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ENACT KA3 – Multilateral Project

**Enhancing Negotiation skills through on-line Assessment of Competencies and interactive
mobile Training**

Lifelong Learning Programme 2013

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D5.4

ENACT software user manual

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Enact Game

ASSESSMENT AND TRAINING FOR NEGOTIATION SKILLS

User Manual

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2. Introduction

The ENACT game is a serious game designed to train and assess negotiation and communication skills through the interaction with 3D artificial agents. The game simulates a dialogue between two humans and tries to reproduce the negotiation processes found in many everyday life situations, taking into account many aspects of human communication. A great deal of emphasis is put on behavioural characteristics such as the act of speech and some elements of body language. For example, the 3D artificial agents are able to perform a range of basic non-verbal indicators, such as facial expressions, eye contact, body postures and gestures. Verbal communication also plays an important role and is modulated through different indicators such as the structure of the sentence and the vocal tone. All these aspects will be explained in the following sections after a quick introduction on how to access the game and its technical requirements.

3. How to get into the Game

Enact is a browser game and therefore to play it you just need to open a common browser (with some limitations, see below for details) and go to the Enact Game website (enactgame.eu). It requires the installation of the Unity plug-in, which is a rather straightforward procedure. The following section describes the technical requirements and procedure needed to play.

Technical requirements and browser support

The Enact game can be played only on devices with the following characteristics:

- 1) Windows (XP SP2+or above) or Mac (OS X 10.8+) operating systems (Android and iOS operating systems are not supported)
- 2) Browser supporting Unity plugin (Internet Explorer, Safari, Firefox)
- 3) Not too old Graphics card (everything made since 2004 should work)

It is important to notice that, starting from September 2015, the Enact Game **can't be played with the Google Chrome browser** since it doesn't support anymore a particular type of plugin technology.

Accessing the game and installing the Unity Plugin

As already said, the game can be accessed online at the following address:
enactgame.eu

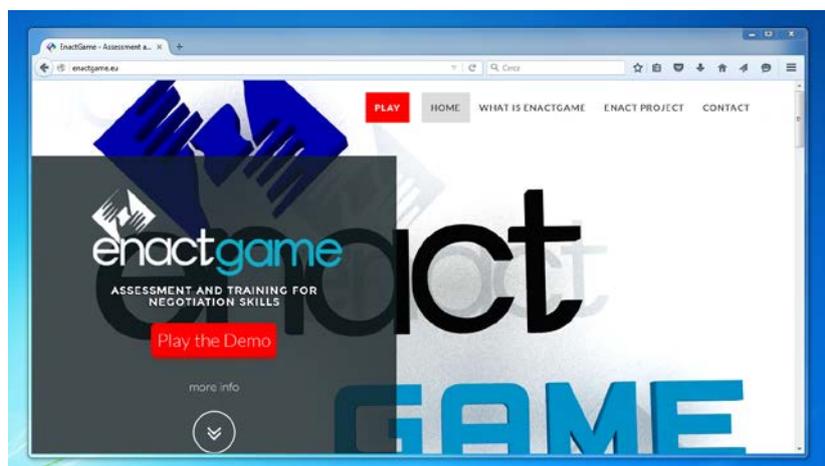


Fig.1 – Enact Game website

As you can see in fig.1, there are two red buttons in the main page that allow you to play the game. The “Play the Demo” button on the lower left side is a link to the demo version of the game, which is a quick way of getting an idea of what Enact game is and how it works. The “Play” button on top of the page is the first item of the website menu and allows you to access the full version of the game. The following description will refer to this latter choice.

Once you click on the play button, you will be redirected to a web page that contains the game window. As you can see in fig. 2, this is a rectangular region of the page of the size of 960x600 pixels.

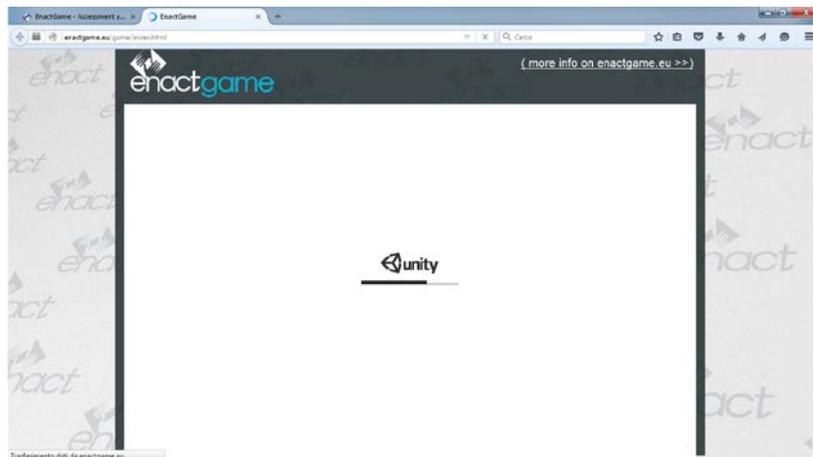


Fig. 2 – The game page and the game window showing the loading bar

If the Unity plugin is already installed you should see a loading bar with the Unity logo above and, when the loading is complete, you will be ready to play.

If the unity plugin is not installed you should see an install button in the middle of the game window like the one shown in fig. 3. Click on the button and follow the instructions to complete the plugin installation. After that, you should see the loading bar as explained before.



Fig. 3 – Unity Install Button

4. Playing the Enact Game

After the loading process described in the previous section is complete, you should see the login page shown in fig. 4. If you already have an account just fill the username and password fields and press the login button.



Fig. 4 – The login page

If you want to create new account click on the “Sign up” button. You will be presented with the registration form shown in fig. 5. Fill all the entries and press the “sign up” button. If everything went well, you should see a confirmation message and you should get the main menu (Fig. 6). Creating a new account is useful to personalise the game according to individual parameters like gender and nationality. There are game scenarios available in 4 languages – English, Italian, Turkish and Spanish – including different situations and roles for the user.

If you don't have an account and don't want to create one, you can just enter as a guest by checking the “Play as guest” box and then pressing the log in button.

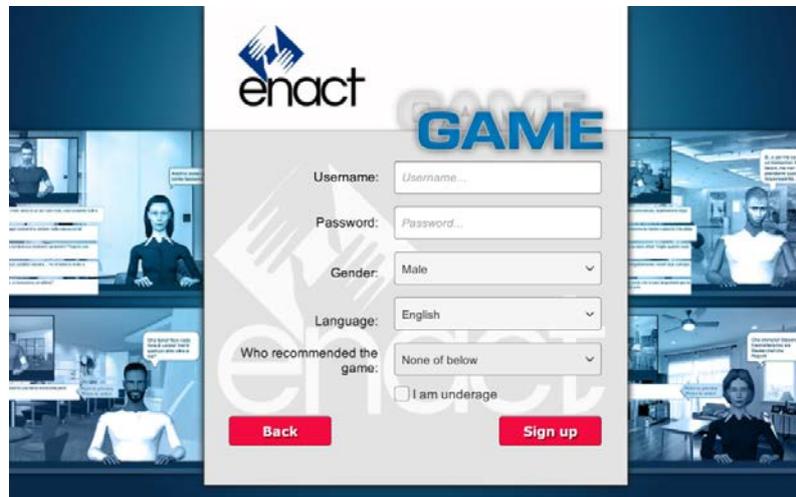


Fig. 5 – Sign up form

After logging into the game, you are presented with three main choices. You can choose to take an Assessment, a Guided Training or an Unguided Training session. These are the option of the **main menu** (see fig. 6). The red “Logout” button in the main screen is used to quit the game and go back to the login screen. In this case, the assessment or training session will be saved and will continue at the next login.



Fig. 6 – Main menu

Game Scenarios

The Enact game provides several independent scenarios inspired by everyday life situations, where the user can play a different character and negotiate with various artificial agents represented by 3D avatars. The number and sequence of scenarios to be played depends on the initial choice of the user. The assessment, for example, consists in a series of 5 predefined scenarios that are designed to assess the user negotiation skills. In the Unguided Training, instead, the user is free to choose which scenario to play.



Fig. 7 – Scenario introduction

Each scenario starts with a brief introduction of the situation in which the negotiation takes place. On top of the screen there is the title of the scenario and just below it, in the centre of the screen, there is a brief text explaining the negotiation context. It is worth noting that even scenarios with the same title are not identical, but can vary in the contextual information described in the introduction. On the left side of the screen there is a representation of the user avatar with his name and a description of the character role and goal within the given scenario (see fig. 7). On the right side there are the same information about the artificial agent. The player and the artificial agent can have the same or opposite gender, so the interactions can be male-male (or female-female) and male-female (or female-male). Moreover, for registered users the player character has always the same gender specified in the registration form and the artificial agent gender can vary according to it, depending on the given scenario. In a scenario about a husband-wife discussion, for example, if the player is male he will interpret the husband and the artificial agent will be the wife. In case of scenarios requiring the same gender for both characters, they both will

be set accordingly to the user's gender. The avatars are designed to represent different age ranges and physical traits to reproduce different ethnic characteristics. Clicking on the Next button will show some additional information about the scenario (fig. 8), such as the time available and the importance of the negotiation for the two agents.



Fig. 8 – Additional information about the scenario

The time for the negotiation ranges from 1 to 5 and it is represented as a series of hourglasses, some of which are lightened up indicating the time value. The “importance for you” and “importance for other” values are indicated as a series of stars ranging from 1 to 5 and describe how much the player and the artificial agent are concerned about the negotiation. In this screen it is also summarized the subject of the negotiation and the different personal goals of the player and the artificial agent.

Pressing the Next button in the second introduction sheet will start the game. The first screen shows the avatar of the artificial agent on the right side and a small window at the top left corner with the player's avatar. At the top of the screen there is a Start button that starts the actual negotiation process. On the top right of the screen there is a blue button that allows the user to read the introduction again.



Fig. 9 – First screen of the game

The negotiation starts with a sentence by the artificial agent (fig.10), which is followed by a single answer option appearing on the left side of the screen. This first option also shows a blue hint bubble on the right side describing how to preview and select answers. Going with the mouse over a sentence box, will make the avatar window on the top left become bigger and the facial expression and gesture associated with that particular answer will be previewed. Clicking on the sentence will confirm the choice and proceed with a series of user-agent interactions. Starting from the second interaction, the user can choose among 5 different sentences, each of which is correlated to a gesture and/or facial expression, which shows the way the sentence will be told to the artificial agent, as explained before.



Fig. 10 – Starting the negotiation

After the player's answer, it is the turn of the artificial agent to answer according to the embedded psychological model and the specific characteristics associated to it within the scenario. That is, for example, a dominating agent will show predominantly aggressive and authoritative behaviours. Conversely, an obliging artificial agent will show an overall passive and submissive attitude towards the negotiation. The game continues with a series of user-agent interactions, with alternating speech turns between the parties.

Verbal and non-verbal indicators

As mentioned in the introduction, the Enact game has been designed to include both verbal and non-verbal indicators in the communication process between the user and the artificial agent. Verbal indicators are embedded in the structure and meaning of each sentence, both in the artificial agent bubble speech and in the five sentence options available to the player at each negotiation step. Some additional verbal indicators are conveyed through the speech sounds associated with each sentence. Indeed, the speaking animation of both the player and artificial agent avatars is associated with a Gibberish sound that is used to convey the prosodic features of a particular sentence. Moreover, the speech bubbles of the artificial agent have different colours and shapes to represent different vocal tones. Each sentence is also associated with some non-verbal indicators conveyed through the avatar's facial expressions and body gestures.

End of scenario and debriefing

After a number of interactions, the artificial agent says one last sentence and a “Next” arrow button appears in the lower right of the screen. Pressing this button brings the final negotiation screen shown in fig. 11. Based on the previous interactions, the player is asked to describe his negotiation strategy as if the scenario continued, choosing among five alternatives.



Fig. 11 – Final negotiation screen

This final choice is a good chance to settle in the negotiation style. Anyway, the final result also depends on the previous moves.

After the final choice is taken, the scenario ends and what comes afterwards depends on the session type (assessment, training).

Assessment

One of the most innovative aspects of the game is the possibility to perform an assessment of the user negotiation skills. This is done with an innovative methodology and with a rigorous psychometric approach at the same time. The innovative aspect consists in the fact that the procedure is equivalent to a professional assessment conducted with traditional methods, but instead of using traditional “pen and pencil” methods, the user has to play a game.

The assessment is available as the first option in the main menu and it begins with a brief introductory sheet as shown in fig. 12. Pressing the Start button makes the actual assessment procedure begin.

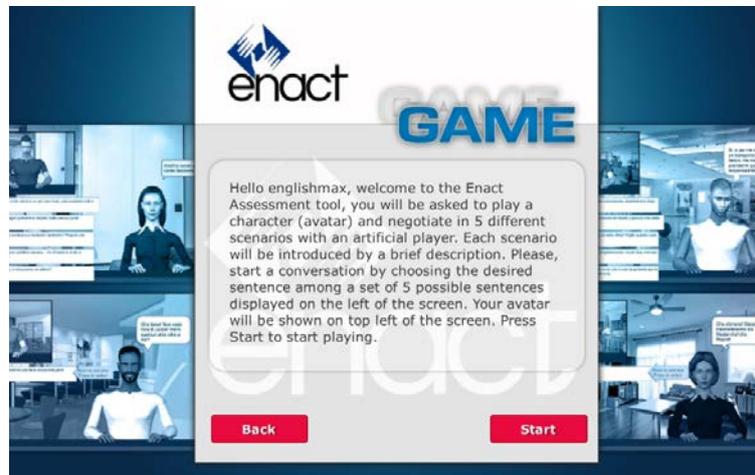


Fig. 12 – Assessment introduction

The player will be presented with a series of 5 negotiation scenarios that must be played one after the other without interruption. There is no right or wrong answer and there isn't any feedback at the end of each scenario since the main purpose at this stage is to make an assessment. There are three parameters according to which the 5 scenarios were designed. The first is the negotiation style adopted by the artificial agent, which can be Integrating, Dominating, Obliging, Avoiding or Compromising. This way the player has the opportunity to be exposed to all the main negotiation styles provided by the Rahim theory. The second parameter is the gender of the two parties that can be the same (male-male or female-female negotiation) or opposite (male-female). The third parameter is the subject of the negotiation that could be a decision about two different possibilities (divergence) or a single object, which must be exclusively assigned to one of the two characters (convergence). For controlling the effect of possible cultural influences caused by avatar appearances, avatars are represented as female or male within the 20-40 years age range and of various ethnic groups, such as, European, Asian, African and Arabic. As already said, the user does not receive any feedback between scenarios, but at the end of the full assessment section there is a final debriefing sheet describing the negotiation styles used in the five scenarios and a brief comment (see fig. 13).

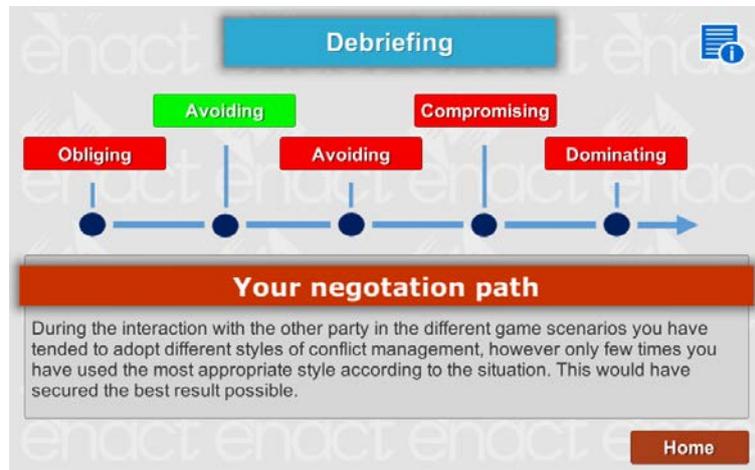


Fig. 13 – Assessment final debriefing

The score and profile of the player’s negotiation skills are calculated by an Artificial Intelligence algorithm based on the Rahim Theory, which builds a user negotiation model using the communication indicators present in every sentence option. The results of the assessment phase is used by the supervised training module (option 2 of the main menu) to build training strategy tailored to the specific development areas of the user which creates an effective learner-centred environment, where the user can focus on the areas that mostly require improvements.

Training

Training within the game is implemented in two main forms: guided training and unguided training. The main difference between the two is that the guided training is based on the psychometric profile of the user.

Unlike the assessment in the training modality, users are provided with feedbacks at the end of each scenario. In particular, as shown in fig. 14, a debriefing screen is shown with some information concerning the game session. First of all, the player negotiation style is classified according to the categories defined by Rahim theory: Avoiding, Dominating, Obliging, Compromising, and Integrating. It is possible to have more information about these categories pressing the blue button on the upper right corner of the screen. The results of the player actions are then described explaining how the situation was affected by his negotiation style and if the negotiation goal was reached or not. Finally, the negotiation style is also analysed with respect to its appropriateness in the specific context played.



Fig.14 – Debriefing screen

The Next button brings the second debriefing sheet as illustrated in fig. 15. This is a more specific analysis of the negotiation process occurred during the game, which is depicted as a sort of timeline showing the preferred conflict management style at each negotiation interaction.



Fig. 15 – The negotiation path

At the end of a game session the player can go back to the main menu pressing the Home button or play the session again pressing the “Play again” button. These options can be different in the guided training in which instead of the “Play again” button there is a “Play next scenario” option.

Guided Training

The guided training is implemented as a form of automatic tutoring based on artificial intelligent techniques. During the assessment phase the system collects the data about the user's behaviour and choices and creates a model of the player that will then be used in the guided training to generate tailored information during the training session. In particular, thanks to a selection of scenarios from the assessment phase, the user is guided through the recognition and self-reflection of various negotiation styles and accompanying behaviours, and this will help the user to recognise situations and people's behaviours, as well as contextualise the negotiation in different realistic situations.

Unguided training

The unguided training, as the term suggests, is a less structured form of training. As you can see from fig. 16, choosing the Unguided Training option in the main menu will show an option panel in which the user can choose the scenario to play without any constraint or suggestion. After playing the scenario, the user receives some feedback on that specific scenario and has the possibility to play again or choose another scenario.

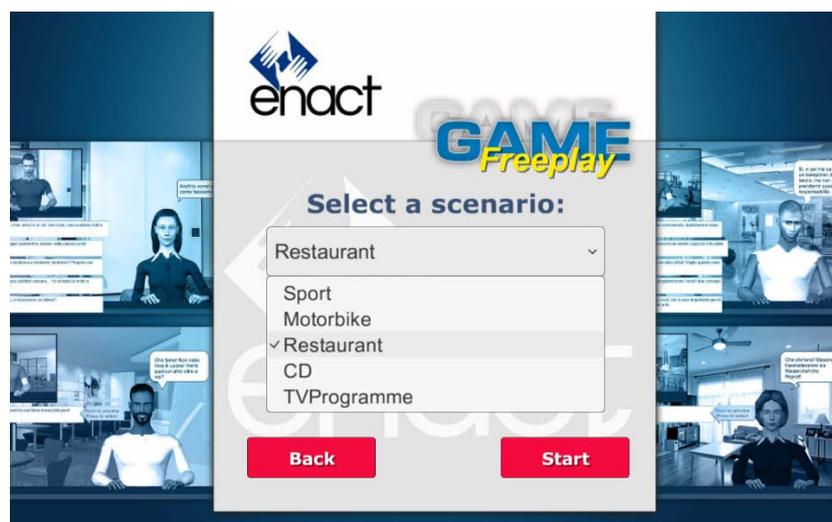


Fig. 16 – Choosing scenario in the Unguided Training mode