Realising an Applied Gaming Eco-system

Research and Innovation Action

Grant agreement no.: 644187

D5.5 – First Version Scenario Arrangement Document – round 1

RAGE – WP5 – D5.5

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## Document Version Control

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## Document Change Commentator or Author

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<td>Ana Romano</td>
<td>EPJ/MJ</td>
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<td>Carla Falua</td>
<td>EPJ/MJ</td>
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<td>RG</td>
<td>Raquel Guerra</td>
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<tr>
<td>MVK</td>
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EXECUTIVE SUMMARY

This deliverable outlines the implementation plan for each of the first-round studies of the RAGE pilots. The main goal of these pilots is to perform a small-scale test of the RAGE games with end-users and intermediary stakeholders in five different non-leisure domains to guide the further development of the games for the final validation studies. At the same time the pilots implement the pre-testing of the research instruments and methodology for answering the main evaluation questions in the five areas of investigation identified in D8.1: 1) usability, 2) game experience, 3) learning effectiveness, 4) transfer effect and 5) pedagogical costs and benefits.

Finally, the pilots are aimed at collecting preliminary results for a first formative evaluation of the games and game technologies, with the goal of feeding back useful information to development for the final versions of games and assets. The results of the first pilot will be compared with the results of the final evaluation studies to demonstrate improvements of the game and game effects from first to final version.

The arrangement document reflects the coordination and exchange between three type of players: the application scenario partners (WP5), which represent the local intermediary organizations, the game developers (WP4) and the responsible WP8 partners associated to each application scenario.

Each section of this document provides in detail the experiment arrangements for each use case, based on a common structure agreed with the WP8 and reported in Section1.

A revision of the deliverable will be done in the next few months to produce the final arrangement document (D5.1, due to at M21).
1 INTRODUCTION

This document describes the implementation plan of the first round studies of the pilots within the RAGE project. In this round the first prototype versions of the applied games (AG) are used by the WP5 participants, and will provide qualitative data for further improvement of the final games.

The first pilot will be an opportunity to test the evaluation instruments as well. The first pilot studies will give the evaluation team (from WP8) and the implementation team a chance to work together before full implementation to diagnose and solve any issues that might arise with the implementation of the methodology and the collection of the evaluation data. First results on formative evaluation of the games will also collected.

More precisely, the experiment is aimed at testing the overall methodology and providing initial input for answering the main evaluation questions defined in D8.1 (chapter 6) related to the applied game educational effectiveness. They cover five dimensions:

1. **Usability**: Are end users able to interact easily with the applied game?
2. **Game experience**: How do end users experience the use of the applied game?
3. **Learning effectiveness**: Do the applied game effectively support learning?
4. **Transfer effect**: Do the applied game support transfer of acquired knowledge/skills to the performance context?
5. **Pedagogical costs and benefits**: What are the benefits and what are the costs/disadvantages of applying the applied game for training?

In addition, player characteristics (i.e. person variables) that might have a systematic influence on the evaluation dimensions addressed in evaluation will be taken into account. The comparison between the results of the first experiment with those of the second one could provide evidence of the evolution and improvement of the game in terms of all the above-mentioned dimensions/questions.

In the following table are reported some specific example questions that may be addressed for each dimension.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Questions</th>
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<tbody>
<tr>
<td><strong>Person variables</strong></td>
<td>- Which are the player characteristics? gender, age, background knowledge...&lt;br&gt;- Which is the player familiarity with serious games and expectations for the applied game?</td>
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<tr>
<td><strong>Usability</strong></td>
<td>- Are the game instructions comprehensible?&lt;br&gt;- Which are the user reactions to wordings, screen layout, contextualization, flow of game progression?&lt;br&gt;- Which are the user feedback about the game concept, narrative, characters, overall presentation, easiness to learn to use the game and to read, clearness of objectives.&lt;br&gt;- Is the player able to achieve the goals?&lt;br&gt;- Are there any ambiguities or have the respondents any difficulty in move forward or responding?&lt;br&gt;- How long does it take to complete the game? Is this time reasonable?&lt;br&gt;- How intuitive and easy to use is the</td>
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</tbody>
</table>
| Game Experience | • Which are the emotions and feelings of the user toward the game before and during the interaction?  
• Which are the levels of motivation, engagement and immersion while playing the game?  
• Is the player motivated to play the game until the last level (retention and abandons)? |
|-----------------|-------------------------------------------------|
| Learning effectiveness | • Are the assessment methodology and instruments (both internal and external to the game) effective to measure the acquisition of the investigated skills?  
• Does the AG support the acquisition of the proposed skills?  
• Are the learning objectives addressed?  
• Are the results of the summative assessment in line with the participant's self-assessment? |
| Transfer effect | • Which is the feasibility of implementing strategies to monitor the knowledge transfer after the game experience (for example creating a continuity with internship experiences monitoring process)?  
• Do users show improved skills in a real-world context (e.g. internship)? |
| Pedagogical costs and benefits | • Which are the practical implications of integrating the AG into a larger blended training strategy, that uses traditional practical group working as a major part? In particular the training provider needs to:  
  o Understand how the AG can be integrated into existing education framework, based on the learning objectives, duration, need of organization, financial and human resources.  
  o Define the requirements for the implementation of a communication strategy for promoting the game and related costs.  
  o Understanding if and how to introduce incentives for participation.  
  o Understand the need of allocating human resources to the related activities (tutoring, facilitator support, technical support..) and the costs for training them.  
  o Evaluate the need of physical spaces for organizing kick-off events or follow-up sessions.  
  o Define guidelines to help educators to incorporate the game in practice in |
such a way as to ensure a smooth continuum from theory/planning to deployment and evaluation.

- Test the skills and readiness of the tutors and technical staff to manage technical and non-technical problems or faults.

<table>
<thead>
<tr>
<th>Table 1: Pilots evaluation questions</th>
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<td>such a way as to ensure a smooth continuum from theory/planning to deployment and evaluation.</td>
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<tr>
<td>- Test the skills and readiness of the tutors and technical staff to manage technical and non-technical problems or faults.</td>
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</table>
2 STRUCTURE OF THE DOCUMENT

Each pilot study is described based on the following list of questions/points, which has been defined by the WP5 partners in coordination with the WP8 team as a guide to structure the description of the arrangement process.

1. TRAINING CONTEXT
   - Which are the questions that the institution/training provider would like to answer based on the results of the pilot study: e.g. expectations about benefits for the organisation and possible elements for the further implementation and refinement of the game.
   - Learning/performance context in which the use case is embedded e.g. characterising the educational institution/training provider, type of education/training.

2. TARGET AUDIENCE
   - Characteristics (e.g. age, gender, language, professional skills, background, period of life)
   - Prerequisites (e.g. previous participations to education experiences, courses, language)
   - Number: is the number of participants to the first round out of the total number of participants of the pilot study
   - Subgroups: explain the value and scope of the subdivision in subgroups (if any)

3. MEASURES FOR LEARNING AND TRANSFER
   - What kind of assessment do you perform in terms of satisfaction, learning and transfer in the training/course, which could be relevant for the analysis in the evaluation?
   - Which instruments resources and measures do you use for such assessment?
   - Are these measures available also from previous or parallel courses to be used as benchmark data for comparison?

4. RECRUITMENT MODALITY
   - How will it be organized: communication/promotion, instruments, modalities (sampling) and information provided to the participants
   - Who will manage it (coordination and execution)
   - Involved institutions (e.g. one or more faculties, organization branches…)
   - Temporal aspects: when the recruitment will be organized

5. WHEN
   - Step succession in the training plan: at which point will be the applied games used and the evaluation data collected?
   - Period (from…to..): is there already a schedule or rough time plan when the games are going to be applied (of course in alignment with the timing and availability of the games)?
   - Constraints: are there any restrictions in terms of the time available for gathering evaluation data? (e.g. holiday period, availability of human or other resources)

6. WHERE
- Location
- Type of physical spaces (e.g. rooms, labs with certain endowment)

7. RESOURCES AND PRE-REQUISITES
   - Required/available human resources: how many, expertise…
   - Hardware
   - Software
   - Security requirements
   - Privacy
   - Authentication
   - Other

8. SUPPORT
   - Technical
   - Service level agreement
   - Other

9. RISK MANAGEMENT

Identification of risks, which could affect the execution of the first round of the pilot study and determining the likelihood, the impact and the mitigation measures for each identified risk.

<table>
<thead>
<tr>
<th>Description of Risk</th>
<th>Likelihood (low/medium/high)</th>
<th>Impact (low/medium/high)</th>
<th>Proposed risk-mitigation measures</th>
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3 USE CASE 1: PROFESSIONAL COMMUNICATION SKILLS
TRAINING IN VOCATIONAL EDUCATION – SPL/PLAYGEN

This section describes the implementation plan for testing the three games developed by PlayGen for the SPL pilot: Space Modules Inc; Ditto and IT Alert.

The games are targeted to train students in the Netherland vocational education on professional communication skills.

The games have been developed and implemented by PlayGen which use and test the RAGE assets to cover the learning objectives defined by Stichting Praktijkleren (the case owner, SPL). These learning objectives are based on qualification profiles that are drawn by commissions with representatives from both the work field and the educational field.

5 pilot schools will be involved in the first round pilot involving in total 500 students.

<table>
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<th>TRAINING CONTEXT</th>
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<tr>
<td><strong>Training provider/institution questions</strong></td>
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</table>

| **Learning/performance context** | For the testing of the games, 5 pilot schools have been contacted and been informed of the RAGE project from the beginning. In this first phase, the games will be played by 100 students of each school (for each of three games 30-35 students will be selected). |

<table>
<thead>
<tr>
<th>TARGET AUDIENCE</th>
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<tr>
<td><strong>Characteristics</strong></td>
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</table>

| **Prerequisites** | The language of the game is Dutch, therefore participants should have a sufficient linguistic competence in Dutch to read instructions and game materials and interact with Dutch players and NPCs. Other specific background skills are not expected of participants. No prerequisite knowledge on soft skills is required for game participation. |

<table>
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<th><strong>Number</strong></th>
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<tbody>
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<td>- Roc van Twente, location Hengelo-Almelo</td>
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<tr>
<td>- Koning Willem 1 College in ’s-Hertogenbosch</td>
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<tr>
<td>- Roc van Amsterdam in Amsterdam</td>
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<td>- Roc Aventus in Apeldoorn</td>
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</table>
In the first pilot study we will involve around 100 students from each partner, recruited from the educational trainings ICT manager and from Networking and Media manager:

- Students from the first year will play Space Modules Inc and Ditto
- Students from the second year will play IT Alert!

### Subgroups

In the first experiment we do not plan of using subgroups of subjects to be assigned to different experimental conditions. The pilot schools form natural subgroups of participants; however each school will use all games, with groups of students selected for each of the games.

The experiment will be conducted in sessions including max 25 participants at a time.

### MEASURES FOR LEARNING AND TRANSFER

**Assessment type**

In the first evaluation round we will test all 3 games that are being developed for the training of the communication skills within this case. Some parts of the evaluation process are the same, but as the learning goals between the games differ, so do the ways of measuring the students’ progress.

For all 3 games we will have a pre/post-test to measure the learning effect of each game. For this a validated test set from Leal-Costa et al. (2016) and Schwartzman et al. (2011) will be used as the starting point. These tests have been developed for the medical field, so some adaptation will be needed. Also, relevant parts of the Interpersonal Communication Skills Questionnaire (ICSQ; Bubaš, 1995) will be added for this test.

In-game measurements and questionnaires will also be used as measures of learning performance/progress.

In this first round, the measuring of transfer will be restricted to the first game: Space Modules Inc.

**Instruments resources and measures**

### Space Modules Inc.

The following measurements and evaluations are used with this game:

1. The above mentioned pre-test, tailored to the learning goals of this game. It will focus on:
   1.1. Opening and ending a conversation
   1.2. Dealing with emotions
   1.3. Summarize and follow-up questions
2. Player performance within the game:
   2.1. Choosing the correct response type (%)
   2.2. The quality of the etiquette
   2.3. The quality of helpfulness
3. In-game questionnaires about what was hard, easy, annoying
4. The corresponding post-test to measure the learning effects of this game.

For the measuring of transfer, the students will be presented with different situations (video) and their response is also recorded as video. This will be done with the group that has played the game and a control group that hasn’t played the game (but similar in background knowledge and experience). These videos are then assessed with a team of experts to determine the quality of the responses.

### Ditto

The following measurements and evaluations are used with this game:
1. The above mentioned pre-test, tailored to the learning goals of this game:
   1.1. Ability to give instructions
   1.2. Ability to receive instructions
2. Player performance:
   2.1. The game score, which directly correlates with good communication skills
   2.2. Time taken to complete a level compared to global average
   2.3. Number of levels completed compared to global average
3. In game questionnaires about own performance and about the other player
4. The corresponding post-test to measure the learning effects of this game.

**IT Alert!**
The following measurements and evaluations are used with this game:
1. The above mentioned pre-test, tailored to the learning goals of this game
   1.1. Ability to work in a team, sharing limited resources
   1.2. Emotional awareness of other players
   1.3. To transmit relevant information with clarity, and listen to other’s input
   1.4. Coordinate team members across tasks efficiently
   1.5. Remaining calm under pressure, providing solutions to reduce stress intensity
2. Player performance within the game:
   2.1. Scoring/performance for keeping the network up and running
   2.2. Involvement: how many actions have been done
   2.3. Best survival time vs global average
   2.4. Measurement of Communication, time each player talks
   2.5. Number of threats neutralised
3. In game questionnaires about team members: who contributed the most, who was the leader, etc.
4. The corresponding post-test to measure the learning effects of this game.

**Measures available from previous courses**
The current courses on soft skills organized by the vocational schools do not integrate assessment measures about user satisfaction, learning and transfer. Therefore, evaluation data are not available from previous courses for comparative analysis.

**RECRUITMENT MODALITY**

| **Organization** | For the first experiment we will recruit students from year 1 and 2. Totally approximately 500 students will participate, over the 5 education partners. Therefore, the communication and promotion will be very focused and organized mainly in collaboration with the Managers and teachers of the courses, which will integrate the promotion of the experiment within a communication campaign. |
| **Who** | The whole pilot will be coordinated by Stichting Praktijkleren who is also responsible for the measurements (pre-test and post-test to identify ‘learning gains’). |
| **Involved institutions** | Stichting Praktijkleren, 5 pilot schools |
| **Temporal aspects** | In July 2016 we will contact the 5 education schools to remember them that in January 2017 the pilots will take place. |
October/November 2016 the communication and recruitment from the courses has to begin.

**WHEN**

**Step succession in the training plan**
All pilots will begin in January 2017 after the Christmas holidays. The students will be informed before the Christmas holidays. There will be a statement per student for the approval of the use of his/her data for measuring results. At the time the pilots are ready to start the measuring instruments will be ready at the same time.

**Period**
Approximately, the experiment will be conducted during the first semester of the 2016-2017 Academic Year.

**Constraints**
The first experiment will be conducted during the lecture-period of the first semester excluding the Christmas holiday period. Teachers and students should be available in that time frame.

**WHERE**

**Location**
Vocational education schools from Amsterdam – Rotterdam – Apeldoorn – Hengelo and ’s-Hertogenbosch.

**Physical spaces**
The experiment will be conducted in the classrooms of the five above mentioned schools. In these class rooms the games will be played on PCs and/or mobile devices.

**RESOURCES AND PRE-REQUISITES**

**Human Resources**
- Tutor/trainer for introducing the study, providing support during the game, questionnaire administration
- Technical staff for support

**Hardware**
Space Modules Inc. and Ditto will be played on mobile devices, so students should bring their own mobile phone and headset during the experiment. IT Alert! Will be played on PC’s and requires networked computers with headsets for voice communication.

**Software**
The game prototype will be available online through the website of Stichting Praktijkeren. It will provide links to the web-based games and/or links to the correct application in the application store for the mobile devices (Android and iOS).

**Security requirements**
The students log in with their regular account on the website of Stichting Praktijkeren. Through here, they can access the games.

**Privacy**
The protection of subject's personal data and privacy is ensured in accordance with the Wet Bescherming Persoonsgegevens law of the Netherlands (Wpb 2001). The subject participates willingly in the study and he/she is free to withdraw from the study at any time and without any consequences. The participant is required to sign the informed consent, which informs him/her about his or her rights, the purpose of the study, the procedures involved in the study, risks and benefits to take part in the study, the duration of the study and the responsible for the research and contacts. Anonymous data will be collected and processed.

**Other**

**SUPPORT**

**Technical**
Software is either web-based or provided as an application to be installed on the mobile device (smart phone). It is accessed/available through the website of Stichting Praktijkeren, for which each student has an account. The first line support will be provided by the helpdesk of Stichting Praktijkeren. Any issues that pop up which weren’t tackled during the test phase will be passed to PlayGen and/or the owner of the asset where the issue occurred.

**Service level agreement**

**Other**

**RISK MANAGEMENT**
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<tbody>
<tr>
<td>Technical issues and flaws</td>
<td>High</td>
<td>High</td>
<td>Internal test (pre-test) before the real experiment in the same conditions. Test on location where the experiments will take place.</td>
</tr>
<tr>
<td>Instructions and tasks not clear</td>
<td>Low</td>
<td>Low</td>
<td>Tutor intervention for clarification</td>
</tr>
<tr>
<td>Personnel not prepared to provide support</td>
<td>Low</td>
<td>Low</td>
<td>Previous training of involved personnel, based on the internal pre-test results</td>
</tr>
<tr>
<td>Lack of participation</td>
<td>Low</td>
<td>High</td>
<td>Students are normally required to participate in the lessons. As these experiments are as much as possible integrated in the standard courses, participation is expected to be high.</td>
</tr>
<tr>
<td>Abandons</td>
<td>Low</td>
<td>High</td>
<td>Students will get marks for completing the games.</td>
</tr>
<tr>
<td>The duration of the learning experience is not manageable (completion time can be different for different users)</td>
<td>Low</td>
<td>Medium</td>
<td>Precise instructions and indications about timing for each activity.</td>
</tr>
<tr>
<td>Fragmentation of the learning experience due to the simplified and incomplete structure of the prototype</td>
<td>Low</td>
<td>High</td>
<td>The post game sessions with the teacher will help integrate the different experiences. Clear guides for the teacher will be provided.</td>
</tr>
</tbody>
</table>

Table 2: SPL scenario arrangements
4 USE CASE 2: DIGITAL SKILLS IN UK COLLEGES – HCG/NUROGAMES

This section provides an outline of the “first round” prototype test in which selected participants will test an early version of the game currently being developed by Nurogames, “Water-Cooler”.

This first experiment is conceived as a small-scale version and trial run in preparation for the second full-scale experiment. Focus groups and questionnaires at the end of the trial will provide qualitative data for further improvement of the final game.

“Water Cooler” was proposed in order to address non-central curriculum issues\(^1\) such as student attitudes and values regarding group working, conflict mitigation and professional behaviours, whilst developing project work on a Games Design course, including but not limited to:

- Objectivity over subjectivity
- Inter-personal skills
- Leadership skills
- Acceptance of ambiguity as a reality of professional working practice
- Critical self-reflection skills
- A personal (and effective) working/design process
- Conflict management

This will include prototype interfaces, graphics and several early version interactive elements including the main dialogue interface (Asset T3.3F) of the game that (via one of the chosen assets) looks at the player’s ability to mitigate complex workplace/group project issues, through dialogue with (in this case NPC) colleagues.

Questions asked of participants based upon research questions appropriate to this topic are derived through consultation between WP8 and WP5 partners, together with further questions agreed with the institution/training provider that might add to the discussion and subsequent additional development of the games (see the Training provider/institution questions in table below).

This first round of testing will enable formative evaluation of the games and game technologies. It will also allow WP8’s evaluation team to test evaluation tools/questions, etc., and to discuss any issues related to the questions, evaluation validity, tone, practical organisation or accommodation with the use case scenario (WP5) team; as well as to develop some level of understanding of the veracity of the tool in teaching and learning related to group working/conflict mitigation.

<table>
<thead>
<tr>
<th>TRAINING CONTEXT</th>
</tr>
</thead>
</table>
| Training provider/institution questions |• Has there been progress against the objectives of the game – evidence of improved attitude to group working via the game play itself and from pre/post game evaluation?  
• Whether the students feel the game has been a valuable learning tool?  
• Does the student feel there is an aspect of “return-ability” to the game?  
• Is there flexibility of content management? (the capacity of the |

\(^1\) i.e. implicit learning relating to group work/professional practice (which is not directly assessed as part of the delivered module) that effects assessable project outcomes.
| **Learning/performanc**e context | The prototype will be tested against two possible institutional needs (see ANNEX 1), which were established at the commencement of the RAGE project.  
- Long Play - Full time degree level students (BA HONS courses) and full time 16-18 further education students (BTEC Level 3 course) both groups, whose individual skill/disciple specific courses have no explicit module to teach group-working skills but still need to develop these skills in order to access higher learning goals of subject specific modules that involve collaborative working.  
- Short Play – mature students on short vocational programmes relating to employability skills. |
| **TARGET AUDIENCE** |  
**Characteristics** | Mixed age groups (post 16), non-gender specific, mixed race, mixed skills/background/period of life/returning to education etc. |
| **Prerequisites** | All English language users (though English as a Second Language students may be part of the cohorts), all courses would require the “Game” to be delivered in English. This is demographically similar to the target audience of the finished game. |
| **Number** | The number of participants to be exposed to this first round test out of the total number of participants of the pilot study (300) would be approximately fifty. |
| **Subgroups** | This number would be further subdivided into two further groups:  
- 30 “long play” version (inc’ selected students from current Games Design cohort – this allows for existing studio² to be used),  
- 20 “short play” version (see above) |
| **MEASURES FOR LEARNING AND TRANSFER** | The assessments of existing modules into which this new learning tool would fit, i.e. those which require development of team working skills, have learning outcomes relating to effective professional practices (in light of the focus project). In the long play version the game is to be a precursor to the module, the wider module itself will be assessed some time after the game has been utilised. However, in order that the success of the game can be measured Learning Outcomes have been developed for the game itself.  
- LO1 - Explore and gain understanding of own current values/value structure relating to group working practice.  
- LO2 - Reflect on findings with respect to effective team working/interpersonal interaction strategies.  
- LO3 - Refine own interaction methodology in order to inform future professional working practice. |
| **Resources and measures** | Within the game, measures have been implemented that allow answers given by participants/students to be categorised against the Thomas/Kilmann Conflict Mode Instrument, with a final outcome being determined by the frequency or mean average of answers given in a preferred behaviour. This allows tutors working with students to discuss behaviours with the individual student based on a report of game outcomes and behaviours.  
For the long play version final assessment is measured against selected learning outcomes of the modules which are focus on the  
² This space is used to IT upheavals to allow for beta-testing of software or other IT related scenarios and so would be the most logical to accommodate this test.
## Measures available from previous courses

Wider module comparative measures are available from previous courses and can be used as benchmark data for comparison. It was the collation and analysis of this assessment data (small scale, based on previous year group’s assessment outcomes for the wider modules, as mentioned above) for previous years modules that ultimately provided this particular case study.

Outcomes over previous years had provided data that showed a recurring “double bell curve” in the outcomes of students studying this module, effectively dividing the group into those willing to apply objectivity to their placing the projects needs at the centre of the work (and subsequent study evidence), and those who retired from effective group working in favour of subjective and personal agenda satisfaction over that of the wider groups effectiveness.

The hope is that this single player game will allow individuals to test their openness to the required values and attitudes relating to objective group working, prior to the final long term “live working” project that they are assessed against. Those that are flagged as not meeting these requirements along the way during the Long Play scenario (and to some extent students in the Short Play scenario too) will have the opportunity to discuss outcomes and ways forward with staff, using this digital game in combination with traditional 1 to 1 teaching (as recommended by the recent April 2016, Gates/SRI International report on Adaptive Courseware) to provide a “reinforced” learning experience.

http://hechingerreport.org/even-high-end-education-software-gets-mixed-results-improved-learning/


For the purposes of this test round questionnaires (e.g. Teamwork Competency Test – TWCT by Aguado et al., 2014) decided upon in conjunction with WP8 team and focus groups will be used to evaluate the outcome of the game (both modes).

### RECRUITMENT MODALITY

**Organization**

Coordination of testing will be administered by specific HCG academic staff team members who have knowledge of the wider project, with local admin as support.

Internal promotion of the participatory testing project and the wider RAGE project will be coordinated and managed prior to testing by relevant academic staff, disseminated to programme leaders of those courses and departments who have agreed to participate.

External, public/industry facing promotion, joining local marketing value to the wider RAGE project promotion potential will be developed by HCG Marketing in conjunction with coordinating academic staff and existing RAGE marketing strategies.

Admin will collate results of testing supported by academic staff and relayed to WP8 liaison (Bolton) in a pre-agreed form. Information will be provided to the participants both in documentation form (printed for students to take away) prior to test participation, and immediately prior and during game testing via Game Intro dialogue and any connecting test management interfaces (as per current processes such as NSS etc.).

**Who**

Internal HCG coordination will be dealt with by HCG academic colleagues within the New Media department, who will liaise with programme leaders of selected participant courses.
**Involved institutions**

All participant programmes are part of HCG delivery, whether full time Degree students, FE programme students or short vocational course participants.

**Temporal aspects**

The recruitment will end by end September.

**WHEN**

**Step succession in the training plan**

For the majority of student participants to be available for testing, term/semester timetables will need to be acknowledged/adhered to. Liaison with WP8 (via UOB) is currently underway in order to meet the recruitment needs of the given schedule provided in the ongoing project documentation, i.e. September 2016.

**Period**

The experiment will be run during the first semester of the 2016/2017 academic year (Sept through to the following January, excluding any student holidays (Christmas for example), but carrying over reading weeks where possible).

**Constraints**

For the majority of student participants to be available for testing, term/semester timetables will need to be acknowledged/adhered to.

**WHERE**

**Location**

The experiment will take place within the facilities of the HCG campus, Queens Gardens sites, Hull, including multiple appropriate Lab/studio environments.

**Physical spaces**

Labs/studios with PC based infrastructure appropriate to the delivery of software/games interface to medium to large student groups would be the typical physical space.

**RESOURCES AND PRE-REQUISITES**

**Human Resources**

In order to smoothly facilitate this first round experiment we would require:

- The existing core content development team (inc. Sarah Humphreys, Anna Kirk-Smith, and Gareth Sleightholme, plus content writer Dave Windass)
- Academic staff coordinators for management and monitoring of testing phases, and collation of data/liaison with local WP5 staff and WP8 (Bolton).
- Local HCG Admin support staff for implementation and communication between participating depts.

**Hardware**

- Existing PCs/studio spaces in participating depts.
- i-Pad for formative observations by staff monitoring the testing process.

**Software**

The games themselves, as provided by development teams (WP4), in alignment with interoperability agreements.

**Security requirements**

As per existing local data protection and BERA agreements. Selected student participants would be given required logins or able to use their current student logins to access the machines that house the software/games product to be tested.

**Privacy**

As per existing local data protection and BERA agreements (attach document).

**Other**

**SUPPORT**

**Technical**

Installation + help desk + technical issues management from Local HCG IT Dept. Supervising Staff member.

**Service level agreement**

Local HCG IT Dept agreement/policy outline, with caveats that allow for testing data to be allowed to be utilised offsite (to be balanced with any overarching RAGE project agreement/document requiring permissions to utilise/scrutinise data from testing).

**Other**

**RISK MANAGEMENT**

<table>
<thead>
<tr>
<th>Description of Risk</th>
<th>Likelihood (low/medium/high)</th>
<th>Impact (low/medium/high)</th>
<th>Proposed risk-mitigation measures</th>
</tr>
</thead>
</table>

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WP5-D5.5

RAGE

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| Issues with student availability | low | high | Have reserve groups organised  
|                                 |     |     | Ensure term time testing  
| IT issues including interoperability | medium | high | Engage developers and HCG IT dept in the management of the test phase  
|                                 |     |     | Have trial runs prior to testing with actual groups  
| Issue with support | Low | Low | Previous training of involved personnel, based on the internal pre-test results  
| Instructions and tasks not clear | Low | Low | Tutor intervention for clarification  
| Abandons | Low | High | Introducing incentives for motivating participants to complete the trial  
| Lack of motivation to take part in evaluation activities | Medium | High | Explaining the value of the evaluation  
| The duration of the learning experience is not manageable (completion time can be different for different users) | Low | Medium | Precise instructions and indications about timing for each activity.  
| Fragmentation of the learning experience due to the incomplete nature of the prototype | High | High | Creating connections to enable the user to have a more fluent experience.  

Table 3: HCG (digital skills) game arrangements
5 USE CASE 3: ENTREPRENEURIAL SKILLS FOR FINAL YEAR STUDENTS, RECENT GRADUATES AND THE UNEMPLOYED – HCG/GAMEWARE

This section provides an outline of the “first round” prototype test in which selected participants will test an early version of the Entrepreneurial game “Hatch” currently being developed by Gameware.

“Hatch” was proposed in order to evaluate and enhance Creative Industries focused entrepreneurial skills across a range of students who are about to embark on creative careers following graduation, or for those interested in developing creative industries relevant entrepreneurial skills.

Through a series of mini-games or chapters within the larger game that use (where possible) a live, causal feedback interface, the game will identify key skills and knowledge areas required to develop a comprehensive business plan appropriate to a particular creative market sector model or start-up enterprise.

This first experiment is conceived as a small-scale version and trial run in preparation for the second full-scale experiment. It will include prototype interfaces, graphics and several early version interactive elements. Focus groups and questionnaires at the end of the trial will provide qualitative data for further improvement of the final game.

This first round of testing will enable formative evaluation of the games and game technologies. It will also allow WP8’s evaluation team to test evaluation tools/questions etc, and to discuss any issues related to the questions, evaluation validity, tone, practical organisation or accommodation with the use case scenario (WP5) team; as well as to develop some level of understanding of the veracity of the tool in teaching and learning related to development of entrepreneurial skills.

The prototype will be tested against two possible institutional needs (see ANNEX 1) which were established at the commencement of the RAGE project.

Stakeholders have been consulted throughout on their needs and requirements, the learning objectives of the game, a suitable process for validating and evaluating pilot objectives, and the context and constraints within which the trial will take place.

<table>
<thead>
<tr>
<th>TRAINING CONTEXT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Training provider/institution questions</strong></td>
</tr>
<tr>
<td>• Has there been progress against the objectives of the game?</td>
</tr>
<tr>
<td>• Whether the students feel the game has been a valuable learning tool?</td>
</tr>
<tr>
<td>• Does the student feel there is an aspect of “return-ability” to the game?</td>
</tr>
<tr>
<td>• Is there flexibility of content management? (the capacity of the game content (dialogue) to be input/adapted by teaching staff in order that the scale and challenge of the game will be allowed to grow, or be adapted to meet local needs)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning/performance context</th>
</tr>
</thead>
<tbody>
<tr>
<td>The prototype will be tested against two possible institutional needs which were established at the commencement of the RAGE project (see ANNEX 1). Stakeholders have been consulted throughout on their needs and requirements, the learning objectives of the game, a suitable process for validating and evaluating pilot objectives, and the</td>
</tr>
</tbody>
</table>
context and constraints within which the trial will take place. The two modes for the prototype, each relevant to stakeholders within Hull College Group, are as follows:

- **Long Play** - Full time degree level students (BA HONS courses), full time 16-18 further education students (BTEC Level 3 course) on creative courses together with alumni.
- **Short Play** – mature students on short vocational programmes relating to employability and entrepreneurial skills.

**TARGET AUDIENCE**

**Characteristics**
The pilot study audience across both of these two modes will include:
Mixed age groups (post 16), non-gender specific, mixed race, mixed skills/background/period of life/returning to education etc.

**Prerequisites**
All English language users (though English as a Second Language students may be part of the cohorts), all courses would require the “Game” to be delivered in English. This is demographically similar to the target audience of the finished game.

**Number**
The number of participants to be exposed to this first round test out of the total number of participants of the pilot study (500) would be approximately fifty.

**Subgroups**
This number would be further subdivided into two further groups:
- 30 “long play” version (inc. selected students from current Fine Art cohort),
- 20 “short play” version (see above)

**MEASURES FOR LEARNING AND TRANSFER**

**Assessment type**
The game as part of a wider curriculum of study (much of which is focused on a separate core area of study) will help bring about a situation where our students will be able to:

- Assess the core values of the creative business and enterprise mission
- Write and implement business plans
- Be self-motivated and driven
- Understand legal business structures and employment law
- Understand liabilities and insurance issues appropriate to the situation
- Produce and manage contracts with clients, studios, galleries etc
- Produce a personal brand description and statements
- Curate exhibition spaces and selling spaces (trade fairs)
- Use the web for networking and promotion
- Find and apply for appropriate funds for projects – grants, sponsorship, loans etc.
- Project manage ‘public arts projects’ and workshop delivery
- Source, identify and research relevant information and inspiration
- Explore and develop ideas and have a willingness to learn
- Select, refine and present ideas appropriately and professionally
- Protect ideas and the ideas of other including copyright and intellectual property rights
- Communicate ideas to a range of industry sectors (construction, local authority, students etc)
- Understand their different client requirements
- Match ideas with appropriate techniques, materials, tools and equipment
- Have technical ability with the chosen medium and equipment
- Be able to price work and time appropriately and in an informed manner
- Document ideas and work (photographically and literarily)
- Seek, assess and apply feedback, and adapt ideas where necessary
- Liaise with the media and issue press releases
- Market the product/brand/self assertively
- Manage databases
- Evaluate projects and outcomes
- Understand the opportunities and diversity of practice within the sector
- Understand and use accounting systems, cash flow and HMRC requirements
- Know where to look to develop new markets and spot new opportunities

Regardless of whether the game is played during a short (single day session) or played over a longer period the player will:
- Play or try out multiple sessions in the mini games
- Examine own “scores” or progress by accessing the gameplay data (here the option to do this with a tutor to help interpret the data would blend this with the next phase i.e. …)
- Develop an action plan based on the conclusions drawn from the data the game highlighted to the player.
- Go back to try again to apply the knowledge gained through the combination of successes/failures/ and subsequent reflection in the ongoing game.

**Instruments resources and measures**

For the purposes of this test round questionnaires (e.g. Entrepreneurial Intention Questionnaire – Linan et al., 2011) decided upon in conjunction with WP8 and focus groups will be used to evaluate the outcome of the mini games (both modes).

**Measures available from previous courses**

No

**RECRUITMENT MODALITY**

**Organization**

Coordination of testing will be administered by specific HCG academic staff team members who have knowledge of the wider project, with local admin as support.

Internal promotion of the participatory testing project and the wider RAGE project will be coordinated and managed prior to testing by relevant academic staff, disseminated to programme leaders of those courses and departments who have agreed to participate.

External, public/industry facing promotion, joining local marketing value to the wider RAGE project promotion potential will be developed by HCG Marketing in conjunction with coordinating academic staff and existing RAGE marketing strategies. Admin will collate results of testing supported by academic staff and relayed to WP8 liaison (Bolton) in a pre-agreed form. Information will be provided to the participants both in documentation form (printed for students to take away) prior to test participation, and immediately prior and during game testing via Game Intro dialogue and any connecting test management interfaces (as per current processes such as NSS etc.).

**Who**

Internal HCG coordination will be dealt with by HCG academic colleagues within the New Media department, who will liaise with programme leaders of selected participant courses.
Involved institutions
All participant programmes are part of HCG delivery, whether full time Degree students, FE programme students or short vocational course participants.

Temporal aspects
The recruitment will end by end September.

WHEN

Step succession in the training plan
For the majority of student participants to be available for testing, term/semester timetables will need to be acknowledged/adhered to.
Liaison with WP8 (via UOB) is currently underway in order to meet the recruitment needs of the given schedule provided in the ongoing project documentation, i.e. September 2016.

Period
The experiment will be run during the first semester of the 2016/2017 academic year (Sept through to the following January).

Constraints
Excluding any student holidays (Christmas for example), but carrying over reading weeks where possible

WHERE

Location
The experiment will take place within the facilities of the HCG campus, Queens Gardens sites, Hull, including multiple appropriate Lab/studio environments.

Physical spaces
Labs/studios with PC based infrastructure appropriate to the delivery of software/games interface to medium to large student groups would be the typical physical space.

RESOURCES AND PRE-REQUISITES

Human Resources
In order to smoothly facilitate this first round experiment we would require:
- The existing core content development team (inc. Sarah Humphreys, Anna Kirk-Smith, and Gareth Sleightholme, plus content writer Dave Windass).
- Academic staff coordinators for management and monitoring of testing phases, and collation of data/liaison with local WP5 staff and WP8 (Bolton).
- Local HCG Admin support staff for implementation and communication between participating depts.

Hardware
- Existing PCs/studio spaces in participating depts.
- i-Pad for formative observations by staff monitoring the testing process.

Software
The games themselves, as provided by development teams (WP4), in alignment with interoperability agreements.

Security requirements
As per existing local HCG data protection and IT usage agreements.

Privacy
As per existing local data protection and BERA agreements
Selected student participants would be given required logins or able to use their current student logins to access the machines that house the software/games product to be tested.

Other

SUPPORT

Technical
Installation + help desk + technical issues management from Local HCG IT Dept. Supervising Staff member.

Service level agreement
Local HCG IT Dept. agreement/policy outline, with caveats that allow for testing data to be allowed to be utilised offsite (to be balanced with any overarching RAGE project agreement/document requiring permissions to utilise/scrutinise data from testing).

RISK MANAGEMENT

<table>
<thead>
<tr>
<th>Description of Risk</th>
<th>Likelihood (low/medium/high)</th>
<th>Impact (low/medium/high)</th>
<th>Proposed risk-mitigation</th>
</tr>
</thead>
</table>

WP5-D5.5
RAGE
Page 26 of 47
| Issues with student availability | low | high | Have reserve groups organised  
Ensure term time testing  
| IT issues including interoperability | medium | high | Engage developers and HCG IT dept. in the management of the test phase  
Have trial runs prior to testing with actual groups  
| Issue with support | Low | Low | Previous training of involved personnel, based on the internal pre-test results  
| Instructions and tasks not clear | Low | Low | Tutor intervention for clarification  
| Abandons | Low | High | Introducing incentives for motivating participants to complete the trial  
| Lack of motivation to take part in evaluation activities | Medium | High | Explaining the value of the evaluation  
| The duration of the learning experience is not manageable (completion time can be different for different users) | Low | Medium | Precise instructions and indications about timing for each activity.  
| Fragmentation of the learning experience due to the incomplete nature of the prototype | High | High | Creating connections to enable the user to have a more fluent experience.  

Table 4: HCG scenario (entrepreneurial skills) arrangements
6 USE CASE 4: SOFT SKILLS IN SPORTS FOR EMPLOYABILITY – OKKAM/PLAYGEN

This section describes the implementation plan of the first round experiment of the pilot on soft skills in sports for employability (Task 5.5). This first experiment is conceived as a small-scale version and trial run in preparation for the second full-scale experiment.

Participants in the experiment will play a prototype game developed by PlayGen including the Sports Team Manager game (described in details in D4.2) followed by an in-depth branching scenario focusing on one of the practised skills: conflict management. In this way the entire game flow and difficulty levels will be tested for one of the trained skills. Focus groups at the end of the game will provide qualitative data for further improvement of the final game.

The first pilot will be an opportunity to test the evaluation instruments as well. The first experiment will give the evaluation team (from WP8) and the implementation team a chance to work together before full implementation to diagnose and solve any issues that might arise with the implementation of the methodology and the collection of the evaluation data.

<table>
<thead>
<tr>
<th>TRAINING CONTEXT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Training provider/institution questions</strong></td>
<td><strong>APPLICABILITY</strong>: Evaluating the appropriateness of the game design for the specific training context and target audience. <strong>LEARNING EFFECTIVENESS</strong>: Assessing the learning effectiveness of the AG as a tool for training some of the soft skills for employability, which represent the focus of the Placement Service training program on such topic. <strong>ORGANIZATIONAL IMPACT</strong>: Identifying the impact of incorporating the AG into the existing education programme on soft skills organized by the Placement service and understanding at which level to embed the game within such programme (as an introductory activity to guide the student in choosing the existing offer, as a module fully integrated into existing training programs). <strong>EXPECTED ROLE OF THE TEACHER/TUTOR</strong>: Understanding the role of the teacher/tutor to set the gaming experience into a sound overall educational experience. This means that the teacher need to configure the game to plan specific learning activities, verify their effectiveness, create connections with other activities, being involved in debriefing. The training provider needs to know if the game is flexible enough to support the tutor in doing that and consequently to be successfully incorporated and used by educators. <strong>LOGISTICS AND PRACTICAL IMPLICATIONS</strong>: Evaluating which are the practical implications of integrating the AG into a larger blended training strategy on skills for employability, that uses traditional practical group working as a major part. <strong>USER ACCEPTANCE AND SATISFACTION</strong>: Determining the student interest and satisfaction when using the AG compared to more traditional in-class approaches and collecting feedback for improvements. <strong>POSSIBLE BARRIERS</strong>: Identifying possible barriers of adoption both from the student and from the trainers’ side. For example, technical or temporal barriers (duration), problems of interaction with other players in multi-player sessions.</td>
</tr>
<tr>
<td><strong>Learning/performance context</strong></td>
<td>The pilot study will be conducted in the context of the training program on employability skills organized by the career division</td>
</tr>
</tbody>
</table>
TARGET AUDIENCE

Characteristics
In the first pilot study we will involve around 30 master students recruited from different master courses of the University of Trento (aged 22-26 yrs). The experiment sample will be demographically similar to the target population of the final game which is represented by master students and graduate students (from all the University of Trento faculties and departments) near to enter their professional career.
Specific background skills are not expected of participants (only language requisites described in the next paragraph need to be met).

Prerequisites
The previous participation to university courses or soft skills training programs is not a prerequisite for participation in the pilot study. However, the previous participation to soft skills training programmes could represent an added-value element for collecting comparative feedback.
On the other hand, since the serious game will be in Italian, all the participants are expected to understand and speak Italian.
Motivation of the student to participate will be considered a priority for participation.

Number
Following Backer (1994) that found that a sample size of 10-20% of the sample size of the major study is a reasonable number of participants to consider enrolling in a first round pilot, we plan to enrol around 30-35 students for the first pilot experiment and 350 for the second.

Subgroups
In the first experiment we do not plan of using subgroups of subjects to be assigned to different experimental conditions. The experiment will be conducted in sessions including max 15 participants at a time.

MEASURES FOR LEARNING AND TRANSFER

Assessment type
In the first evaluation round we aim to test the entire learning path on one of the investigated soft skills that is conflict management. This means that the learning experience will include 3 steps. 1) An initial game phase corresponding to the sport management game which is described in D4.2, followed by 2) a learning pill on the meaning of conflict and identification on different types of conflict and finally, 3) a branching scenario on conflict management styles. Therefore, beside a general self-assessment questionnaire on soft skills (conflict management, team working and leadership), we propose to use a specific self-assessment instrument on conflict management styles. Finally, at the conclusion of the game phase, the results from the game will be compared and discussed with those of the self-assessment questionnaire in focus groups. We will include both summative (at the end of the learning process to test the learning achievements) and formative assessment (presented through the entire learning process to continuously monitor progress and failures and adapt the game difficulty).

More specifically, we envision the following evaluation process in the first testing round:

1. Self-assessment questionnaire on the three main investigated skills: team working, conflict management and leadership (21 questions on 3 skills). The questionnaire will include items from:
<table>
<thead>
<tr>
<th>Instruments resources and measures</th>
<th>For the pilot evaluation existing instruments for assessing soft skills will be adopted.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Employability Skills Questionnaire</strong> (SESQ; Sunday, 2013): is used to assess self-perceived employability competences and evaluating the potential for obtaining and succeeding in a job. Only the questions related to the skills investigated in the game will be used (in particular team working).</td>
<td><strong>Thomas/Kilmann Conflict Mode Instrument</strong> (Thomas, 1974; Thomas &amp; Kilman, 1974): is a self-report assessment tool designed to measure a person's behaviour in conflict situations along two basic dimensions: 1) assertiveness: the extent to which the individual attempts to satisfy his or her own concerns; 2) cooperativeness: the extent to which the individual attempts to satisfy the other person's concerns. The two dimensions are used to define five conflict-handling modes: competing, collaborating, compromising, avoiding, and accommodating. The profile of the subject indicates the repertoire of conflict-handling modes he/she uses in the kind of conflicts he/she faces.</td>
</tr>
<tr>
<td><strong>Hershey and Blanchard Leadership style questionnaire</strong></td>
<td></td>
</tr>
</tbody>
</table>
(Leader Effectiveness and Adaptability Description Instrument, LEAD; Hershey & Blanchard, 1977): the instrument is designed to provide insight about how the respondent behaves as a leader, especially with respect to three aspects of leader behaviour: 1) style; 2) style range and 3) style adaptability. For each of 20 situations the respondent has to select one of four alternative actions. Each of the alternatives reflects one of four combinations of task and relationship behaviour, which are the two dimensions of the underlying model of the situational leadership theory.

**Measures available from previous courses**
The current courses on soft skills organized by the Placement service do not integrate assessment measures about user satisfaction, learning and transfer. Students are asked to fill a general appreciation questionnaire at the end of the course, but no formal evaluation on the trained soft skills is taken. Therefore, evaluation data are not available from previous courses for comparative analysis.

**RECRUITMENT MODALITY**

**Organization**
For the first experiment we will recruit students from master courses of the University of Trento and though the communication and contact channel of the Placement service. Therefore, the communication and promotion will be very focused and organized mainly in collaboration with professors of the courses and the Placement Service which will integrate the promotion of the experiment within the communication campaigns for its usual offer on soft skills.

**Who**
We will take contacts with the Professor to organize communication and recruitment from the master courses, while a direct recruitment will be organized by the Placement Service as integral part of the communication activities related to the soft skills offer.

**Involved institutions**
The first experiment will involve the faculties/departments of the University of Trento from which the students will be recruited and the Placement Service of University of Trento.

**Temporal aspects**
The recruitment will end by the end of September

**Step succession in the training plan**
The first experiment will not be included in any programs on soft skills organized by the Placement Service, but will be promoted together with them. Therefore, there is no straight connection between the activities included in the current training plan and the execution of the experiment.

**Period**
Approximately, the experiment will be conducted during the first semester of the 2016-2017 Academic Year.

**Constraints**
The first experiment will be conducted during the lecture-period of the first semester excluding the Christmas holiday period.

**Location**
The experiment will be conducted within the facilities of the University of Trento.

**Physical spaces**
The experiment will be conducted in laboratories of the University of Trento made available by the Placement service. The Lab choice is justified by the need of taking the focus groups immediately at the end of the game play phase, which will be played individually on personal mobile devices of the participants. The introduction to the game, part of the assessment process and the follow-up (the completion of self-assessment questionnaires, focus group) will require to organize face-to-face sessions with teachers/tutors.
RESOURCES AND PRE-REQUISITES

**Human Resources**
- Tutors/trainers for introducing the study, providing support during the game, questionnaire administration
- Technical staff for support
- For the focus group at least one moderator (it could be the tutor) and one observer.

**Hardware**
The game will be played on mobile devices. Therefore, the participants should bring their personal mobile phone and the headset during the experiment.

**Software**
The game prototype will be available online and it needs to be installed on the device used for the experiment.

**Security requirements**
University of Trento credentials are used to download and install to the game.

**Privacy**
The protection of subject’s personal data and privacy is ensured in accordance with the principles of the Italian Data Protection Code (Legislative Decree no. 196 of 30 June 2003) and the Code of Conduct and Professional Practice applying to processing of personal data for statistical and scientific purposes. The subject participates willingly in the study and he is free to withdraw from the study at any time and without any consequences. The participant is required to sign the informed consent, which informs him/her about his or her rights, the purpose of the study, the procedures involved in the study, risks and benefits to take part in the study, the duration of the study and the responsible for the research and contacts. Anonymous data will be collected and processed.

**Other**

**SUPPORT**

**Technical**
Installation + help desk + technical issues management

**Service level agreement**

**Other**

**RISK MANAGEMENT**

<table>
<thead>
<tr>
<th>Description of Risk</th>
<th>Likelihood (low/medium/high)</th>
<th>Impact (low/medium/high)</th>
<th>Proposed risk-mitigation measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical issues and flaws</td>
<td>High</td>
<td>High</td>
<td>Internal test (pre-test) before the real experiment in the same conditions. Game storage on Unitn server and technical support available for rapid intervention and mobile assistance.</td>
</tr>
<tr>
<td>Instructions and tasks not clear</td>
<td>Low</td>
<td>Low</td>
<td>Tutor intervention for clarification</td>
</tr>
<tr>
<td>Personnel not prepared to provide support</td>
<td>Low</td>
<td>Low</td>
<td>Previous training of involved personnel, based on the internal pre-test results</td>
</tr>
<tr>
<td>Lack of participation</td>
<td>High</td>
<td>High</td>
<td>- Multiple channels for recruitment. - Presence of tutor during recruitment for answering</td>
</tr>
</tbody>
</table>

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specific questions and objectives clarifications.
- Shortening the interval between the recruitment moment and the experiment execution.
- Time compatible and non-overlapping with that of courses.

<table>
<thead>
<tr>
<th>Abandons</th>
<th>Low</th>
<th>High</th>
<th>Introducing incentives for motivating participants to complete the experiment (e.g. support for writing CV).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of motivation to take part in focus groups activities</td>
<td>Medium</td>
<td>High</td>
<td>Explaining the value of the focus group and expected interaction modalities.</td>
</tr>
<tr>
<td>The duration of the learning experience is not manageable (completion time can be different for different users)</td>
<td>Low</td>
<td>Medium</td>
<td>Precise instructions and indications about timing for each activity.</td>
</tr>
<tr>
<td>Fragmentation of the learning experience due to the simplified and incomplete structure of the prototype</td>
<td>High</td>
<td>High</td>
<td>Creating connections between the different steps of the game to help the user to have a more fluent experience.</td>
</tr>
<tr>
<td>The games are not available in time</td>
<td>High</td>
<td>High</td>
<td>Testing modules of the game separately.</td>
</tr>
</tbody>
</table>

Table 5: OKKAM scenario arrangements
7 USE CASE 5: POLICE INTERVIEW SKILLS – EPJ/MJ/GAMEWARE

The main goal of ISPO game (interview simulation for police officers) is to train police officers in communication competencies related with the interview of victims of violent crimes (e.g. sexual crimes) and the interrogation of violent offenders (e.g. sexual crimes offenders) through the use of a simulation scenario. The focus of the game is the communication process bearing in mind the verbal and nonverbal communication competencies of the police to gathering information from victims and offenders.

The design of the game includes several different levels with an increasing level of difficulty regarding the training of communicational competencies and two different scenarios (victims and offenders). The specifications for the development of the game have been worked upon with the game developers from GAMEWARE. In this context a set of questions and answers within a scope of gradation was prepared in order to help creating a gaming simulation tool for criminal interrogation.

<table>
<thead>
<tr>
<th>TRAINING CONTEXT</th>
</tr>
</thead>
</table>
| **Training provider/institution questions** | The game “Interview Skills for Police Officers” (ISPO) represents an innovative tool to improve good practices in police work, as it takes into consideration the set of police competencies in the application of technical procedures as victims’ interviews and offenders’ interrogation contexts (e.g. Masip & Garrido, 2004):
| | • Social Skills (ability to resolve social problems)
| | • Emotional Control (calm, patient)
| | • Flexibility, mental agility, imagination
| | • Law knowledge
| | • Effective verbal communication
| | • Persuasion
| | • Ability to listen
| | • Interrogation planning
| | • Organizational commitment
| | • Team Work
| The general main objective of the game is to improve the training of appropriate communication skills by the police officers for gathering information from:
| | a) Victims of a violent crime as rape and violent assault;
| | b) Offenders or suspects who may have committed a violent crime.
| The acquisition of these communication skills in a virtual context allows the prevention of re-victimization situations by the police officers in victim’s interview contexts and a more successful relationship with the offenders or suspects bearing in mind not the confession process but the gathering information for taking decisions during the criminal investigation process and have access to information that allows the police get to the truth.
| The use of a gaming tool facilitates the application of different methods and techniques of the game provides a simulation atmosphere that can be used in a comprehensive way.
| There are several communication techniques based on communications skills that can be measured and scored. These skills include some or all of the following:
| • **Active Listening**
| | o Availability to Listen
| | o Understanding
Learning/performance context

The game can be used in two different contexts bearing in mind the training of police officers. In a first phase, when the intern police student makes the first level of training to be integrated into the police as a professional. At a context of greater specialization, when the police officer integrates a criminal investigation brigade related with violent crimes (e.g. sexual offenses) and before attending the CSBP (VIOLENT AND SEXUAL OFFENCES-BEST PRACTICE IN POLICE WORK) program training. With the ISPO the police officer can acquire the basic communication skills needed for the training of interview and interrogation techniques.

The game envisages a simulated Interview/interrogation and takes place in a real-time schedule, i.e. over a 30 to 45-minute period each, similar to a real interview.

The game can be used in two different scenarios:
A. A less complex scenario (level 0 of complexity) related with “how to collect information from an eyewitness”. An eyewitness is a person who witnessed a crime and that by the request of the police describes what he saw. In this context the work of police must be based in a set of communication skills important to facilitate the description that the witness has to do. These communication skills are:

- **Active Listening**
  - Availability to Listen
  - Understanding
  - Being Respect Worthy
  - Non-threatening approach

- **Empathy – working with emotions**
  - Take the feelings you listen or felt and give them back to the suspect
  - Develop several mental emotion images

- **Relationship – Paraphrase**
  - Repeat what was said
  - Reformulate the words that you heard.

- **Relationship**
  - Understand the essence of what has been said and reformulate.
  - Use open questions.
  - Summarize: Reflect on the main ideas of the speech
  - Remember all the interview/interrogation steps emphasizing the positive aspects.
  - Silence management: Let the subject reflect about what was said correctly and reinforce it.
  - Encourage: While the victim or the interrogated person speaks show attention and agreement, verbally or non-verbally.
• Understand the essence of what has been said and reformulate.
• Use open questions.
• Summarize: Reflect on the main ideas of the speech
• Silence management: Let the subject reflect about what was said correctly and reinforce it.
• Encourage: While the victim or the interrogated person speaks show attention and agreement, verbally or non-verbally.

B. A more complex training context with two different scenarios: a) Victims of violent crimes as rape and violent assault; b) Offenders or suspects who may have committed a violent crime. Information from victims/offenders can be obtain using difficulty levels defined by the game. The difficulty levels are related to the use of more complex communication skills and strategies related with the techniques used for interview victims and interrogate offenders. The game ends if the interviewer uses inadequate communication skills. The police officer needs to repeat the game until he/she is able to use the correct communication skills.

At this more complex training context, the game provides conditions for the police officers to practice the:

1. **Cognitive Interview (CI)** (technique for gathering information from victims of violent crimes). This technique raises recovery of correct information in about 35 to 45%. Can be used with cooperating adults and children and takes into account the communication style of the interviewer/police officer, victim’s age and characteristics; type/context of the crime.
   The most important communicational skills are:
   - Empathy
   - Anxiety reduction (Information about the context)
   - Active listening
   - Open Question’s
   - Examine verbal and nonverbal behaviour
   - Interviewer is a guide in the communication process.

2. **PEACE** (interrogation technique use for gathering information from offenders). Create an environment of honesty, using clear points, persistence and patience, keep the interview in a problem-solution framework and work with the present as well as the Future.
   The most important communicational skills are:
   - Active listening
   - Empathy
   - Establish a rapport
   - Influence
   - To promote a behaviour change

The police officer collects effective information about the crime, using appropriate communication techniques.

The game ends if the police officer uses inadequate communication skills.

**TARGET AUDIENCE**
| Characteristics | Basic level: |  |
|------------------|-------------|  |
| Prerequisites    | Candidates to a criminal investigation police selected to do the initial training program: |  |
|                  | a) Characteristics: Candidates to be criminal investigation police officer. They came from a personnel selection process and need to have one year of training in the all areas of the criminal investigation police before start to work in the police departments. |  |
|                  | Approximate age range: 23-30 years old |  |
|                  | The language of the game is Portuguese. |  |
|                  | All the candidates had a graduation so no prerequisite knowledge is required for game participation. |  |
|                  | b) Needs and requirements: All the police officers from the Policia Judiciária need to know as to gathering information from a victim or an offender. The level 0 of the game “how to collect information from an eyewitness” is very useful to the practice of basic communicational skills. |  |

**Specialized level:**

Criminal investigation police officers integrated in special brigades working with violent crimes:

a) Characteristics: Criminal investigation police officers working in the violent crime brigades.
   Approximate age range: 30 years old or more
   The language of the game is Portuguese.
   Most of the candidates had a graduation so no prerequisite knowledge is required for game participation.

b) Needs and requirements: Police officers’ candidates to the CSBP training program.

**Number**

For the first round we foresee the participation of 50 police officers.

**Subgroups**

No

**MEASURES FOR LEARNING AND TRANSFER**

**Assessment type**

We deliver before and after questionnaires in order to know the improvement of competencies. The assessment is made in communication skills and is punctuated in accordance to the achievement of the defined goals.

**Instruments resources and measures**

The instrument used is based on the Police Interview Competency Inventory (PICI - De Fruyt, Bockstaele, Taris & Van Hiel 2006).

**Measures available from previous courses**

We can use the results as a tool for benchmarking in scientific research contexts and other training scenarios.

**RECRUITMENT MODALITY**

**Organization**

The recruitment of criminal police officers for the Judiciary Police is conducted by the Department of Human Resources and the initial training of the intern personnel applies to candidates approved in the recruitment process. As for the “recruitment” for the specialised training, the selection of trainees is made according to the brigades where the officers work.

**Who**

The personnel recruitment is organised by the Human Resources Department of the Judiciary Police and the selection phase on psychological aspects is carried out by the Judiciary Police School (EPJ). Specialised training on interview or interrogation skills in case of violent crimes is delivered for officers working in the corresponding brigades.

**Involved institutions**

Judiciary Police; Judiciary Police School
Temporal aspects

The personnel recruitment on course for the Judiciary Police is expected to be concluded by the end of the first semester of 2017.

WHEN

Step succession in the training plan

It is our intention to start testing the demo as soon as it is available, which we suppose will be until the end of 2016; afterwards when the game is in its first version for implementation we shall use the experiment during the 2017 in the initial training course for police officers planned to start this year. Depending on the possibilities of the game it may also be tested in continuous training sessions.

Period

Only after the conclusion of the DEMO from GAMEWARE will we be able to plan its implementation. This depends in the game possibilities, options and the use of communication skills and the assets that can be integrated in the game.

Constraints

WHERE

Location

The game is going to be used at the Judiciary Police School or in the Judiciary Police Departments.

Physical spaces

In training rooms or professional offices in the Judiciary Police

RESOURCES AND PRE-REQUISITES

Human Resources

The game is going to be operated by the trainers (both virtual and residential) and trainees.

Hardware

The simulation will run as a standard PC application on Windows OS 7 and above.

Software

According to GAMEWARE the simulation is written in C# ensuring compatibility with any software tools and engines provided as outputs from WP2 and WP3 and to sit within the RAGE ecosystem at the end of the project as specified by WP6.

Security requirements

At first stage only personnel from the Judiciary Police are allowed to use the game.

Privacy

All the results from the use of the game (tests, scores) are confidential and are safeguarded in the Police premises. They may be shared by trainers and trainees only.

Other

SUPPORT

Technical

The technical development of the game and the correspondent outcomes will be based on the rules described in the RAGE agreement. Further details shall be presented when we are acquainted with the functionalities of the game.

Service level agreement

Other

RISK MANAGEMENT

<table>
<thead>
<tr>
<th>Description of Risk</th>
<th>Likelihood (low/medium/high)</th>
<th>Impact (low/medium/high)</th>
<th>Proposed risk-mitigation measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>The language of the game must be in current Portuguese.</td>
<td>High</td>
<td>High</td>
<td>The game developers should use assets developed in Portuguese language.</td>
</tr>
<tr>
<td>Computer performances</td>
<td>Medium</td>
<td>Medium</td>
<td>Technical support from Game developers and from Judiciary Police.</td>
</tr>
<tr>
<td>Motivation to</td>
<td>Medium</td>
<td>Medium</td>
<td>Game</td>
</tr>
<tr>
<td>take part in the Game</td>
<td></td>
<td>presentation within the brigades and tutorial support.</td>
<td></td>
</tr>
</tbody>
</table>

**Table 6: EPJ/MJ scenario arrangements**
8 USE CASE 6: JOB SEARCH SKILLS FOR TEMPORARY WORKERS - RANDSTAD/BIP MEDIA

This section describes the implementation details of the pilot which aims to test the game developed by BIP Media for Randstad.
The pilot will involve between 30 to 50 job seekers from two France RANDSTAD branches.

<table>
<thead>
<tr>
<th>TRAINING CONTEXT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Training provider/institution questions</strong></td>
</tr>
<tr>
<td>The applied game that we are developing will include several exclusive assets, which will be very disruptive compare to standard serious games. This will use video and sounds to detect behaviour and emotions. This will be very close to reality and prepare the candidate for any kind of job interview. We decided to focus our game in one kind of qualification: business professionals. This population is one of most required on the French market, and in the same time, probably the candidates profile who are the more stressed during a job interview. Their job consists in being convincing, in front of one or several interlocutors, while being shooting… One of the game architecture consists in storing data coming from the candidate's CV or cover letter, it's quiz concerning his soft skills, professional skills… . Most of them are specific to business jobs. After the pilot study, we would like to expand the game to other job specifications: technicians, secretary… . This means that lots of characteristics, key words, level of stress during the interview would be adapted to those specifications. The language of the game is French, but everything will be done to extend it to other languages. That could be another opportunity to offer this game to our other countries where Randstad is present.</td>
</tr>
</tbody>
</table>

| **Learning/performance context** |
| Randstad plays a pivotal role in the world of work. By finding employees the work they are best suited for, and by finding employers those candidates who best fit within their organization, we provide value to society as a whole. Changing labour market trends, including an aging population, flexibilization, and resolving labour market shortages, means developing new solutions. By finding the right balance between the needs of the employer and the changing wishes of employees, we will bring supply and demand closer together. In short, our mission is to take the lead in shaping the world of work. Gamers who will play this game will improve their confidence approaching their search if they have done some thinking and preparation. It also helps to understand the job search as a process. Mastering this process is a very important step to develop skills in managing their own career. With this game, Randstad would like to reinforce its role as a key company in the HR market. The success of the game and |
THE IMPROVEMENT OF THE GAMER WILL HELP PEOPLE BE MORE IN PHASE WITH WHAT THEY ARE AND THE JOB THEY ARE MADE FOR. OUR CANDIDATES WILL FIND MORE QUICKLY A JOB, AND OUR CLIENTS WILL BE SATISFIED BY THE QUALITY OF THE CANDIDATES AND THE FACT THAT THEY FIT PERFECTLY WITH WHAT IS EXPECTED FROM THE EMPLOYER.

TARGET AUDIENCE

**Characteristics**

The game will be proposed for all job seekers, which just started their search or if they meet difficulties to find a new one. The game will be proposed for Randstad candidates, but also in any place where people wants to find help/advices on their job search.

The Applied Game has no age limitation; anybody could/should play if they are searching for a job.

- The gamers could be students just starting their search. They have no experience of any job search strategy, and moreover no experience for a job interview. The first part of the game could help them to define precisely what they expect to do (or not) and be aware of their strengths and the skills they have to put forward.
- The applied game is also interesting for all job seekers who have difficulties to find a job. This brings a good opportunity to review their strategy, methods, contents, and behaviour regarding the recruiters.
- People who wants to change jobs, spontaneously or with an outplacement program can find good examples of organisation, presentation and opportunities in the current market job.

- For this first try of the game implementation, we would like to focus on one sort of qualification: business function, salesmen. This is the main complex situation in terms of job searching. A salesman is necessary recorded in any kind of social network, his function requires to be sometimes in stressed situation, with destabilization processes….
- Other kind of function could be developed with less difficulties than this one, and could be appear in a second step.

**Prerequisites**

No prerequisite knowledge on anything is required for game participation.

The gamer can play with or without any document, like CV or cover letter. However, a part of the game is composed of a CV and cover analyses, and bring advices on their current documentation.

The game will be offered in French for the pilot period.

**Number**

Between 30 to 50 people, in one or two different location, and with different level of experiences.

Lots of tests will be made previously to be sure that assets are well doing their job, and to try the scenario in real state of using them.

**Subgroups**

No
| Assessment type | After each interview, the player will be provided with a feedback about the prevalent behaviour adopted during the meeting.  
For example, the feedback could include a description of the most relevant aspects of the adopted behaviour with explanation of the effect of certain behaviours versus to the recruiter.  
To facilitate the learning process, the player can repeat the scene. |
| Instruments resources and measures | Description of the results of the performances for each gamer.  
No comparison needed, but a feedback on his own performances and as a final result, a hiring, or not….  
Considering a pure assessment of the tool or for the skills/behaviour improvements, there is no specific asset integrated in the game. Randstad France integrated a new e learning platform with gamification principle. This tool is called “CloudNinjas”. After each short track, the user is invited to rate the course. Some commentaries are also possible to be added. Rating is possible from 1 to 5 for instance. That could be used for each step:  
- After CV advices  
- After Cover Letter advices  
- After the preparation for interview step  
- After each interview and the feedback done from the consultant to the candidate.  
For evaluating learning effects in a broader sense an instrument (decided upon in conjunction with WP8) for assessing job search self efficacy (i.e. perceived ability to perform the skills involved in seeking employment) will be used in the pilots (e.g. Career Self Efficacy Scale – Solberg et al., 1994; Job Seeking Self Efficacy Scale – Balrow et al., 2002) |
| Measures available from previous courses | No |
| RECRUITMENT MODALITY | |
| Organization | Randstad France is organised with 800 branches all over the territory. All of them are dedicated to the recruitment and organised to receive candidates with dedicated location. As we need a hardware for one of our asset, and considering the cost of this tool, we'll buy two of them. Thus we’ll choose two branches close to the headquarter, and install the hardware on the dedicated desk. People from the branches will be informed of the project, with presentation about the game, components….  
Each branch belongs a candidate database with in between 300 and 500 candidates. We will send an email to let them know about this opportunity. The branch will manage the planning for booking the slots, welcome candidates and assists them if needed. |
| Who | Olivier Lepoivre will manage and supervise the pilot. People from the 2 branches will be also involved. Those 2
branches are not chosen yet. That will be made from September.

**Temporal aspects**

As we will be independent and confident about the selection of candidates, the recruitment campaign will be launched as soon as the game will be ready and the hardware installed.

There is no specific time area comparing to the business needs in the Randstad team organisation.

**WHEN**

**Step succession in the training plan**

The game would be played at any time of the candidate path. Even if that makes more sense at the beginning of their job search. Learning things at the beginning could help them being well prepared and avoid losing opportunities. If the candidates already have passed some interviews, that could help them for key points in the interview preparation and their own behaviour.

When playing in the game, people could have a direct access to the interview modules, without passing through the other steps (CV, cover letter…), but some tracks in the interview will demonstrate them that they should be addressed.

**Period**

No period precisely determined. That could start as the game will be available.

**Constraints**

No constraints concerning any kind of time restrictions. The best is to avoid period between May to September, which are the high peak of activity for Randstad. But that could also match.

**WHERE**

**Location**

Randstad France has 600 branches in France. We will focus only on two of them for logistical reasons, and close to our head office in Saint Denis. The choice will be made later after explaining the project to some field managers.

**Physical spaces**

All our branches have some specific spaces for recruitment, with one to one places, computer with webcam and Internet access, phone…

**RESOURCES AND PRE-REQUISITES**

**Human Resources**

Involve people from the 2 branches selected. Each branch has around 4 or 5 people working in it.

We will announce the project, present it to them and explain what we need them to cooperate. We will focus more about people really in charge of recruitment, and make aware their manager.

**Hardware**

Available in our branches:
- Computer
- Webcam
- Internet connection

Need to buy (two or three minimum):
- Appraisal asset

**Software**

/

**Security requirements**

/

**Privacy**

Candidates will be already known in our systems and Randstad doesn’t want to deal in any case with any kind of data. We will strictly limit information to the minimum.

People from the branches will be limited to the results and the
debriefing needed. No administrator profile for them.

**SUPPORT**

**Technical Service level agreement**

We will benefit of the technical assistance of our internal support. 15 people assume the IT support for all Randstad colleagues. If any problem is encountered on the computer, internet connexion… they will fix it in a short time period.

For other kind of issue : assets, internal bugs in the game, we will check with RAGE partners who should do what.

<table>
<thead>
<tr>
<th>Description of Risk</th>
<th>Likelihood (low/medium/high)</th>
<th>Impact (low/medium/high)</th>
<th>Proposed risk-mitigation measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bandwidth. What are the prerequisites?</td>
<td>Low</td>
<td>High</td>
<td>Estimation from RAGE Partners</td>
</tr>
<tr>
<td>2. Computer performances</td>
<td>Medium</td>
<td>High</td>
<td>Estimation from RAGE Partners</td>
</tr>
</tbody>
</table>

Table 7: RANDSTAD scenario arrangements
9 CONCLUSIONS

This document summarizes the key implementation aspects of the first-round pilot studies for each use case of the RAGE project. Since in the next few months we expect a significant improvement in the development and finalization of game assets and game pilots, a final version of the implementation plan of the pilot studies will include additional details to complete the second deliverable, D5.1.

This will be realized through the constant alignment between the WP8 and the WP5 activities, through the mediation of the WP8 partners assigned to each use cases.
ANNEX 1

Figure 1: Long and Short Play Game Scenarios
REFERENCES


