Serious Game Development

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SIM4NEXUS SERIOUS GAME

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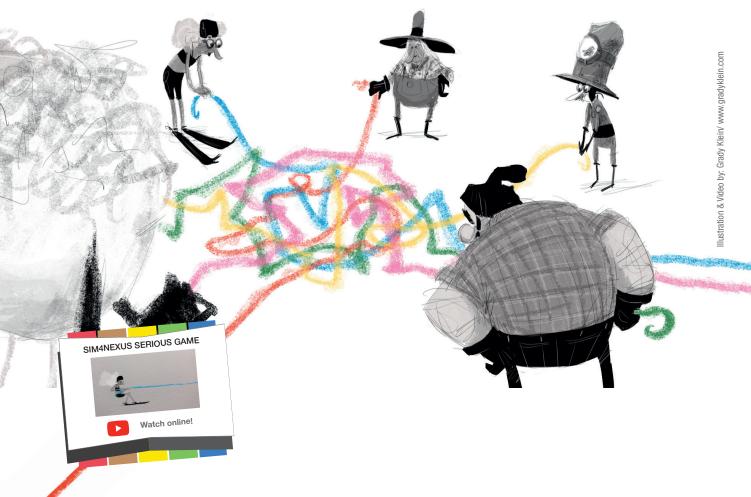
Serious Gaming provides **disruptive experience** to understand policy impacts and the interlinkages between the Nexus components

Findings

- Serious Game is available for different case studies: Greece, Azerbaijan, Latvia, Netherlands, United Kingdom, Sardinia, and more to come! Available at https://seriousgame.sim4nexus.eu

- Applied Artificial Intelligence provides autonomous and optimal policy implementation.

- The Nexus concepts are standardised and common understanding is provided thanks to the SIM4NEXUS ontology and Semantic Repository, which relies upon and extends the ETSI SAREF ontology.

Our work

The SIM4NEXUS Serious Game provides impressive user experience and state of the art technology to allow users to learn about the Nexus concepts while playing. To that end, the game relies on four main elements.

The Graphic User Interface provides beautiful infographics and a control panel to interact with the game while learning about the complex connections between the Nexus elements. The main aim is to create a realistic virtual environment where players can interact with the proposed Case Studies to reach an objective Nexus health status. The Nexus health status relies on multi-criteria objectives, which are tailored to each Case Study.

The interactions of players in the game are enabled by the policy implementations they decide to activate on each turn of the game. To compute the consequences of those policy implementations, the SIM4NEXUS Serious Game makes use of the Knowledge Elicitation Engine. The Knowledge Elicitation Engine embeds the Game Logic and the Nexus Knowledge and databases. The Game Logic mixes the simulation runs from the models needed to reach the next status of the case study, feeding and retro-feeding from the Nexus repositories: the SIM4NE-XUS ontology, the Semantic Repository and the SIM4NEXUS databases. This impact is showcased in the User Interface and, therefore, the interlinkages and implications are highlighted while playing.

Finally, the Nexus repositories are generated with three main objectives:

- Aggregate general knowledge about the Nexus

- Standardise and provide semantic meaning to the different concepts of the Nexus: the SIM4NEXUS ontology as an extension of ETSI SAREF

- Collect specific information about the case studies and user interactions to enable further analysis

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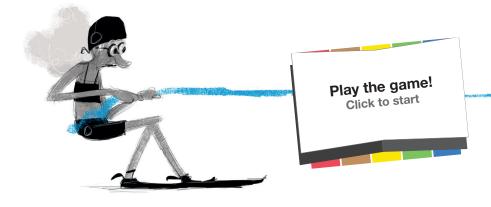✉ mehdi.khoury@gmail.com

SIM4NEXUS

Serious Game

SIM4NEXUS has developed a Serious Game. The Serious Game is a computer game that aids learning about the Nexus by helping users to understand and explore the interactions between water, energy, land and food resources management under a climate change context, divides the problem into manageable interventions, and allows participants to learn by doing. The ultimate goal of game development is to create a fun and interactive capacity-building tool to be used in research, educational settings and management.

Play the game!
Click to start

Features

- Enables players to implement policies in a **gameplay environment** and explore how policies affect different Nexus components

- **Summary information** is given about policy actions, assigned costs and potential benefits; this facilitates scorekeeping according to both financial and social capital metrics.

- **Costs are tallied against benefits,** which are revealed as gameplay progresses. This allows a player to measure progress and compare to others.

- Built upon system dynamics models with a **sound scientific basis**

Includes

- A **strategy map** that facilitates comparison of policy impacts in different regions

- A **virtual card table** in which policy cards can be applied through a drag-and-drop interface

- A **visualization system** that shows the impacts of users' decisions on the model

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