

S4Game

TRAINING OF SOFT SKILLS FOR SURGICAL TEAMS USING AN IMMERSIVE SERIOUS GAME

NEWSLETTER

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S4GAME SERIOUS GAME

The second main commitment of the S4Game project was to develop a serious game for improving soft skills. Using virtual reality (VR) technology, the consortium has created a serious game based on decision trees that enables the development of soft skills in a modern, immersive environment.



Snapshot of the S4Game serious game

The game presents five of the case studies detailed in the handbook in virtual form. The serious game helps to develop the decision making, leadership, situation awareness, communication and interaction and teamwork skills. In each case, one main and one or more secondary skills are developed. The main target groups are health professionals working in the operating room (OR): surgeons, nurses (scrub nurse, circulating nurse) and anaesthetists.

Cases and skills shown are as follows:

- Inexperienced team member repeating mistakes (teamwork, communication and interaction)

- Clashes between different profiles (leadership, teamwork, communication and interaction)
- Missing instrument (decision making, teamwork, communication and interaction)
- Absence of correct stapler decision making, teamwork, leadership)
- Problem of spread attention (communication and interaction, teamwork)

Originally, the S4Game serious game was only going to be available for VR glasses, but the COVID-19 pandemic made very difficult to reach end users, so the consortium decided to make a desktop version available for everybody. Both versions are available on the S4Game website (www.s4game.eu) for free of charge. The game has been designed for Oculus Quest VR glasses and also runs on any desktop computer without installation (left click – selection, right click (hold and drag) – camera movement). The game is now available in 5 languages, in English, Spanish, Portuguese, Czech and Hungarian.

The consortium faced several challenges during the improvement. The first challenge was the creation of a tool to offer the user the possibility of creating new dialogs in a simple and intuitive way through a graph. For this purpose, an analysis of the use cases to be implemented was carried out. We ended up categorizing the types of network nodes into four:

Dialogue nodes	Answer nodes	Question nodes	Situation nodes
<ul style="list-style-type: none"> • sentence • speaker • ref. to audio 	<ul style="list-style-type: none"> • points • end of game? • feedback 	<ul style="list-style-type: none"> • question • interlocutor • audio 	<ul style="list-style-type: none"> • description • first one: S1

This differentiation has been necessary so that the script-in charge of structuring the cases within the game works correctly. To adapt all the use cases to this structure, we had to make some small modifications in some specific situations.

Additionally, for some specific actions of certain dialogs we had to develop a script as a dictionary that was responsible for launching the events corresponding to these actions. This had to be done in a separate script to separate this function from the network functionality, because if in the future someone else wants to generate a new case, the option to add these events should not be available to the end user.

To include several languages in a network, until now the only alternative was to replicate the network by changing the texts of the different nodes. This work was very tedious and repetitive, so to avoid it, a system was developed by which a file can be added to the game with the name of the corresponding case containing the texts with their respective references to the id of the node to which they correspond, so that the translation is automatic once you are playing.

#S4GAME MULTIPLIER EVENTS IN JUNE-JULY-AUGUST 2021.

7 multiplier events were organized to raise awareness of the project and address potential target groups. Events are organised „in-person” or online in partner countries (Spain, Portugal, Czech Republic and Hungary), taking into account current epidemiological rules.

Dates and places of each multiplier event:

- June 25th, 2021. Multiplier Event – S4Game: call for participants – Hungary (in person)
- June 30th, 2021. Multiplier Event – S4Game: call for participants – Czech republic (in person)
- July 2nd, 2021. Multiplier Event – S4Game: call for participants – Portugal (in person and online)
- August 24th, 2021. Multiplier Event – Importance of soft skills training of surgical teams. Can be virtual reality and serious games used? – Czech Republic (in person)
- August 25th, 2021. Multiplier Event – S4Game – Hungary (in person)
- August 26th, 2021. Multiplier Event – S4Game: call for participants – Spain (in person)
- August 30th, 2021. Multiplier Event – S4Game closing workshop – Portugal (online)

After the presentation of the project and its objectives, the handbook and the developed serious game were presented at the multiplier events, together with the objectives to be achieved and the skills to be developed. After the presentation, the participants had the opportunity to try the S4Game serious game, in both desktop and VR glasses versions. More information about multiplier events is available in the project website.



S4game Multiplier Event in the Jesús Usón Minimally Invasive Surgery Centre, Cáceres, Spain

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