production line) >> Screen 2 [Update batch status] (Same text)



3.2.3.4 Use batch analyzer

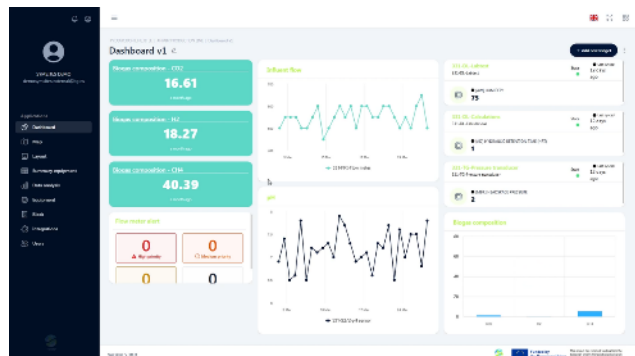
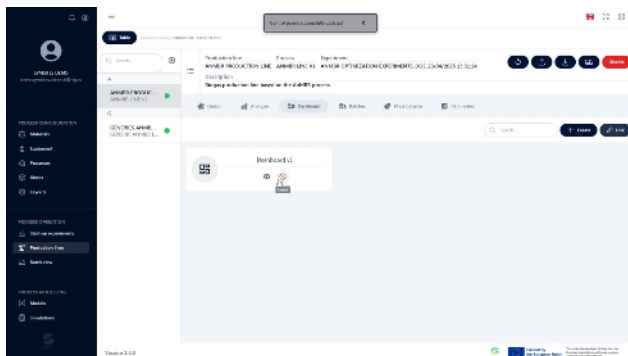
- **Title:** Analyze data
- **Text and screen flow:** Screen 1 [Go to analyzer and select the element and parameters to compare] (Use the batch analyzer to compare batches, consult statistics and detect deviations)





3.2.3.5 Configure dashboard and widget

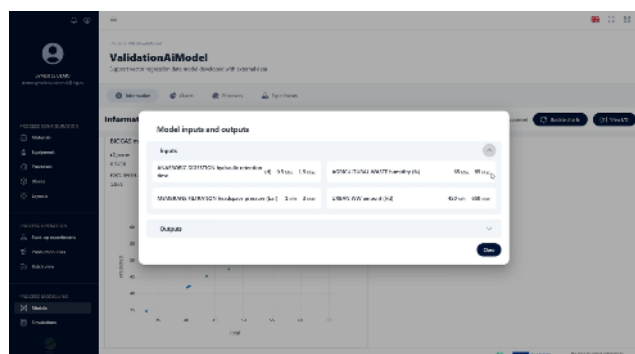
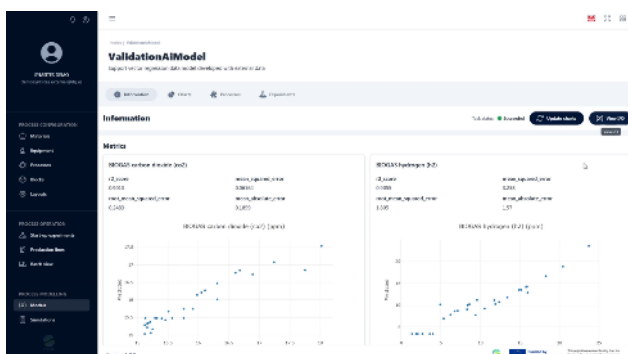
- **Title:** Configure dashboards
- **Text and screen flow:** Screen 1 [Select the creation of a dashboard] (Create and configure dashboards and widgets to support the monitoring and control of production lines) >> Screen 2 [Open a dashboard and update date] (Same text)



3.2.4 Process modelling

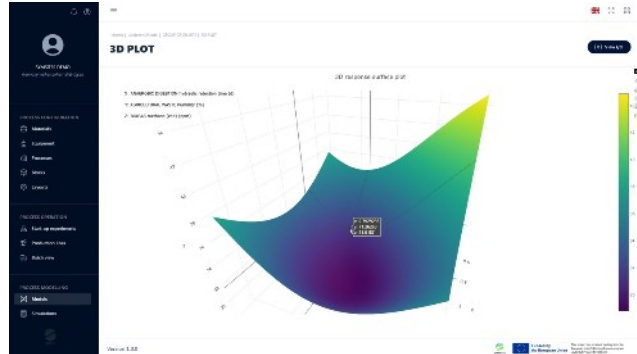
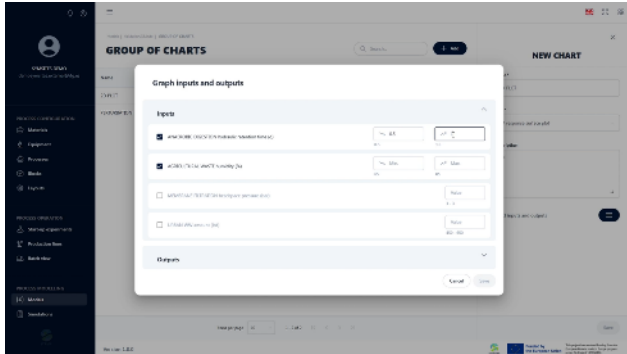
3.2.4.1 Consult model

- **Title:** Consult models
- **Text and screen flow:** Screen 1 [Show model metrics] (Visualize model metrics, input and output variables and generate model graphs) >> Screen 2 [Show the inputs and the outputs] (Same text)



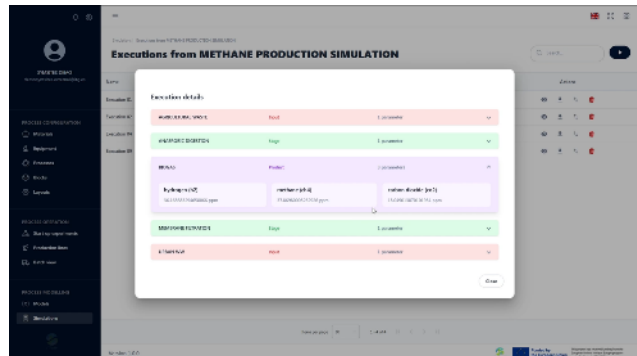
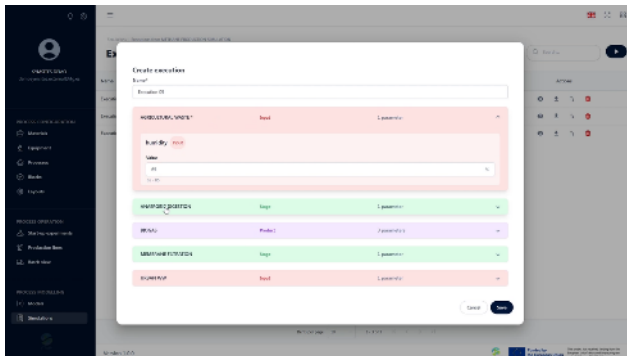
3.2.4.2 Create chart

- **Title:** Consult models
- **Text and screen flow:** Screen 1 [Open a group of charts and add a new chart] (Visualize model metrics, input and output variables and generate model graphs)



3.2.4.3 Execute simulation

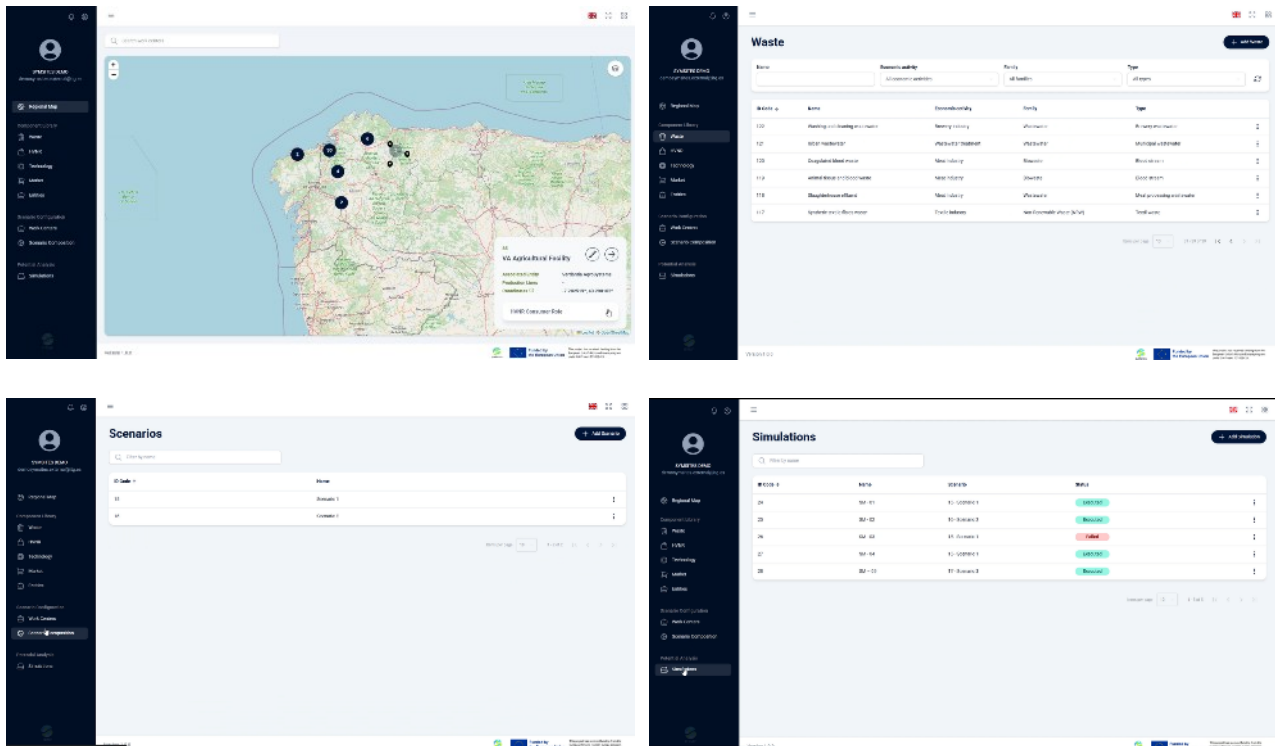
- **Title:** Use the models
- **Text and screen flow:** Screen 1 [Open a group of simulations and create a new one] (Execute simulations, determinate optimal points and explore feasible regions) >> Screen 1 [Consult simulation results] (Execute simulations, determinate optimal points and explore feasible regions)



3.3 IUSM module presentation

- **Title:** Screen 1 (Regional map) >> Screen 2 (Component library) >> Screen 3 (Scenario configuration) >> Screen 4 (Potential Analysis)
- **Text and screen flow:** Screen 1 (Consult geographically distributed work centers to evaluate the potential for symbiosis within a specific region) >> Screen 2 (Record the different items that can be used by work centers to participate in I-US) >> Screen 3 (Incorporate information from the work centers and configure the scenarios for potential analysis) >> Screen 4 (Compile the results of the potential analyses)

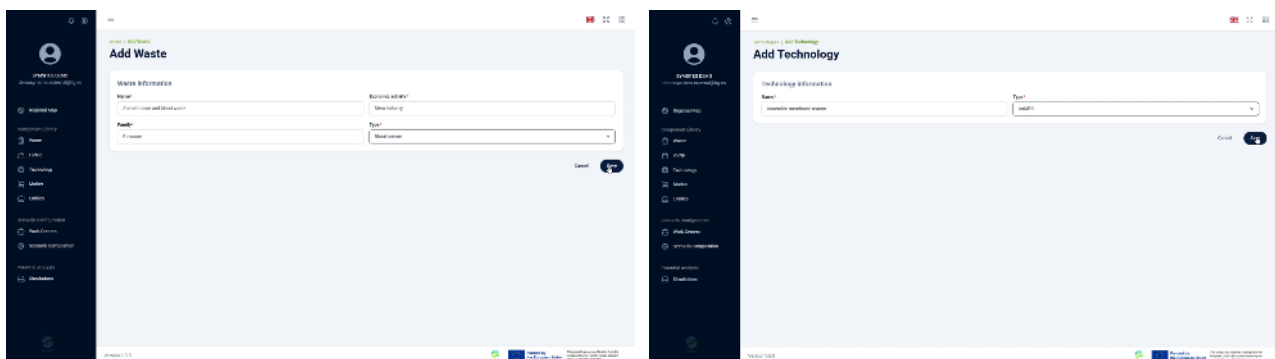




3.3.1 Component Library

3.3.1.1 Components configuration

- **Title:** Create components
- **Text and screen flow:** Screen 1 [Add Waste] (Include the necessary items related to waste, HVNR, technologies, markets, and participating entities) >> Screen 2 [Add Technology] (Same text)

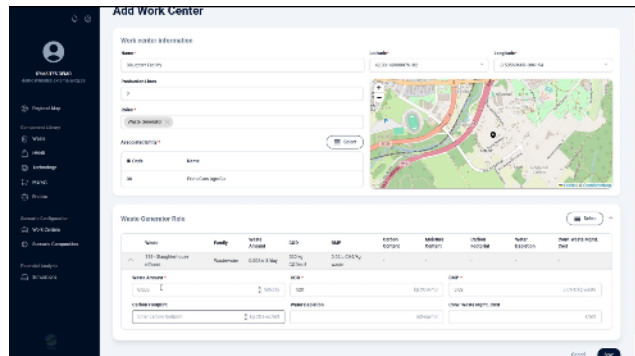
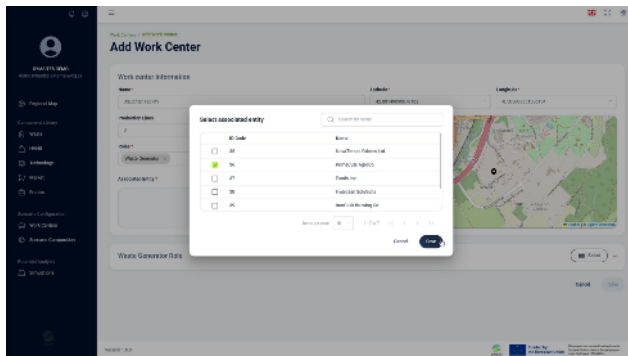


3.3.2 Scenario configuration

3.3.2.1 Create a Work Center

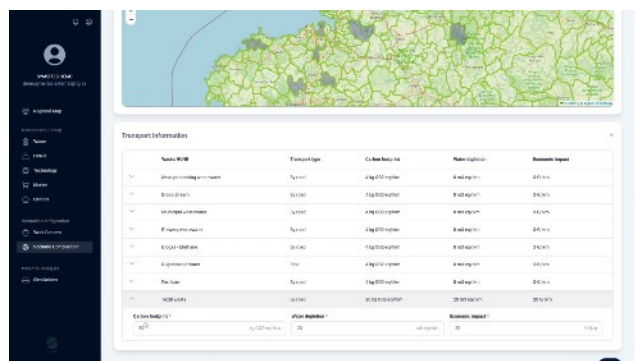
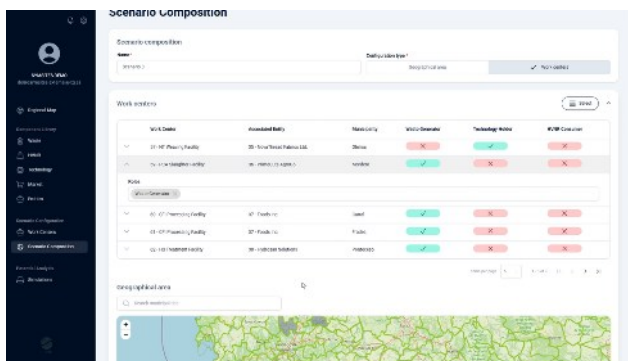
- **Title:** Create work centers
- **Text and screen flow:** Screen 1 [Add a work center] (Include geographically localized work centers and incorporate information associated with their possible roles as waste generators, technology holders and HVNR consumers)





3.3.2.2 Configure a scenario

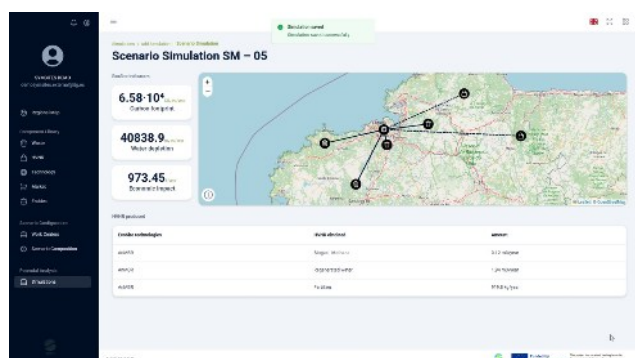
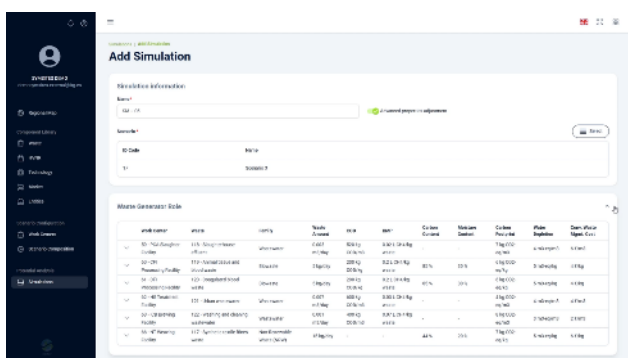
- **Title:** Configure scenarios
- **Text and screen flow:** Screen 1 [Create scenario] (Create scenarios to analyze the potential for symbiosis in a region comprised of eligible work centers) >> Screen 2 [Select the transport type] (Same text)



3.3.3 Potential analysis

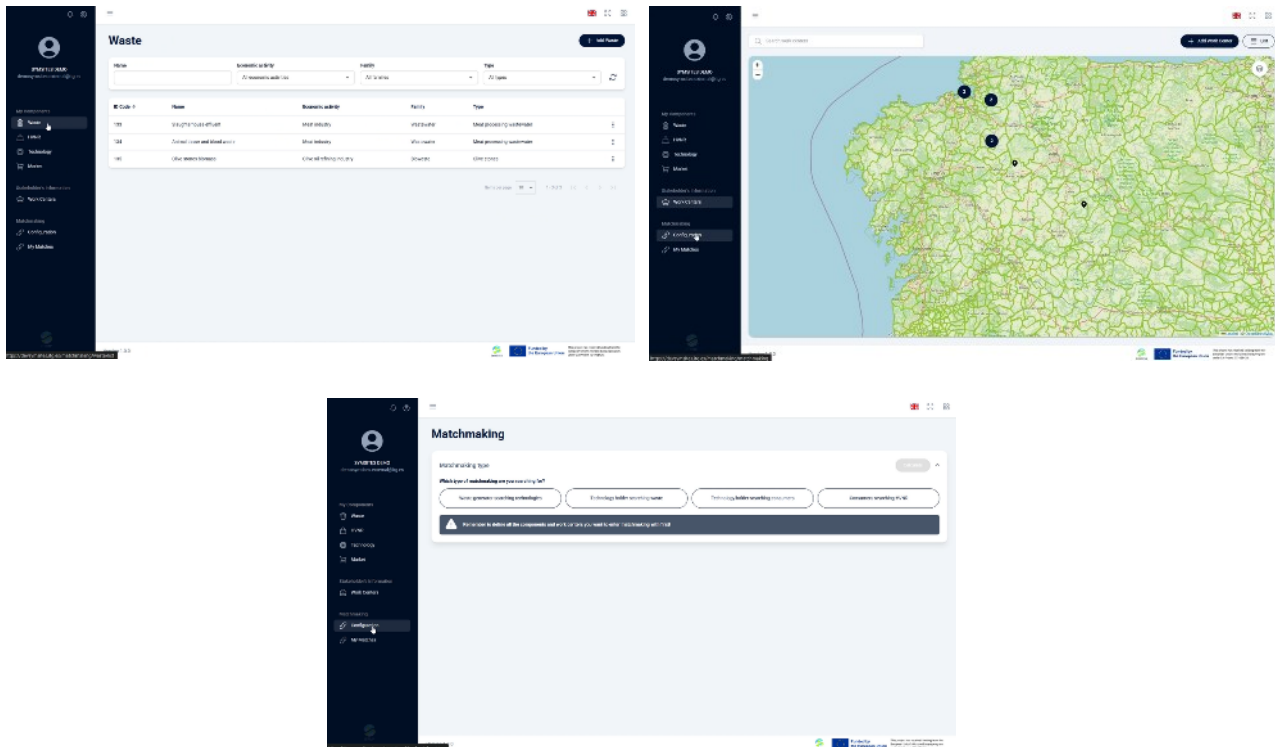
3.3.3.1 Execute a simulation

- **Title:** Execute simulations
- **Text and screen flow:** Screen 1 [Create a simulation] (Execute and visualize the results of simulations based on configured scenarios) >> Screen 2 [Visualize the results] (Same text)



3.4 MATCH module presentation

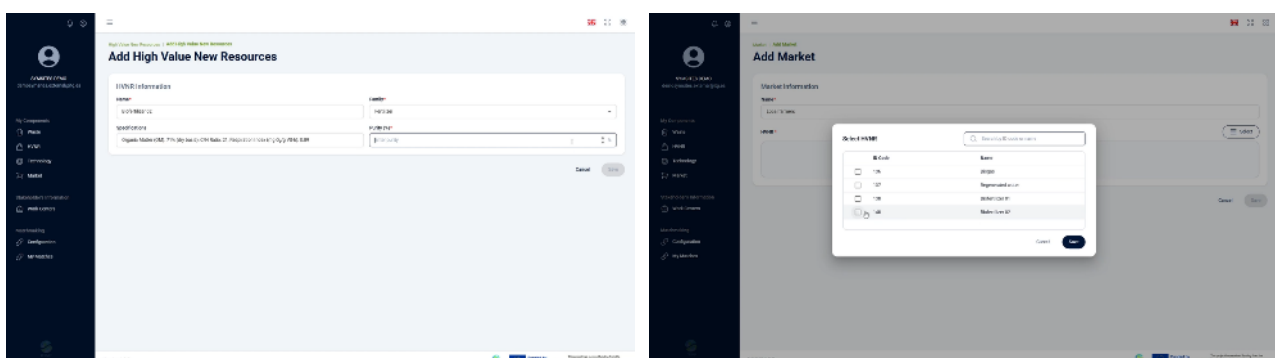
- **Title:** Screen 1 (My components) >> Screen 2 (Stakeholder's information) >> Screen 3 (Matchmaking)
- **Text and screen flow:** Screen 1 (Record the different items that work centers can use to participate in a matchmaking) >> Screen 2 (Incorporate information from the participating work centers) >> Screen 3 (Search and identify for matches between work centers)



3.4.1 My components

3.4.1.1 Components configuration

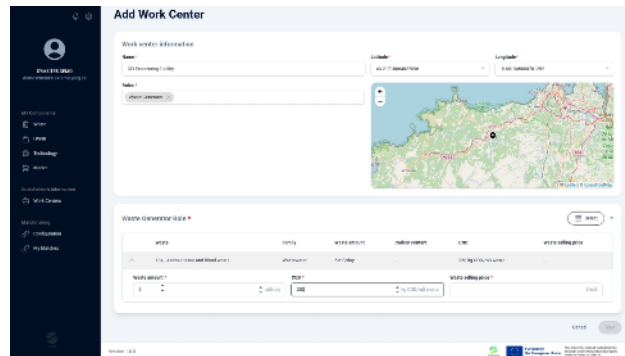
- **Title:** Create components
- **Text and screen flow:** Screen 1 [Add a HVNR] (Include the necessary items related to waste, HVNR, technologies and markets) >> Screen 2 [Add a Market] (Same text)



3.4.2 Stakeholder's Information

3.4.2.1 Work Centers creation

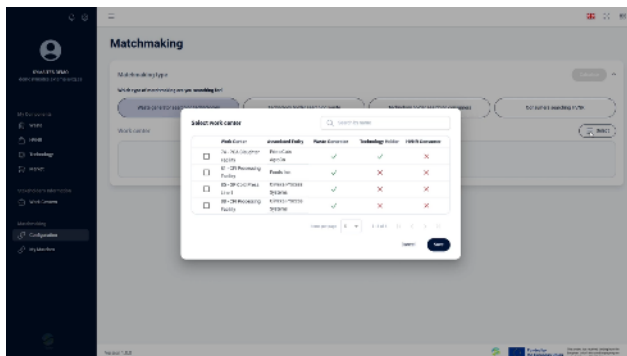
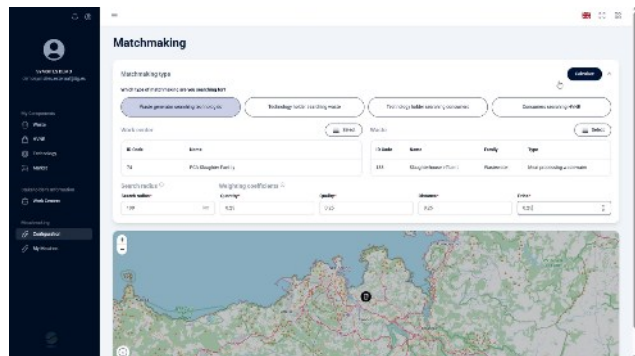
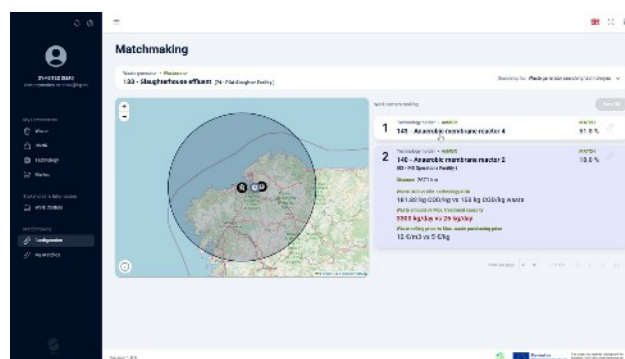
- **Title:** Create work centers
- **Text and screen flow:** Screen 1 [Add a work center] (Register geographically localized work centers and include information about their potential roles as waste generators, technology holders or HVNR consumers)



3.4.3 Matchmaking

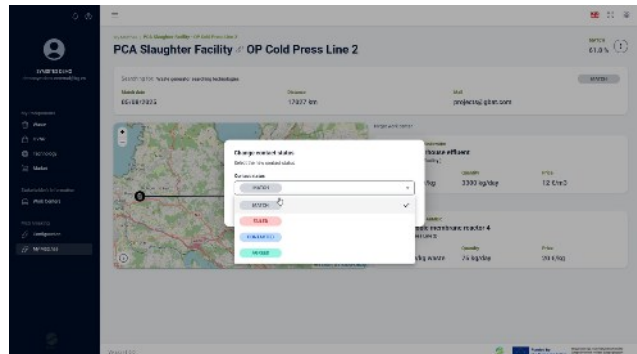
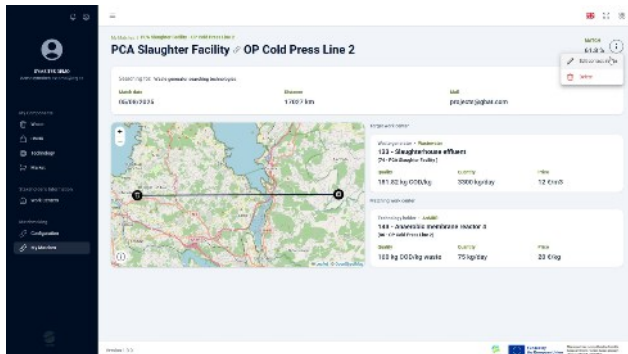
3.4.3.1 Matchmaking execution

- **Title:** Find a match
- **Text and screen flow:** Screen 1 [Select type waste generator searching technologies] (Find a match as a waste generator searching for technologies, as a technology owner searching for waste or consumers, or as a consumer searching for HVNR) >> Screen 2 [Select the information of the work center] (Same text)

3.4.3.2 Matchmaking results

- **Title:** Consult your matchmaking results
- **Text and screen flow:** >> Screen 1 [Visualize the results] (View the results, contact potential symbiosis work centers and update the status of your matches) >> Screen 2 [Change the contact with one of the work centers] (Same text) >> Screen 3 [Visualize My Matches and their status] (Same text)



3.5 κ-SDSS module presentation

- **Title:** Access to the κ-SDSS module components
- **Text and screen flow:** Screen 1 (Accept privacy terms of use) >> Screen 2 (Welcome page) >> Screen 3 (Main menu)



3.5.1 Start New Session

3.5.1.1 Complete the configuration profile to set the baseline of the experiment

- **Title:** Start a new session of FCM modelling



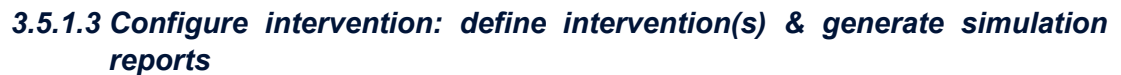
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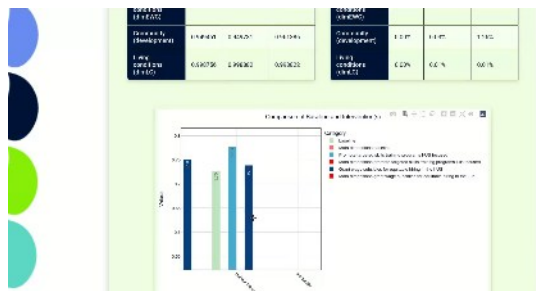
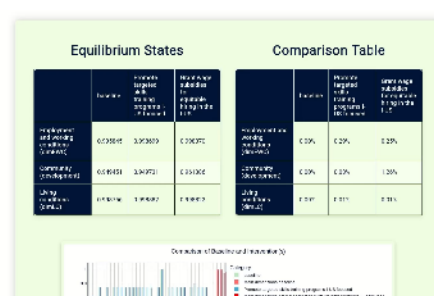
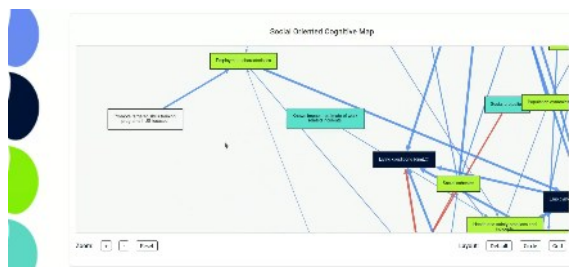


- **Title:** Simulate your baseline scenario
- **Text and screen flow:** Screen 1 (Run the scenario to analyze the initial state (or do nothing) that results from the survey configuration) >> Screen 2 (Data analysis: View and analyze the scenario baseline map) >> Screen 3 (Data analysis: Compare and verify the initial and final states of three guiding dimensions (do-nothing)) >> Screen 4 ((Data analysis: Analyze details of initial and final states of single variables) >> Screen 5 (Proceed to intervention stage).





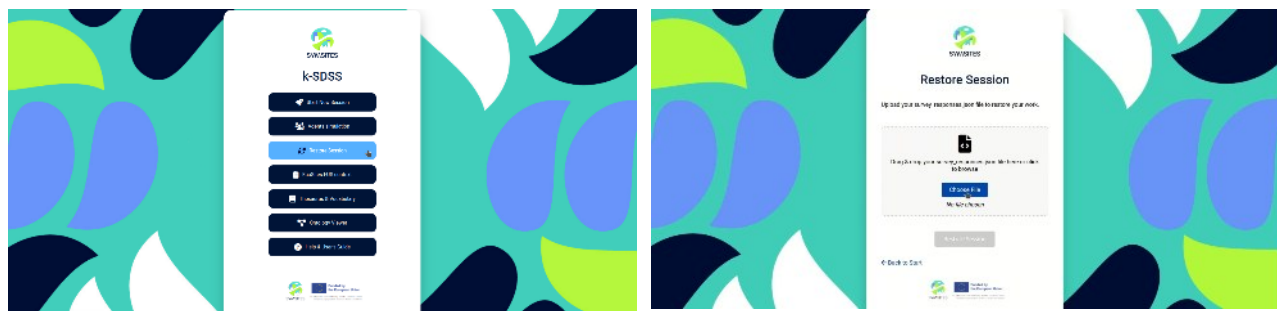
- [illegible]

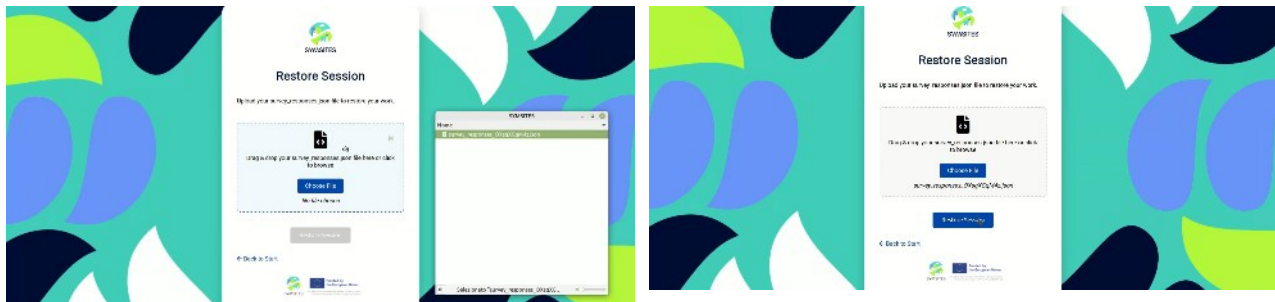


3.5.2 Restore session

3.5.2.1 Restore FCM simulations

- **Title:** Restore FCM simulations
- **Text and screen flow:** Screen 1 (Menu Selection: Restore session) >> Screen 2 (Choose and upload survey results file) >> Screen 3 (Starting ABM environment) >> Screen 4 (Go start back to Configure intervention: baseline scenario)

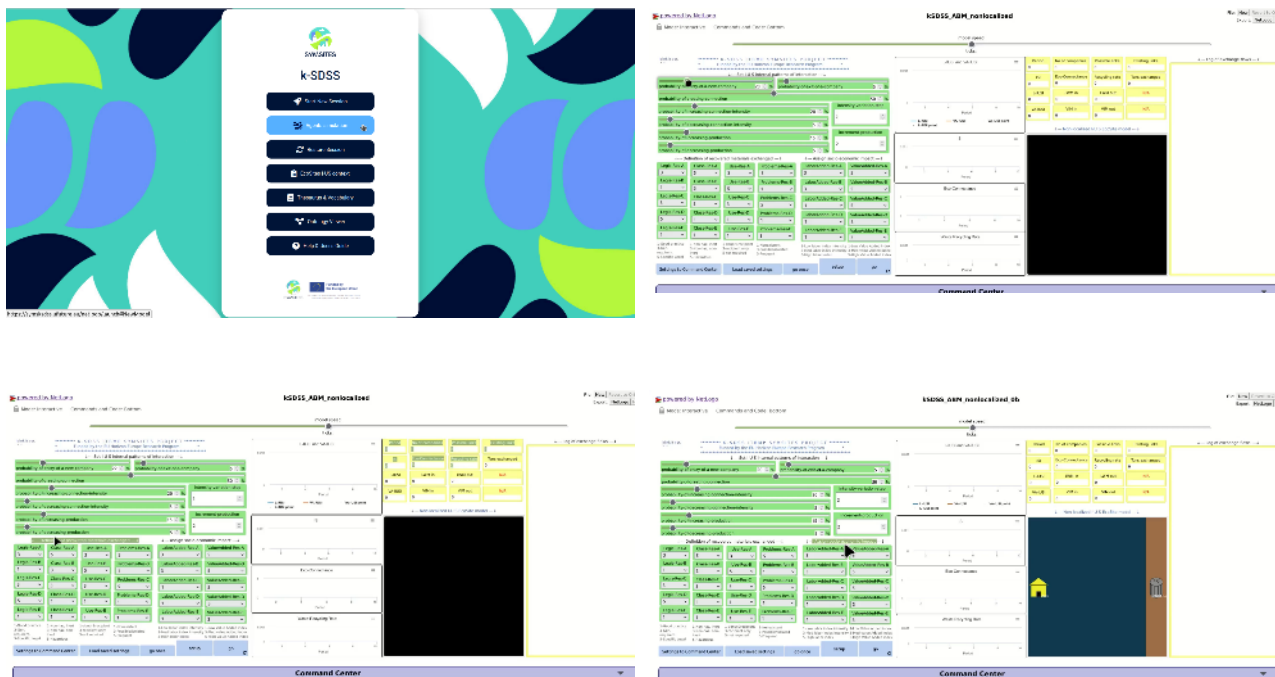


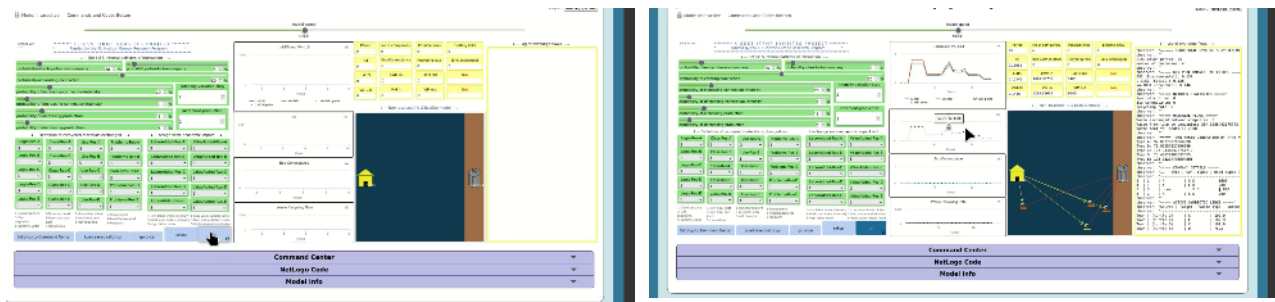
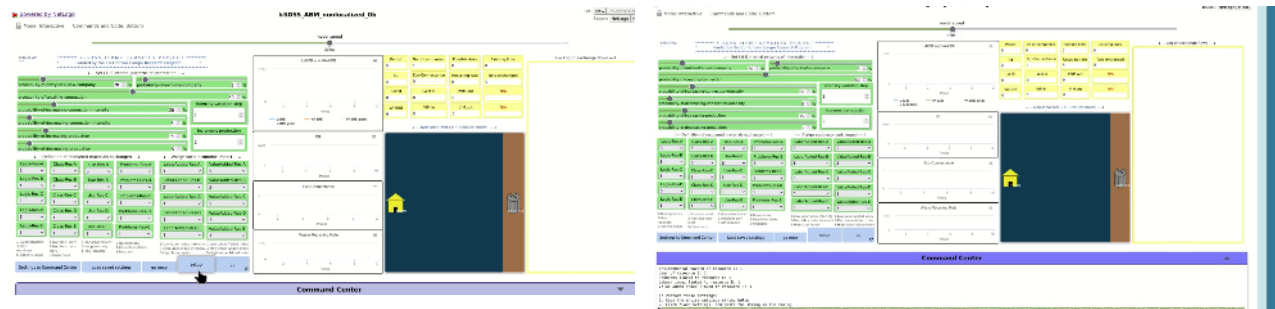


3.5.3 Agent simulation

3.5.3.1 Create ABM baseline simulation

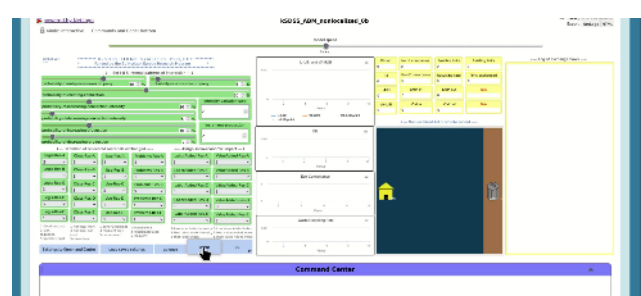
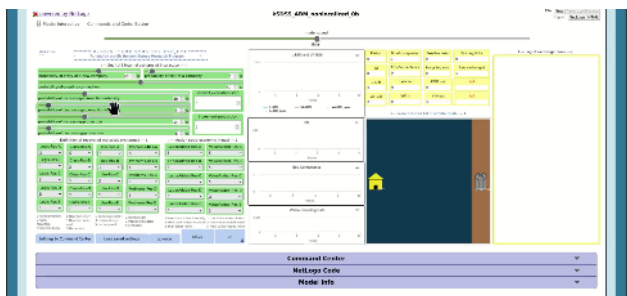
- **Title:** Simulate your baseline I-US scenario with autonomous agents
- **Text and screen flow:** Screen 1 (Menu Selection: Agent Simulation - Implement a baseline multi-agent simulation with autonomous, rule-driven agents exhibiting distinct behaviors) >> Screen 2 (Preset baseline parameters: I-US pattern of interaction) >> Screen 3 (Preset baseline parameters: I-US recovered material exchange) >> Screen 4 (Preset baseline parameters: socio-economic impact of resources) >> Screen 5 (Set up baseline) >> Screen 6 (Send settings to Command center to save set up parameters and copy to a text file) >> Screen 7 (GO to run baseline) >> Screen 8 (Watch changes in plots and interface monitors) >> Screen 10 (GO again to stop simulation)

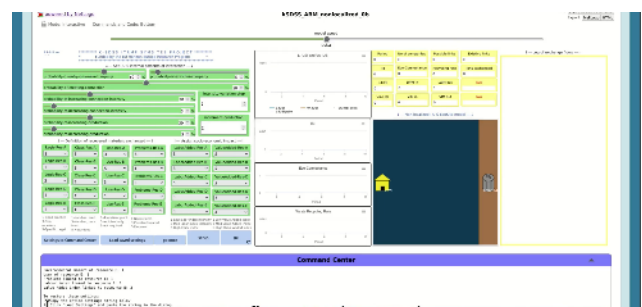
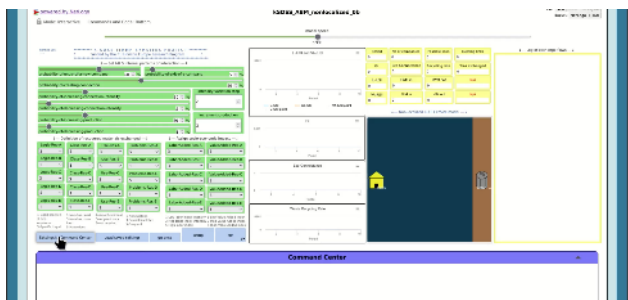




3.5.3.2 Configure ABM intervention Simulation

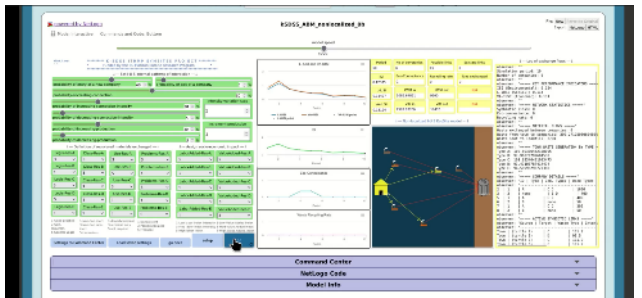
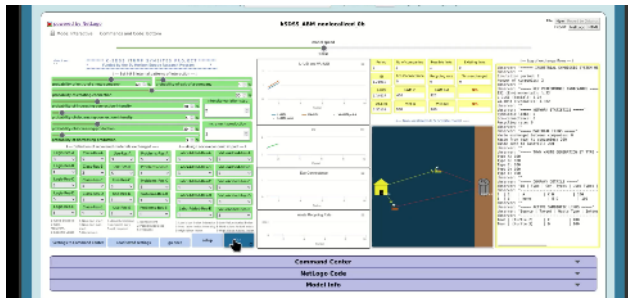
- **Title:** Configure ABM intervention
- **Text and screen flow:** Screen 1 (Tailor the simulation model to investigate the impacts of specific intervention) >> Screen 2 (Setup the intervention) >> Screen 3 (Setting to Command Center) >> Screen 4 (To save intervention parameter copy last line to a text file)





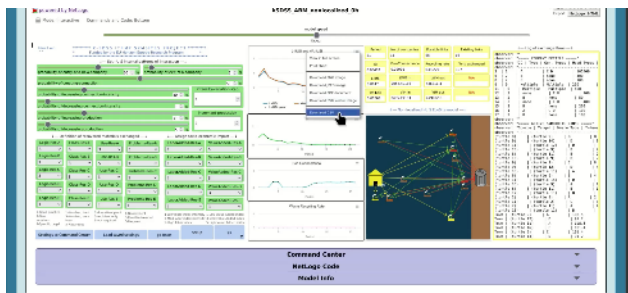
3.5.3.3 Launch intervention simulation

- **Title:** Launch intervention simulation (GO)
- **Text and screen flow:** Screen 1 (Verify the impacts and outcomes of the intervention) >> Screen 2 (Analyze the effects of the intervention)



3.5.3.4 Generate simulation reports

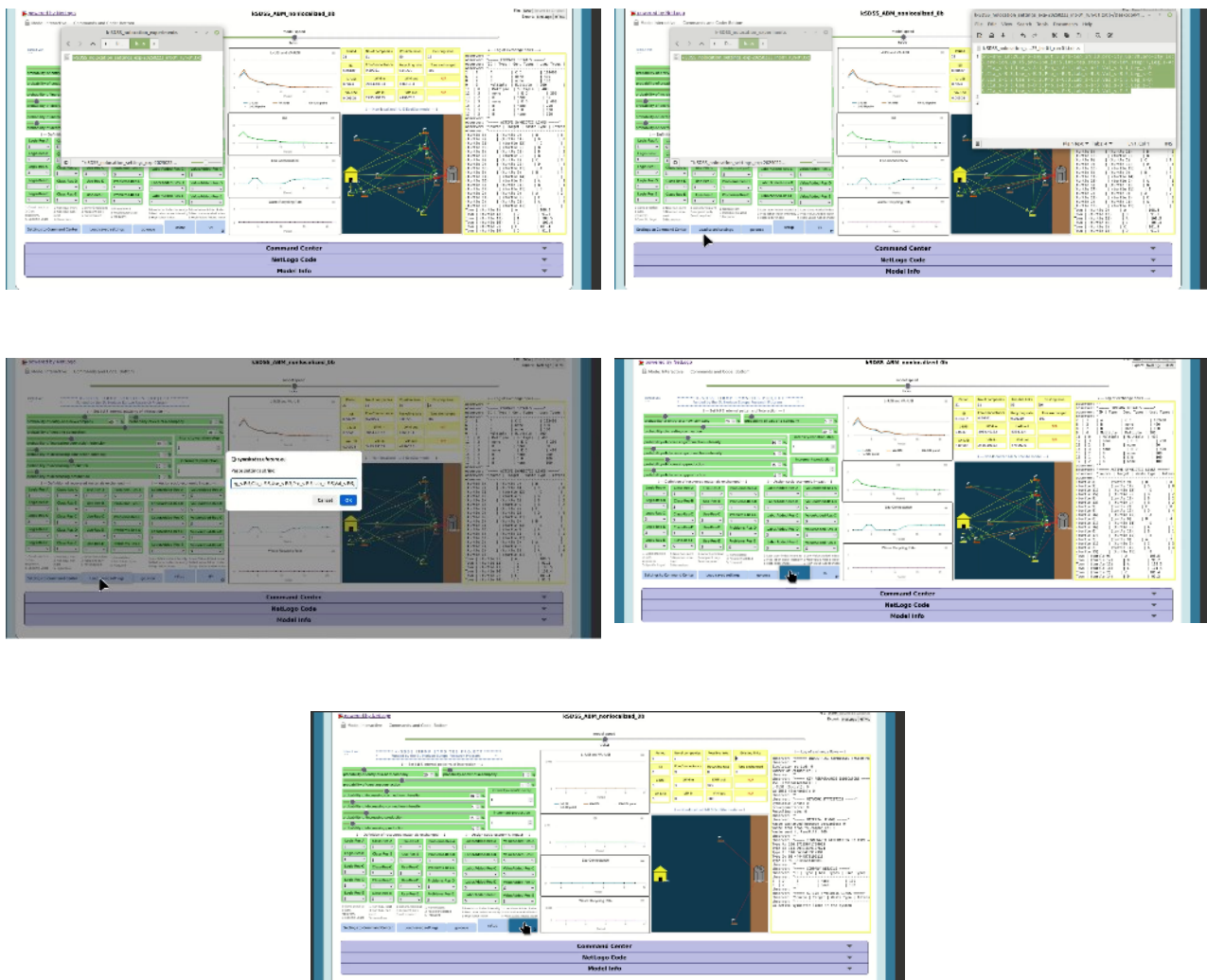
- **Title:** Generate simulation report
- **Text and screen flow:** Screen 1 (Save CSV data for analysis and comparison) >> Screen 2 (Save chart images)



3.5.3.5 Restore ABM simulation

- **Title:** Restore ABM setup
- **Text and screen flow:** Screen 1 (Restore configuration) >> Screen 2 (Copy the saved string) >> Screen 3 (Press Load saving settings, paste string and confirm) >> Screen 4 (Set up the restored configuration) >> Screen 5 (Launch simulation)





3.5.4 EcoSite I-US Context

3.5.4.1 Explore Symsites Eco-Site simulation

- **Title:** Symsites EcoSites Simulations
- **Text and screen flow:** Screen 1 (Menu Selection: EcoSite I-US context) >>Screen 2 (Explore example simulation starting from Symsites EcoSites scenarios) >> Screen 3 (Select an EcoSite) >> Screen 4 (Browse and download EcoSite simulation package & overview report) >> Screen 5 (Back to overview) >> Screen 6 (Select an EcoSite(2)) >> Screen 7 (Browse and download EcoSite simulation package & overview report(2)) >> Screen 8 (Back to overview) >> Screen 9 (Back to Home)



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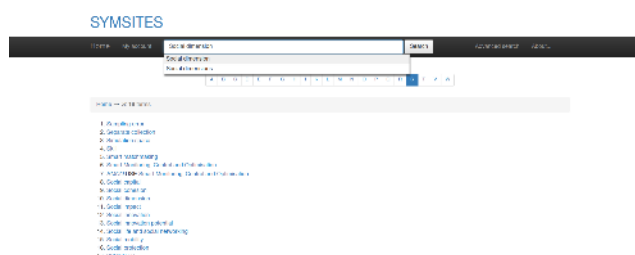
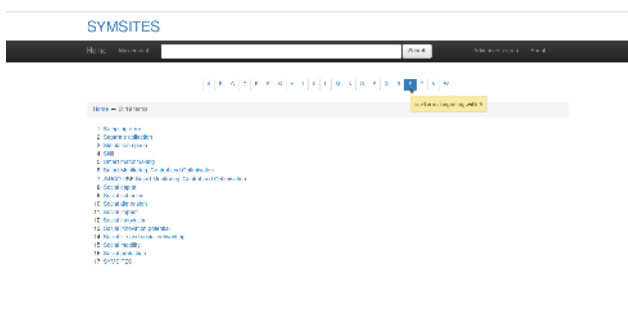


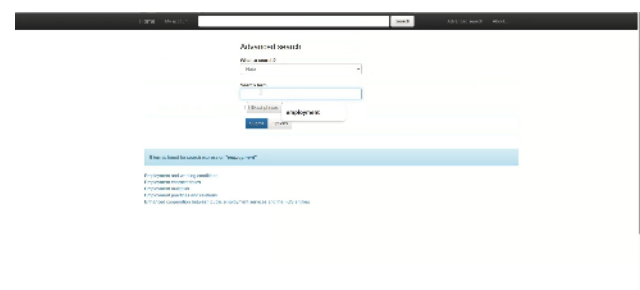
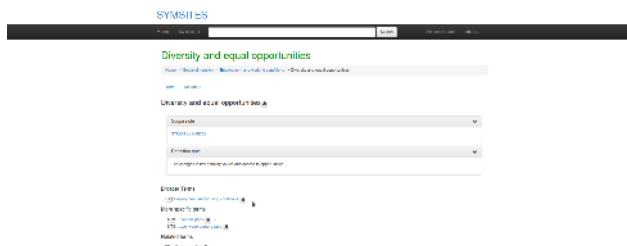
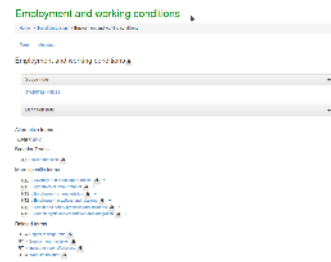
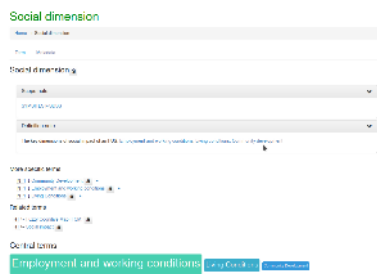


3.5.5 Terminology and semantics

3.5.5.1 Use Thesaurus & Controlled Vocabulary

- **Title:** Consult the thesaurus & controlled vocabulary
- **Text and screen flow:** Screen 1 (Menu Selection: Thesaurus & controlled vocabulary - Ensure knowledge consistency, model interoperability, and ease of understanding) >> Screen 2 (Browse main page and press arrow to expand) >> Screen 3 (Search for a term : select alphabetical order menu - S) >> Screen 4 (Search for a term, search a word > select social dimension) >> Screen 5 (Analyze the term (notes, more specific term, links)) >> Screen 6 (Analyze the term (notes, more specific term, links): see details Employment and Working conditions) >> Screen 7 (Analyze the term (notes, more specific term, links): Select narrower term Diversity and equal opportunities) >> Screen 8 (Advanced search (term, notes))

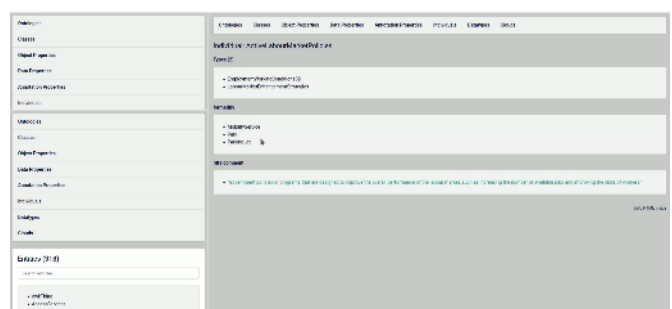
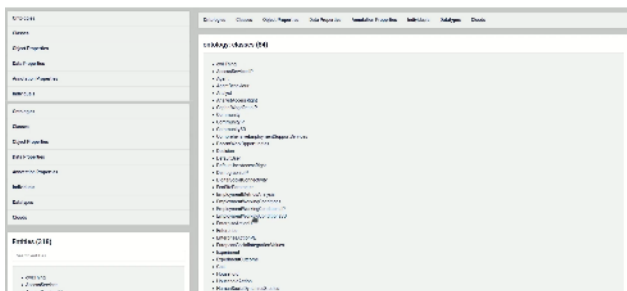
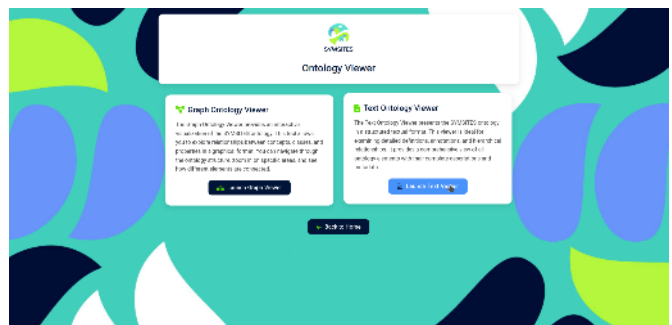
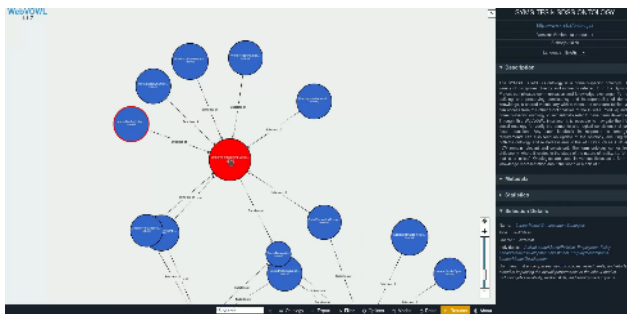
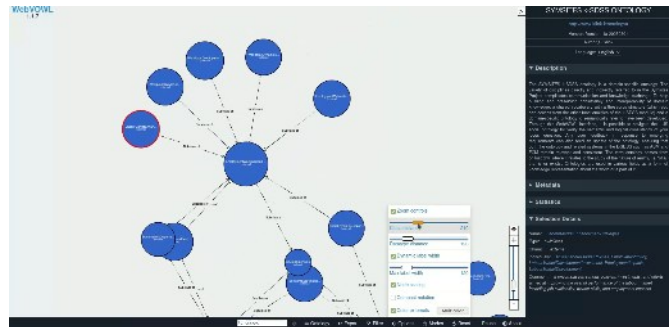
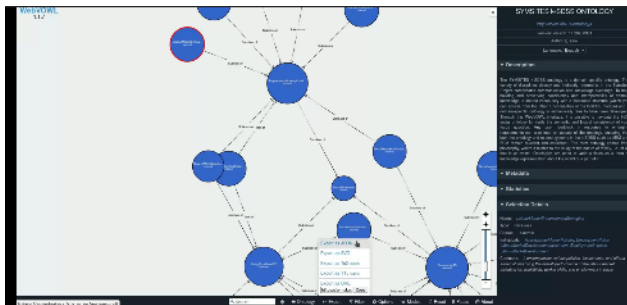
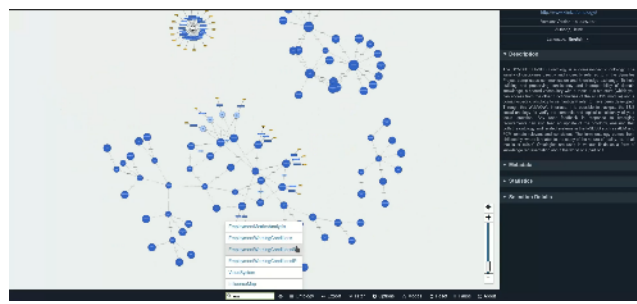
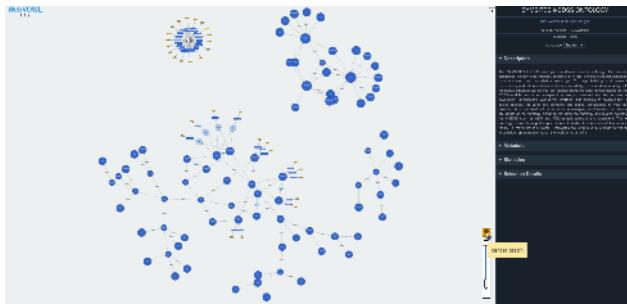




3.5.5.2 Use Ontology for Terminological Consistency

- **Title:** Consult k-SDSS specific ontology
- **Text and screen flow:** Screen 1 (Menu Selection: Verify semantic and logical consistency of focus questions) >> Screen 2 (Verify semantic and logical consistency of focus questions: Ontology Viewer Selection: Graph/Text) >> Screen 3 (Select and browse Graph Ontology Viewer) >> Screen 4 (Graph Ontology – zoom: search Employment and Working Conditions) >> Screen 5 (Graph Ontology – zoom: export) >> Screen 6 (Graph Ontology – zoom: options) >> Screen 7 (Graph Ontology – zoom: resume) >> Screen 8 (Ontology Viewer Selection: Text Ontology) >> Screen 9 (Select and browse text ontology viewer) >> Screen 10 (Select and browse text ontology viewer: example 2).



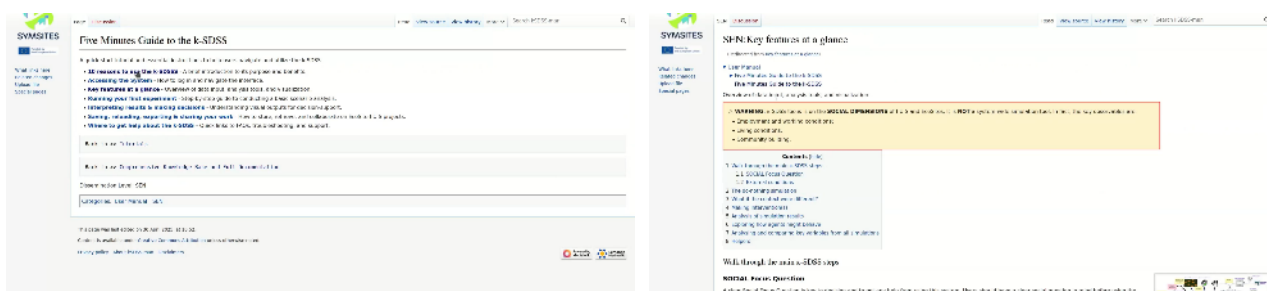
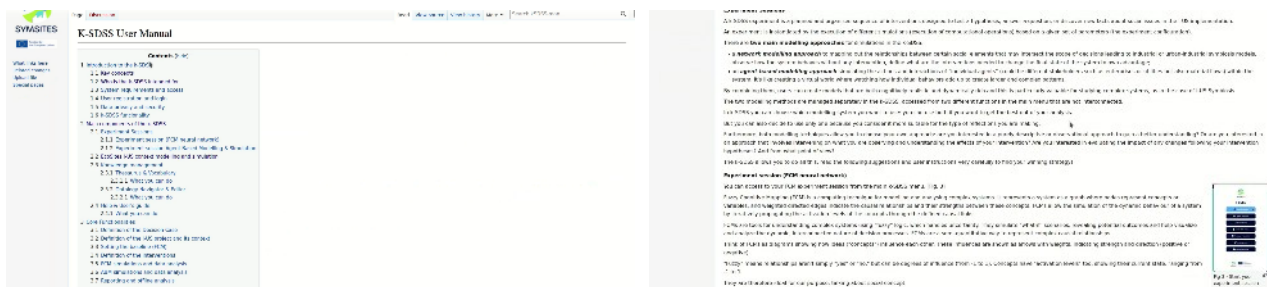
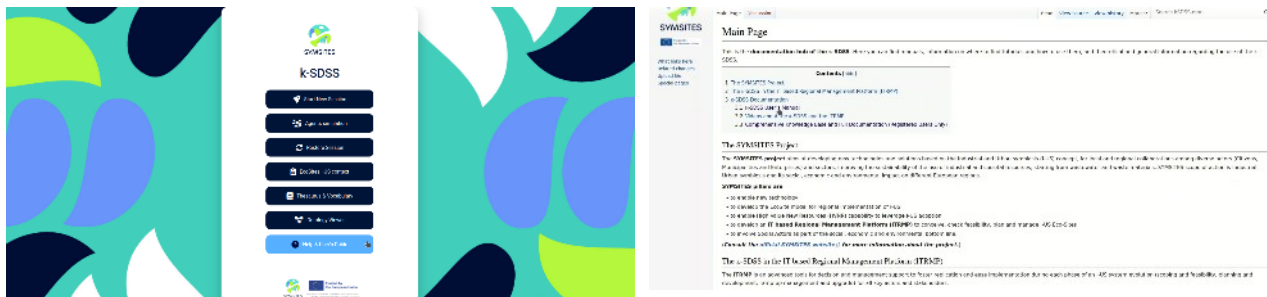


3.5.6 Help & User's Guide

3.5.6.1 Use Help & User's Guide

- **Title:** Support scenario exploration by guiding users and maintaining clarity
- **Text and screen flow:** Screen 1 (Menu Selection: Support scenario exploration by guiding users and maintaining clarity) >> Screen 2 (k-SDSS MAN – Home page) >> Screen 3

(Consult User's Manual) >> Screen 4 (Consult User's Manual: zoom) >> Screen 5 (Access and consult Comprehensive knowledge base and full documentation) >> Screen 6 (Access tutorials and tips)>> Screen 7 (Access tutorials and tips - Five Minutes Guide) >> Screen 8 (Five Minutes Guide – Key feature at a glance)



4 Access to the video

The video is available on SYMSITES' official YouTube channel: [SYMSITES - YouTube](#). You will find it along with other useful information about the project.

