CASE STUDY
Hybrid Simulation Game Environment [HSGE], V0.1

Part of the
Generative Cultural Anthropology [GCA] Theory
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Abstract

To work within the *Generative Cultural Anthropology [GCA]* Theory one needs a practical tool which allows the construction of dynamic world models, the storage of these models, their usage within a simulation game environment, a logging possibility together with an evaluation tool. This basic requirements for such a practical tool will be described here, it is called a *Hybrid Simulation Game Environment [HSGE]*.

1 Outline

HYBRID: If one combines two independent systems to one new system then one can introduce the term 'hybrid' to make this hidden agenda explicit. In our case the two independent systems are (i) the different *web-conference applications*[1] which became a real boost by the corona pandemic, then (ii) an *interactive software platform* which provides an *interactive web page* as an interface. Because it es a standard feature of all web-conference tools actually in use to share documents between the participants – including web pages – one can easily integrate the interactive web-site of the software platform with a web-conference.

[1]The author of this text uses mainly the tool from webex.com, but others are equally possible. Sometimes it matters which kind of web-browser one is using. They are not really 100% in agreement in their functionalities with regard to web-conferences.

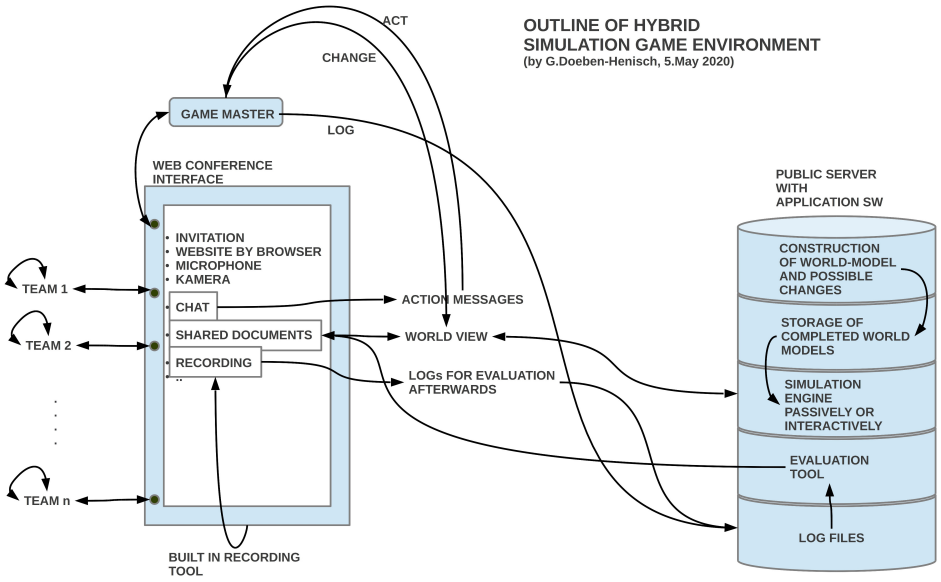

Figure 1:]
Outline of a possible Hybrid Simulation Game Environment [HSGE]

HYBRID SIMULATION GAME ENVIRONMENT: The concept of *simulation game [SG]* is quite old and the concept as such does neither need a computer assistance nor a web-site. The different players – often complete teams – and the game master can act in a completely analogous world without any digital aids. But at that moment when the different players can not meet easily at the same location it can be of interest to use a web-conference tool to enable an *informational entangled state* where players at different physical locations can interact through a data stream enabling a *virtual situation* as if they would be at the same location. The other point is the *dynamic world model* which is the point of reference for all players in a simulation game: with a *growing complexity* by numbers of elements of the world as well as by the number of possible changes caused by actions it can become difficult for a human game master to handle all these elements and changes in a comfortable short time. In that case a computer program can be of great help to do all the computations and the visualizations of the actual world state. If both aspects come together, if people have difficulties to share the same physical location at a certain point of time and if the dynamical world model needs a computational support then we have the raise of the *hybrid simulation game environment [HDSGE]*.

PLAYING TEAMS: Each playing team can have any amount of members above zero. Every team can have its own communication channels hidden from the other teams.

GAME MASTER: Usually the game master is a single person or a team of human persons to control the application of the rules of the simulation game and the correctness of the effects of changes in the world model. In case of complex games the game master can use computational models to help the management of the world model.

WEB-CONFERENCE INTERFACE: A typical web-conference tool today offers at least the following functionalities:

1. *Invitation:* The game master can invite the players by email. Such an invitation email provides a web-link to enter the game.
2. *Website by a browser:* To activate the link one needs a web-browser to activate a web-page as entrance to the web-conference.
3. *Microphone:* Within a web-conference one can use the microphone of the computer to talk the conference; as well one can hear what will be said by the others by the audio system of the computer.
4. *Camera:* Within a web-conference one can use also the video-camera of the computer to send an image from oneself to the conference; at the same time one can receive the pictures from the other participants on the screen of the computer. If a document will be shared during the conference – as assumed in this text – then one can inspect this document.
5. *Chat:* There is also a chat channel which allows the sending of text-messages.
6. *Shared documents:* It is assumed that one can share documents (including web-pages) that every participant can see these documents.
7. *Recording:* If all participants agree then one can record the whole sessions – or parts of it – for alter inspection.

DYNAMIC WORLD MODEL: The *world model* in a simulation game is a *dynamic* model which can change its state depending from the actions the playing teams have announced. The changes are described by *change rules* which become triggered by *action messages*.

SIMULATION (Passively or Interactively): The change from one state to another state guided by some change rules is called a *simulation*. In a *passive* simulation these changes happen without any interaction by some player. They are solely driven by the *start state* and the *applicable change rules*. In an *interactive* simulation the selection of the change rules is dependent from some players.

RECORDING for EVALUATION: During a simulation game one can record all states, actions and changes.

EVALUATION: The evaluation after a simulation game is important to enable the participating players to understand what really happened and *why* it happened. Which player selected which action and the interesting question, why he/she/it did this.