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Annual Report 2

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1. Introduction

Gaming for Peace (GAP) was launched in September 2016. GAP is an EU H2020 Framework Programme for Research and Innovation project (no.700670) and the length of the project is 30 months. The main goal of GAP is to develop a curriculum in relevant 'soft skills' (including gender and cultural awareness and communication) for personnel from diverse organizations (military, police, civilian) working in the field of conflict prevention, peacebuilding and peacekeeping. This curriculum is embedded in a digital role-playing game. Assessment in-game is by behavioural metrics, and out-game by customized quizzes pre and post the digital role-playing game, with reflection at the end of the process. GAP fills a gap in training and offers an efficient and cost effective way of delivering transferable and standardized training in these skills.

A training gap has been identified via analysis of state of the art in training for CPPB personnel in soft-skills, and in serious gaming (Work Package 2). A gap in specific soft skills has been identified through interviewing CPPB personnel in WP3. Learning objectives have been identified via collation of data in WP2 and WP3 and benchmarking them against international standards (WP6). The second year of the project focused on designing and developing the game and assessment (WP4 and WP5) and evaluation of the design, game content and assessment (WP5). The steps in the process so far are identified in the following sections, reflecting the work done by the Work Packages, and written up in the tasks and deliverables that have been completed so far.

A notable feature of GAP to date is the intensely collaborative nature of the work, with frequent meetings and every step requiring input from several partners. This continued to be the case as we moved into the phase of the project where we were designing the game within the constraints of the defined learning objectives and associated behaviours, and staying true to the scenarios and details from the interviews, and simultaneously evaluating that process both in terms of the design process and in terms of evaluation of GAP as a curriculum and serious game.



2. Activity 1st September 2017 – 31st August 2018

2.1. September 2017

On the 18 and 19th of September 2017 the midterm GAP conference took place at Laurea University in Finland. This comprised of two days of activities. The first day was the meeting of the Consortium/General Assembly and consultation with the Expert Advisory Panel members who could travel to the Conference. This day reviewed the achievements of the project so far, discussed plans for the coming year, and heard from the Expert Advisory Board what their views on how were on the progress of the project. The second day was the 'Training through Gaming' Learning Soft Skills in Peace Building conference, which presented the academic findings of the project from WP2 and WP3 to an audience that included practitioners in training from enduser organizations, such as the German police, and the European Security and Defence College. The objective of this conference was twofold: Firstly to present findings concerning training design and secondly to collect good practices from military, civilian and police training experts about training practices when preparing personnel for CPPB missions, specifically how these practices could be delivered in a gaming environment. Gaming for soft skills training is gaining ground given the capacity of gaming to support reflective learning, self-efficacy and reflection on performance.



Figure 1 Consortium Meeting in Finland, September 2017

Mid-term Conference Consortium Meeting with expert advisory board (completed over 18 - 19 September)

2.2. October 2017

On October 26th, the Consortium hosted the reviewers and the European Commission project officer. Each Work Package leader made a poster to visually demonstrate the work accomplished,

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and to show how each part of the project connected to the other parts. The Consortium presented the work done so far chronologically and thematically through a series of power point presentations and discussions. The reviewers gave a 'Positive' assessment of the work done so far. During the discussion, they proffered constructive advice which we have since acted upon. They advised to involve the Advisory Boards (Expert, End Users) more. To fulfil that we started bi-weekly focus groups on skype with several members of the Advisory Boards on key decision-points in developing the game and correlating assessment. The Reviewers advised that we beef up the perspective of the civilian actors in CPPB missions, including local actors. The additional interviews with civilian actors were completed before Christmas so they could feed into the development process. They advised that we recruit more members of our Enduser Advisory Board from international organizations, NGOs, and local actors, which has been done. The Review was an opportunity to bring the Consortium together, to realize just how much we have accomplished so far, and to put us all on the same page about the phase of the project we are in now. Development of the game and concurrent evaluation of the process and content is underway.

All partners were within budget.

The Periodic Review incorporating contributions from all partners was completed and submitted at the end of October.

2.3. November 2017

Deliverable 5.1 "Evaluation plan and concept assessment report" is completed and delivered on time. This deliverable provides the continued development of the game platform concept and game software with user-based feedback on the initial concept along with ethical guidance and direction to ensure ethics-by-design.

The Reviewers Report was circulated. In response to Reviewers recommendations, 4 more NGO personnel was interview, end-user focus group meetings were initiated to meet every two weeks and enlisted one more organization for end-user Advisory Board – Polish Humanitarian Action.

The Reviewers felt that the work of WP4 and WP5 (development of the game and evaluation of the curriculum and game respectively) were intricately bound up together. They were concerned that there was a delay in decision-making around the type of game to develop which could have a knock on effect on the work of the project. To ensure timely execution of WP4 and WP5, the Coordinator and HPS, along with personnel at TCD involved in WP4 and WP5, and WP6 initiated weekly meetings. This expedited the process as once the type of game was decided upon, the work of developing the game began. The development of the game involved working with the interview data to develop a storyline and characters; incorporating the Learning Objectives (which had been benchmarked by Upskill against international standards) by going through the developing storyline and tracking them to incidents, decision-points, and utterances; mapping out how the assessment tied to the Learning Objectives would be done; and meeting with the writer contracted by HPS to write the script resulting from this complex process. It was a challenging but enjoyable and creative process to participate in for those involved.



Concurrently with this process, Haunted Planet Studios began the technical work on developing the game platform.

The Enduser Advisory Board and Expert Advisory Board were also consulted on a regular basis to verify authenticity of interaction, organizational function, and details such as rank and national insignia on uniforms.

Dissemination is an ongoing activity. In late November 2017 Sara Singleton, GAP PhD researcher based at Trinity College Dublin, presented at the International Sociological Association conference on Trust in Tokyo, Japan hosted by Chou University. In attendance were over 200 researchers from across the social sciences, including economics, psychology and peace and conflict studies. She presented a paper co-authored with GAP Principal Investigator Dr. Anne Holohan titled: “Challenges and paradoxes in trust for military peacekeepers: A qualitative study with the Irish Defence Forces”. Roísín Smith presented at the final conference of the Improving the Effectiveness of Capabilities in EU Conflict Prevention (IECEU) project in Brussels.

2.4. December 2017

The Ethics Committee Meeting took place on the 6th December. The main issues discussed were: Dual Use Policy draft, WP3 redactions policy and the role of the trainer in the GAP curriculum. Ethics of the evaluations (D5.1) was another point covered and the Committee was happy with the way the ethical issues were laid out and discussed in the document. Evaluation of Performance in the Curriculum/Game - assessment of an individual was also discussed and plans were deemed satisfactory. Liaison with the Committee was advised to continue during the Evaluation period.

It was agreed with the Commission that Deliverable 4.3 and Deliverable 5.1 could be revised to reflect the decision-making catching up work on the choice of game in November and were resubmitted/uploaded Dec 24th.

2.5. January 2018

The collaborative weekly work on developing the game, assessment and planning evaluation activities continued.

The writing and art for the game were sub-contracted outside the Consortium due to the practical impossibility of employing full-time people for a very short time period.

The EU Commission agreed to extensions for deliverables and milestones to allow for full execution of the inter-related development and evaluation activities. Inevitably, in a complex project, the need for minor reconfiguring of time-scales will arise. The Consortium was fortunate to have a Project Officer with the farsightedness to accept the rationale for adjustment.

Extensions:



1. Deliverable 4.4. Technical Game Design Document. Currently due M17 (January) – changed to M18 (end of February)
2. Milestone 12 Game Mechanics V2 Game Software Test currently due in M17 (January) would consequently also need to move to M19 (March 2018).
3. Deliverable 5.2. Periodic Evaluation Report (due M20, April), in line with moving Deliverable 4.4 and Milestone 12 back a month: extend the deadline to M21 (the end of May),
4. Deliverable 5.3. Learning: Operational and Educational Effectiveness report. Currently due in M25 (end of September). Changed to M27 (end of November).

As can be seen in the description below, each extended deadline to date has been met with full completion of work tasks.

Dissemination: The date for the GAP Final conference is decided for 10-11 January in TCD. TCD and Laurea University begin working together to plan for this.

TCD bade farewell to Dr Michael Cooke, who took up a new faculty position in the Department of Psychology at the National University of Ireland, Maynooth. We wished Michael well but fortunately GAP did not have to bid him farewell as NUIM is a partner in GAP and arrangements were made to transfer his portion of budget for work on WP5 to NUIM. Close cooperation with the PI and partners continues.

2.6. February 2018



Figure 2 Major General Michael Beary

The weekly meetings between WP1/WP4/WP5 continued. The Game Design document [Deliverable 4.4] was delivered at the end of February and the first part of the game was developed to allow for testing of the user interface in Milestone 12 which would feed into Deliverable 5.2. Periodic Evaluation Report. D4.5 In-game library of support links and learning materials was delivered by Upskill.

GAP secured Irish Army Major General Michael Beary, the recent head of UNIFIL (United Nations Interim Force in Lebanon) as a key speaker for the Final Conference.

2.7. March 2018

Between 20th and 22nd March end-users from various GAP consortium members participated in activities to evaluate the current version of the GAP game primarily in terms of the interaction design aspects of the human-machine interface (HMI). A total of eight evaluation sessions were conducted using a methodology that is user centred and involves the end-user as a co-evaluator of



the system, where it is the technology that is being evaluated, not the performance of the player. These sessions involved having the users play the game and carried out a set of prescribed tasks associate with the functionality and structure of the game, and report on their immediate experience in the moment of interaction. Game play involved working through scenes depicting scenarios that including cultural differences, and how to manage them within the military base, as well as more tactical situations on patrol.

Justyna Pyz spoke in Trinity Research Centre in Social Sciences (TRISS) about GAP for academic audience in TCD.

2.8. April 2018

In April the preliminary work on organising GAP conference was completed, securing the booking of venues and hospitality facilities at Trinity College.

Deliverable 5.2. “GAP Application periodic evaluation report” was submitted.

Work on in-game assessment and out-game assessment continued. The out-game measures on gender awareness, cultural awareness and communication were compiled for before and after game-play. They were drawn from existing measures developed and available in education and health, and then customized for the context of peacekeeping, and checked for fit with the learning objectives agreed upon in the inter-partner work in December through February. They were further customized for each type of organization (military, police and civilian) and these validated with members of each type of organization during the Assessment Workshops in May, June and July. Enquiryra put the measures/quizzes on a web interface, which enables easy collection, and later analysis, of data.

2.9. May 2017

In May, WP4 work focused on the technical development of the game.

WP5 work focused on assessment methodology.

In May, June and July the GAP project completed five workshops across Europe (Finland, UK, Ireland and two in Poland) with experienced senior military, police and NGO peace keepers to develop appropriate behaviour ratings and expert feedback within the GAP 2D Multimedia Game. Developing authentic and accurate ratings for behaviour is one of the key challenges to successfully applying serious games to assess skills and competency. Such ratings are vital to support both formative feedback and final assessment. The ADAPT Centre in Trinity College Dublin, as part of GAP Project, has developed a methodology, embedded in an overall serious



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Figure 3 BARS Workshop in Dublin, 13 July 2018



games development process, to determine appropriate ratings and capture assessment feedback. This competency rating and feedback will be integrated within the GAP peacekeeping game, focusing on Gender Awareness, Cultural Awareness and Communication skills. The GAP assessment ratings are based on significant expertise in peacekeeping from Finnish Military, Police Service of Northern Ireland, Irish Military as well as Polish Military and Police. The ratings will enable to GAP game to provide insight for peacekeeper trainees experiencing the education game and provide significant opportunities for reflection and learning.

2.10. June 2017

Workshops on BARS were conducted in Ireland and Finland.

HPS continued development of the game.

Dissemination: JP presented at The Irish Conference on Game Based Learning (iGBL)

JP, AH & KT submitted article "Gaming for Peace: Gender Awareness Training and The Polish Military" for Security and Defence Quarterly

SS & AH submitted article "The case for 'trust awareness' and 'trust mechanics' as key soft-skills for peacekeepers: A qualitative study of trust dynamics with military peacekeepers deployed to UNIFIL" for Journal of International Peacekeeping.

AH submitted article: Training Peacekeepers in Soft Skills: Gaming and the Demand for Standardized, Universal Pre-Deployment Training" to International Peacekeeping

PI and Project Manager attended PeaceTraining.eu Expert Meeting in Brussels on 5th June 2018. Also met with ESDC training manager and agreed to go ahead and get GAP approved for a module. Presentation to the ESDC provisionally scheduled for September. Provost gave written agreement for TCD to be a node in the ESDC training network. AH, representing TCD, is now a member of the Academic Board of the ESDC.

2.11. July 2017

The final BARS workshops were held in Ireland and Poland.

The GAP Game Alpha Release happened on time on the 31st July.

Dissemination: AH presented on GAP at XIX ISA World Congress of Sociology (Toronto, July 15-21, 2018).



2.12. August 2018

On 21st August, 25 representatives of the GAP partner organisations gathered in TCD to prepare for the final evaluation of the GAP game. Everyone had been sent the game a few days earlier so that they could play through the whole story.

Prof Anne Holohan, the PI of the project, introduced the plan of evaluation workshops and discussed the PowerPoint slides that will be shown by trainers, as well as the forms needed for evaluation. There were lots of useful comments from the participants that we will be taking into account when finalising the preparations. Next Anne and Mascia Toussaint from Enquiry introduced the pre-game quiz and everyone had a chance to try a section of it on the iPads or laptops.

After the break, Mads Haahr from Haunted Planet Studios demonstrated how to oversee the research subjects playing the game, stressing all the important issues like the user ID, differentness modes, pausing and saving the game and accessing the assessment results. This led on to the next presentation by Mathew Nicholson from ADAPT, who explained the in-game assessment and how to read the result. Later we discussed the post-game quiz and the trainer's manual and eventually the interview questions that will end the evaluation workshop.



Figure 4 Train the Evaluator/Trainer session, 21st August 2018

It was a busy, but very informative day with an excellent contribution from everyone who participated. We have made a note of all the comments and suggestions and these will feed into the final evaluation.

The Training the Trainers session was followed by a Consortium meeting, focusing on the start of work on Research and Commercial Exploitation, and dissemination, focusing on the conference in January 2019.

It was agreed that we have bi-weekly meetings led by FAC and the PI, and attended by all relevant and interested parties, to begin this process. Also, as we had done throughout the project, according to which WPs were active, additional members of the Consortium are invited to join the monthly Project Management Board meeting. FAC will join from next month.

The structure and focus of the Panel was reviewed and refined. The final conference will be a Soft Skills Summit: A Case Study of Training Peacekeepers through Digital Game. We planned invitations of speakers/participants in 3 breakout panel sessions around Peacekeeping Training/Simulation and Game Based Learning/Benefits and Challenges of Training in Gender and Cultural Awareness. Follow-



up with all partners will be done by first week of September, and finalizing of participants at the start of October.

3. Deliverables and Milestones

3.1. Deliverables

Table 1 GAP Deliverables from August 31st to 2017 to August 31st 2018

Number	Title	Lead Beneficiary	Month
D1.2	Annual Report 1	TCD	12
D1.3	Annual Report 2	TCD	24
D4.1	Report: Learning outcomes – gamification	HPS	12
D4.2	Report: Learning matrix	HPS	12
D4.3	Game V1 game software	HPS	13
D4.4	Game design document	HPS	17
D4.5	In-game library	HPS	18
D5.1	Report: Evaluation & concept assessment	TCD	15
D5.2	Report: Periodic Evaluation	TCD	20
D6.1	Report: Metrics and international standards rights	Upskill	11
D6.2	Report: alignment of game with international human	Upskill	11
D7.3	Midterm conference report/press release	Laurea	13
D8.2	DU - Requirement No. 5	TCD	18
D8.6	OEI - Requirement No. 7	TCD	12



3.2. Milestones

Table 2 Milestones from August 31st 2017 to August 31st 2018

Num ber	Title	Lead Benefi ciary	Due Date (in mont hs)	Description	Work Package No.
M6	Evaluation Agenda and Performance Criteria agreed	TCD	13	Evaluation Agenda and Performance Criteria agreed By this milestone, the consortium will have agreed the manner, frequency, nature and extent of the evaluation and performance assessment of the GAP application over the life time of the project.	5
M7	Development of Two Detailed Scenarios	HPS	12	Development of Two Detailed Scenarios Translating or applying learning outcomes that are suitable for implementation as game mechanics.	4
M8	Mid Term Review with Expert Advisory Board	TCD	13	Mid Term Review with Expert Advisory Board.	1
M9	Game Mechanics V1 game software Test 1	HPS	13	M9 Game Mechanics V1 game software Test 1 Production of game design V1 game software with 4-5 chapters, each of which describes a game concept intended to achieve the GAP learning outcomes.	4
M10	User Evaluation #1	TCD	13	User Evaluation #1 Evaluation of pen and paper version of the game with users at HPS.	5
M11	Midterm conference	Laurea	13	Midterm conference.	7
M12	Game Mechanics V2 game software Test 2	HPS	17	Game Mechanics V2 game software Test 2 Production of game design V2 game software with 4-5 chapters, each of which describes a game concept intended to achieve the GAP learning outcomes.	4
M13	User Evaluation #2	TCD	17	User Evaluation #2, parallel workshops in 3 locations.	5
M14	User Evaluation #3	TCD	23	M14 User Evaluation #3 Parallel workshops in 3 locations with final end users of the game. Before and after focus groups and interviews with game players	



4. Work in Progress

4.1. Work Package 1

The Periodic Report was submitted at the end of October. It summarized the work to date, and updated the plan and work to maximize the impact of GAP. The budget was thoroughly examined and effort balanced with expenditure. The project is well within budget. On approval of the Periodic Report, the next budget was distributed, though some partners, notably WSPol, are unable to use a lot of their budget due to restrictions on government employees (i.e. the police) being paid from anywhere except the state.

An Amendment has been prepared and is in the final stages of approval for the extensions discussed above; the transfer of budget to NUIM on foot of Dr Michael Cooke's moving position; and the sub-contracting of writing and art work on the game by HPS.

The PMB has met monthly and has proven to be an effective way to monitor and manage the progress of the project.

4.2. Work Package 4 – Game development

4.2.1. Overall View of WP4

The purpose of WP4 is to design and implement the GAP game in accordance with the findings from other WPs, and to provide ongoing support to the evaluation team. Specifically, this includes:

1. Identifying technical requirements for capturing ongoing learning achievement data and the game instrumentation necessary to facilitate it.
2. Producing a series of 4-5 concept-stage game designs based on the identified learning outcomes and performance data capture requirements and subject those designs to critique from the project's stakeholders.
3. Producing one detailed game design specification for implementation in a digital format. The specification will include details on gameplay modes, interaction models, core game mechanics, platform considerations, visual and audio styles, story and characters, identification of parameters to tweak for gameplay balancing, as well as details on instrumentation for performance data capture.
4. Implementing the game software in accordance with the detailed game design specification.
5. Providing technical and operational support to the evaluation team (WP5) during the user trials.



Figure 5 Indian Officer, non-playing character



Items 2-5 are within scope of the 2018 annual report. Items 1-4 have all been achieved, and item 5 is currently ongoing.

Task 4.3 Game Concept, and Task 4.4. Game Final Design

As part of the work on Task 4.3 GAP Game Concept Development and Task 4.4 Game Final Design, HPS, together with TCD developed storylines based on selected themes and scenarios in the interviews. These were tested with endusers from the Consortium and beyond. HPS, TCD, NUIM and Upskill prioritized learning objectives within gender awareness, cultural awareness and communication. These learning objectives were mapped line by line to storyline scenarios and vignettes in round table sessions, and storyline details were included to incorporate them.

4.2.2. Deliverable 4.3

Deliverable 4.3, entitled “Technical Game Design,” presented four game concepts, each designed to address aspects of the learning outcomes identified as most suitable for the GAP game by

Deliverable 4.1. The first concept focused on a single character and the consequences of their actions; the second on how multiple characters could interoperate in a wider multi-organisational context; the third on nuanced communications and generating empathy in the player; and the fourth on understanding that other people can and do have views, goals, and needs foreign to oneself.



Figure 6 Maria, Finnish CIMIC officer, main character in the military storyline

The concepts were submitted to stakeholder critique at a workshop session during the Laurea-hosted GAP conference in September 2017. Elements of the first and fourth concepts were best received amongst the stakeholders, and they stressed the

importance of seeing the consequences of one's actions, and the ability to experience scenarios from multiple viewpoints. Based on this feedback two additional concepts were developed, one a 3D or virtual reality game based on concept four, but showing consequences for each character's actions over a single scene as in concept one; the other a 2D or text based game based on concept one, but having multiple characters and thus points of view over a number of scenes as in concept four.

The original version of Deliverable 4.3 (submitted 30 September 2017) concluded with an open question to be addressed in future conversations with stakeholders; that is, whether or not a 3D or virtual reality concept and platform was to be the GAP game's target, or whether another technology or concept was deemed more suitable. Attempts by the consortium to schedule end



user focus groups during October to inform this decision did not get sufficient uptake, delaying the decision until late October when end users were assembled for the project review.

After the submission of the original Deliverable 4.3, the game development advanced significantly, in terms of planning as well as actual game production. In response to the reviewers' comments in December 2017, an updated version of Deliverable 4.3 was produced, which contained two new sections and a new annex intended to address the issues raised by the reviewers:

- A paper prototype of the game design, describing the three main gameplay modes. For each gameplay mode, the deliverable gave its purpose in the overall game design, presented an example storyboard, described the narrative considerations in the mode, explained the visuals and audio required, and finally described the player's specific interactions with the game in this mode. The intention was to serve as a clear description of the gamification elements that would make the game engaging.
- A work plan (in the form of a Gantt chart) that described the different subtasks required for producing the game and also showed the start time, finish time and duration of the different subtasks.
- A draft story outline that showed how the story would develop.

4.2.3. Deliverable 4.4

Deliverable 4.4, entitled "Technical Game Design Document," presented the design for the GAP game. It started by identifying the design constraints, many of which were based on earlier project findings, specifically related to the game's target audience and environment (peacekeepers and their organisations) as well as the game's specific purpose (a game for learning) and the available development schedule. The deliverable then proceeded to present the design, starting with the fundamental decisions related to the game's genre and platform, before discussing general aspects of the type of player immersion and motivation strived for throughout the design.

The deliverable then presented the game content itself in the form of the game's setting, the playable characters, as well as the storyline development. Because the GAP game is designed to facilitate learning, the deliverable also listed the learning outcomes deemed most relevant and matched them against specific points in the game's story where they were addressed. The deliverable gave a detailed overview of the game's three gameplay modes and discussed the purpose of each mode as well as the mechanics and player actions associated with each. Throughout all the chapters on the game's design, the deliverable linked back to the constraints and fundamental design decisions and showed how they were used to motivate decisions taken in relation to all aspects of the game's resulting design.

Following the specific game design, the deliverable gave a technical description of the instrumentation required to facilitate the collection of data required for assessment of player performance, and also proceeded to describe the aesthetic design considerations, specifically in relation to visuals and sound design. The visual and sound design were intended to support



imaginative and sensory immersion respectively, while still being viable to produce within the timeframe allowed. The deliverable presented a roadmap for the final phase of development of the game.

Since the game is a visual novel games, the story is important. For this reason, the deliverable contained a 20-page game script with high-level dialogue descriptions that identified the story progression. To show how the game's specific dialogue would appear, the deliverable also included a 15-page section with an initial version of dialogue written for the actual game. Finally, the deliverable included findings from a small survey on IT infrastructure in the end-user organisations, which showed that different organisations have very different requirements in relation to platform and network security.

4.2.4. Milestone 9

Milestone 9, "Game Mechanics V1 game software Test 1," was due at the end of September 2017 and was reached on that day. The title of this milestone was not particularly clear, but the WP4



Figure 7 Market scene, exploration mode

description was as follows: "Production of game design V1 game software with 4-5 chapters, each of which describes a game concept intended to achieve the GAP learning outcomes." The Milestone was contained in Deliverable 4.3 in the form of sections 3 and 4, which documented four different game designs.

4.2.5. Milestone 12

Milestone 12, "Game Mechanics V2 game software Test 2," due at the end of February 2018 was reached as planned. It was contained as a detailed description of the game's design in Deliverable 4.4 and in the form of a playable wireframe prototype of the first 10-minute section of the game. The wireframe prototype was delivered to the WP5 team and used for their evaluation in March 2018.



4.2.6. Task 4.5

While not an official deliverable or milestone, an alpha version of the game was completed at the end of July 2018 and delivered to the project partners. This version of the game will be used and supported for user trials from September 2018 onwards.



Figure 8 Characters at the market

4.3. Work Package 5

4.3.1. Deliverable 5.1

Deliverable D5.1 was drafted in September 2017 for internal review and submitted in Dec 2017. It incorporated early feedback on the emerging concept from interviews and end-user workshops, as well as reflecting on more advanced iterations of the game paper-prototype design.

The purpose of this deliverable was to report on the results of initial user consultation around the GAP platform concept and then present a plan for continued formative evaluation of the concept and evolving prototypes. It also outlines the consideration for ensuring ethics by design for the platform. It will draw upon the work conducted to date in the GAP research packages to develop a consensus document as to the shape, scope, and objectives of the GAP solution. The challenges of implementing this solution will then be examined from a technical, organizational, and ethical perspective with the aim of identifying key questions and concerns to be monitored and addressed during solution development, as well as during the testing of the solution.

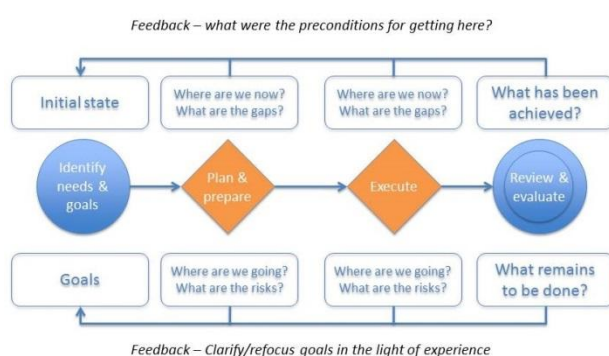


Figure 9 CONOPS Process overview

Section One provided a background summary on the use of concept of operations (CONOPS) for managing system and organizational change. This section will also set out the scope and intended aims of this deliverable.

Section contained a summary of the current SOTA with respect to pre-deployment training and the concept of soft skills. This information has been drawn from previous GAP deliverables, most notably

from WP2 and WP3. This was used to identify the implications for GAP solution design which, in turn, will inform the conceptual architecture for the GAP solution.

Section three contained a summary of the end-user consultation process and their expectations regarding the delivery of the GAP solutions.

Building on this, Section four outlines the justification for the use of the GAP solutions and discuss the added value they intend to provide. It will outline the description of the desired changes as well as the priorities for change. Section four presents an overview of the proposed GAP solution. It is critical to

note that at present the game remains in early development. This section will describe the intended user groups, some of the sample scenarios, and the user involvement, interaction style, and interface description. It will also outline some of the next phases of design development and the potential challenges and decision points that lie ahead.



Figure 10 Early paper prototype of game screen design



Figure 11 External scene game exploration - early prototype

Section five provides an examination of this current system state from an ethical viewpoint. This section is critical for noting challenges for development and the progression of the GAP solution. It will also be used to inform the considerations for user-based testing.

Section six will present the evaluation plan, this will include the agreed timeline for testing of the platform,

data collection methodologies, as well as key issues to resolve.



Finally, Section seven presented the conclusion of this deliverable and the future steps for the evaluation of the GAP technologies including the involvement of more advanced prototypes, interaction styles and screen design options.

4.3.2. Deliverable D5.2

Figure 12 Advanced paper-based screen concept

Deliverable D5.2 was submitted on time in May 2018 [agreed extension].

The purpose of D5.2 was to provide formative evaluation feedback on the interaction design of the GAP game to guide the further development of the user interface. The emphasis was primarily on the issues around usability, including interaction with the interface, understanding the content, following the narrative, use of language and managing the progress through the game. Feedback on the nature of the content was, at this point, of secondary importance. This was because it was only a partial implementation of the training content which was not enough to judge the overall effectiveness of the tool as a training support, and also the priority was to establish the optimal user-experience and usability results before further content implementation was carried out to reduce the risk of post-hoc dissatisfaction with the final version of the game. Having said that, some of the issues discussed of a usability and user experience nature interact with content aspects, which were discussed where relevant.

This activity was conducted in March and April of 2018. The methodology for this activity included two distinct methods of analysis. Firstly we conducted an expert-driven (in terms of interaction design and usability expertise) review of the GAP interactive game prototype with experts from NUIM. This involved reviewing the structure of the game, its design philosophy and match with



Figure 13 Screenshot from the interactive market scene with characters for dialogue

cognitive characteristics of users to identify, using best-practice knowledge, areas for improvement.

Secondly this was supplemented with a deeper user-centred process that allowed for representatives of the intended end-user community to provide direct feedback based on their own experience of having played the game. This methodology, known as cooperative evaluation, uses a thinking aloud protocol to help evaluators understand the mental models of the players (how they see the world), and assess the extent to which the game design and structure matches their mental model. These sessions were conducted in TCD.

The findings from both methods were reported in details in D5.2. Overall, from perspective of both evaluations (expert and end-user), the game was seen to work well and with few and minor problems from an interaction design and narrative point of view. In most cases the players found the game to be enjoyable and would welcome the opportunity to continue playing other days and scenes, particularly those involving operational/tactical work and decision making. There was a genuine sense of wanting to know what happens next.

As a training tool it was also considered potentially valuable especially alongside a blended learning approach where it may be possible to reflect on decisions made with an instructor/facilitator. There was some commentary in the cooperative evaluation about whether some of the options were realistic or not, but it was agreed that they had a role to play given that there were multiple choices. Even “wrong” or unusual answers have learning value based on their consequences.

The game was considered to be a female orientated game, not only because the main character and companions are female but some of the dialogue reflect what are perceived by players as womens’ issues. This is not necessarily a negative point as it can be useful to a) train women about how to be successful in working in a male-dominated environment, especially in a very different society and b) to train men to be able to empathise some more with the particularly challenges that a woman has to face when, for example, dealing with males in a traditional and conservative society. However, some of the in-base scenes were consider by both male and



Figure 15 Dialogue exchange with character (carpet seller)



Figure 14 Decision make and user dialogue

female players to be what would traditionally be thought of as issues corresponding to womens’ sensibilities, such as world peace and making the world a better place, and in general the dialogue around motivation and meaning of the mission were not considered relevant and reduced the value of Day1. The more “tactical” issues



involved in Day9 were considered much more relevant and enjoyable but at the same time they do allow for gender differences in terms of how the characters might be approached depending on whether the player is male or female.

Apart from the low-level usability issues, the proposed future visuals were considered to be a potential major improvement over the line drawings currently present. Also the use of a soundscape was considered highly beneficial as an addition to the next version.

Task 5.4: Development of Methodology to assess the GAP curriculum and game in a training environment linked with outcomes.

This was first outlined in Deliverable 3.2 and Deliverable 4.1 (discussed in Annual Report One) and Deliverable 4.2 Report on Learning Metrics and Recommended Instrumentation. The latter deliverable was submitted for the same date as Annual Report One and hence not discussed in detail in that report. I outline the key points here which have underpinned work in Work Package 4 and 5 during Year 2 of GAP. Deliverable 4.2 was intended to form input to the detailed GAP game design process. It investigated the processes and instrumentation required to implement in-game and out-game assessment techniques in order to support post-game data analysis. The document was not intended to detail a final design, rather it is an overview of the factors that must be addressed in the detailed design process.

Using games for assessment is about more than tracking points. One of the most common misconceptions is that all good learning games must assess learners within the game. In fact, assessment happens *around a game* as often as it happens *inside the game*, and so we are designing and providing useful assessment tasks pre- and post- game, including qualitative reflection, for training personnel. This offers valuable opportunities to unlock the instructional power of the game and support a student-centered learning environment. Trying too hard to build all of the assessment into gameplay can often destroy the fun factor. Unless the assessment is cohesively integrated into that game's experience students will feel interrupted and might disengage. Hence, GAP also offers assessment through pre and post game play instruments for measuring competency in the learning objectives, and includes the opportunity for reflection.

The GAP In-game assessment of behaviours is based on Behavioural Anchor Ratings (BARS) captured during the game. This assessment focuses on the key competencies identified for the GAP game (e.g. Cultural Awareness, Gender Awareness, Communication) and Behavioural Anchor Ratings (BARS) defined for those competencies. The overall assessment of a player/learner's behaviour within the game is measured against rated behavioural anchor points observed in the game. Feedback to the player/learner in the game is predominantly post-game as part of a reflection interaction.

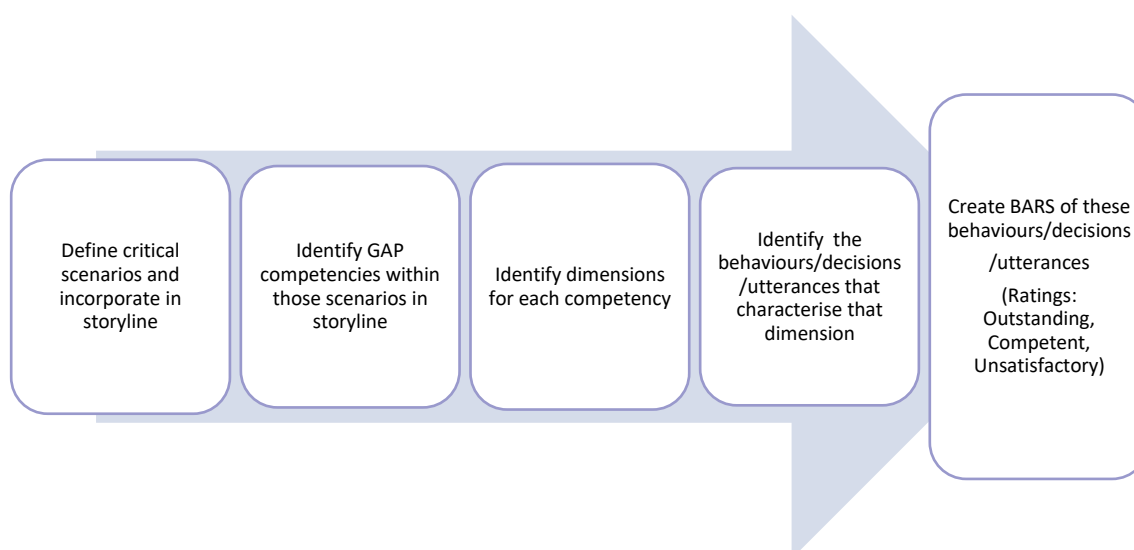


Figure 16 GAP BARS Methodology (steps 1- 5)

As part of the work on Task 4.3 Concept Development and Task 4.4 Final Design, HPS and TCD, along with NUIM and Upskill, prioritized learning objectives around gender awareness, cultural awareness and communication. The storylines were developed based on selected themes and scenarios in the interviews. The learning objectives and associated behaviours were mapped line by line to storyline scenarios and vignettes and storylines were tweaked to include prioritized learning objectives and associated behaviours in regular round table sessions from November through the end of February.

4.3.3. The BARS Workshop Objectives and Outcomes

Once the storyline was finalized, in order to identify ratings for behaviours/decisions/utterances in the game, the GAP Methodology involved organizing a series of workshops involving peace keeping experts drawn from multiple countries (Ireland, Finland, Northern Ireland, and Poland) and sectors (military, police, civilian), which extracted ratings for the behaviours in the storyline. Figure 16 illustrates the overall methodology.

The workshops consisted of systematically going through scenes from the military and police storylines in the game and then rating the behaviours/decisions/utterances according to identified competencies (which were mapped to the agreed Learning objectives). Each participant was given a scene description(s) and behaviours/decisions/utterance choice and asked to please rate each possible choice as the Outstanding, Competent or Unsatisfactory thing to do or say or decide. The workshops produced a set of ratings for behaviours/decision making/utterances which are being used for the scoring of Player behaviour in the game for each key GAP competency. As the player chooses, the decisions are sent to the assessment engine in real time; the player goes through the



game, generating scores, which he or she will see at the end of game play and have the opportunity for reflection.

1. The Objective of the workshops was to capture feedback from Military, Police and other subject matter experts regarding the rating of possible behaviours, decision making and utterances of the user (player) within the game.
2. The focus of the workshop was the capturing the rating of the possible behaviours (actions), decisions and choice of possible utterances of the player with regard to the key competencies being assessed by the game (namely gender awareness, cultural awareness, and skills in Communication).

4.3.4. In- Game Assessment

The assessment engine was built and integrated with the mechanics of the game to allow data to be sent to the server for analysis and returned as scores.

The **GAP In-Game Assessment** home page is accessible via a weblink and allows a user to enter a player ID to retrieve the playthroughs report. The report can be saved to a pdf so that the report can be permanently saved. Besides each player getting an individual report, if the game is being used in a classroom, a Trainer can see the aggregate results for all the players, but crucially, for anonymity, does not know individual scores.

The Player can see:

The **Score Panel** gives a breakdown of the player's performance and a comparison of the player's score compared to all other play through and against their training session.

There is a **line graph** showing score changing during the game with decisions made. Key decisions are indicated as points on the chart. Clicking on a point will take the user to that choice in the Choices Panel.

The **Choices Panel** gives a view of the choices that the player made. The player can click into choices to see alternative options, choices that other players made and trainer notes. Trainer notes will only be present for important choices. There will be filter options to different parts of the games or to important choices.

The Trainer can See:

Trainers Report: If the game is being played in a blended learning (within a classroom) environment, the trainer will also have a list of playthroughs for all participants. Clicking onto a playthroughs overview will bring the trainer to the full report for that player. Players are grouped into finished and in progress. The Trainer has an overview of the score distribution for each competency/learning objective. This should let the trainer know at a glance if the group did poorly or well on any learning objective, and give an indication of what the discussion needs to focus on.

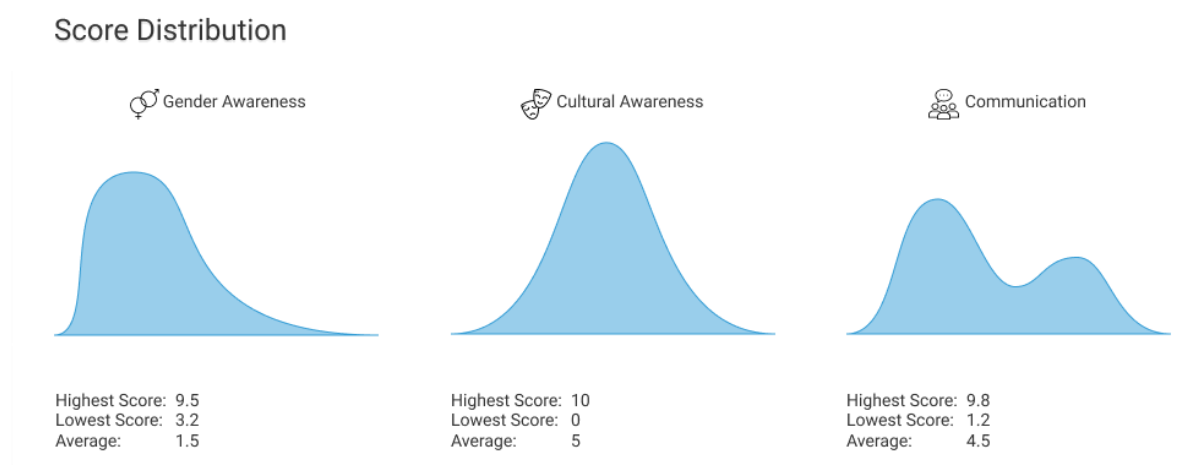


Figure 17 - Example of a trainer's view report

4.3.5. Out-Game Assessment: Pre- and Post- Play Quizzes and Reflection.

The out-game assessment involves pre-game-playing and post-game playing assessment of gender awareness, cultural awareness and levels of competence in communication through quizzes. We developed, pilot and revised new instruments for measuring attitudes mapped against the learning outcomes for gender awareness, cultural awareness and communication.

The instruments (quizzes) were developed through two paths:

1. Selecting appropriate Likhert scale items from existing instruments, in the fields of education, health, business and other sector specific measurement scales.
2. Customizing (1) for GAP by drawing attitudinal and behavioural items from the interviews with peacekeeping personnel conducted in WP3, with a specific focus on the behaviours extracted through the BARS methodology described in Deliverable 3.2 and Task 5.4, and reflecting the Learning Objectives benchmarked against international standards as described in Deliverable 6.1.

A long list of Likhert scale items were generated; for each item the player chooses a response from a 5 point scale: Strongly Agree/Agree/Don't Know/Disagree/Strongly Disagree). We then whittled these down to a manageable number through content analysis with endusers, and the remaining items which were divided into pre- and post- game play quizzes. Each player takes the Pre- and Post-play Quiz. The Pre- and Post- Quiz each contains three sections (gender awareness, cultural awareness, communication) and all players take all three parts in both.

The items on each Likhert scale were further customized for each type of organization (military, police and civilian) and these were validated with members of each type of organization as part of the BARS Assessment Workshops in May, June and July. Enquiryra put the measures/quizzes in a web interface and database, which enables easy collection, and later analysis, of data. See Figure 18.

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Figure 18 Image of Page from Pre-Play Quiz for Out-game Assessment.

Although some researchers may use unpiloted survey instruments in their studies, conducting a measurement pilot to establish the reliability and validity of the data of a new instrument in the intended empirical context is considered crucial by most. We demonstrated the content validity of our instruments by having experts from the end user partners from each type of organization (military, police, civilian) and Expert Advisory Board review and comment on their content during the Assessment (BARS) workshops in Ireland, Northern Ireland, Finland and Poland. The pilot study was done with the participants at the Training Day on August 21st. Internal consistency reliability was measured by Cronbach's alpha, to confirm the precision of our quizzes.

A considered Implicit Bias test for gender was dropped after August 21st as respondents felt that it generated the very bias that it purported to measure as the choices offered aligned to stereotypical female or male values through it not being possible to choose both (e.g. association of laundry had to be with either HE or SHE, not both).

The Post-play Quiz is designed to be taken at least 2 hours after game play. These instruments, in their itemized measurement and in the reflection parts, and in their timing, provide a means to assess the quality of the experiential learning through role-play.

The post-game assessment period includes an option for reflection on the experiences within the game. Reflection after the game takes place after the Post-play Quiz (a minimum of 2 hours later) in



the format of thought provoking written questions if the game is being downloaded and played alone, and/or a discussion with the Trainer if the game is being offered in a Blended Learning (Classroom) environment.

The suite of assessment methods offers an opportunity to compare self-assessment in the pre and post-play phase with actual behaviours in the game scenarios as measured in the in-game methodology. This will help identify those behaviours and competencies which individuals think they are proficient at but who do not demonstrate such proficiency in what they do in the immersive digital environment, or vice versa.

All three reports (pre-play quiz, in-game scores, and post-play quiz) can be downloaded as pdfs so can be permanently saved.

The reflective and discussion elements facilitate conversation and sharing of experiences around the softskills, which further enhances levels of awareness in these areas.

For the Evaluation, there will be a 15 minute open-ended interview with each player by GAP researchers to gather data on the experience of playing the game, which will be useful for refining the game, the assessment and delivery mechanism (stand alone/blended learning).

The above describes how the methodology of assessment has been developed. In the Workshops as part of Tasks 5.5-5.9 in September and October, we will be evaluating the GAP curriculum of soft skills as delivered through a digital role-playing game with assessment, and asking: how does playing the game affect levels of gender awareness, cultural awareness, and levels of communication?

Evaluators Training Day August 21st.

A training session to train the evaluators was held in TCD on August 21st. All the Evaluation materials (Informed Consent forms, information sheets, recruitment sheets, presentation for Evaluators to show to research subjects, interview schedule for post-play reflective interviews) were gone through with the participants. All logistical preparations were described: most importantly to ensure comparability, the same 10 ipads will be used at each location and each will have the game downloaded and links to the Quizzes and Assessment Home Page. The ipads will be transported by the evaluators between the locations for the evaluation workshops.

For the Training Day, all participants were required to have played the game beforehand and during the training, they were shown how the game worked with the Assessment pages, how the game scores are uploaded to the server, and the management of logins.

The participants played through the Likhert pre-play Quiz and got familiar with how to enter, navigate (and hence will be able to advise research participants) and complete the quizzes.

The post play period in the Evaluation will include the opportunity to read through the scoring report from the Pre-Play quiz and the in-game assessment, take a post play quiz. There will be a reflective interview, with open-ended questions from a schedule given to the Evaluators by the PI. The interviews will be recorded and transcribed.



Key participants (A Holohan, M Touissant, V Wade, D Morrow, M Haahr) are using the Training Day's experiences and insights to refine contribution to a Trainer's Manual which will be available both to the Evaluators and to future Trainers using GAP in a blended learning (classroom) environment.

4.4. Work Package 7

4.4.1. Task 7.1: Dissemination and Communication Plan

Lead: Laurea. **Start:** M1 **End:** M2

The expected outcome of this task was to plan the whole methodology of dissemination and communication, involving both internal and external communication. D7.1 Communications Plan, as result of this task, was drafted and submitted for the Project Coordinator on 28 October 2016.

Even though resources were planned for first two months of the project, this task has required constant update, as planned, and implementation has evolved in the second year of the project.

Laurea has consolidated three media evaluation reports during the reporting period. The evaluation report have revealed number of issues that have space for improvements for the dissemination and communication within the consortium.

This task is successfully implemented within the planned timeline, with no deviations or delays.

4.4.2. Task 7.2: Online tools (website, discussion board, intranet, social media)

Lead: Laurea **Contributors:** FAC **Start:** M1 **End:** M2

The project website is one of the main online communication tools that showcases the project and its development to the wider and audience. Public news and events, deliverables and/or articles written by the GAP team are regularly updated. Beyond the public website, this task created and maintains all selected online communication tools, such as social media. TCD was responsible of internal communication tool, and Sharepoint – intranet has been used successfully during the reporting period. As a main result of this task, the D7.2

Communications Package and visual identity were developed during the previous reporting period and they have been in use also during the second year of the project.

The second project year website statistics exceeding 100 views are shown in the table below:



Table 3 Top post summarized

27th August 2018, 8:23 am

[« Return to Stats](#)

Top Posts for 365 days ending 2018-08-27 (Summarized)

[7 Days](#) | [30 Days](#) | [Quarter](#) | **Year** | [All time](#)

August 27, 2017 to Today

Title	Views
Front Page	3,347
Who we are	1,321
About	913
GAP (Gaming for Peace) Conference	734
Publications	693
⊕ Conference: Learning soft skills in peacebuilding	571
News	368
⊕ Deliverables	231
Expert Advisory board	201
Consortium	189
Media Materials	174
End-user advisory board	167
Conferences	166
Ethics	123
Milestones	114
GAP mid-term conference: Learning Soft Skills in Peacebuilding 'Training Through Gaming' hosted by Laurea	107
New learning application on CSDP missions	103

4.4.3. Task 7.3: Midterm External and End User Advisory Boards Workshop

Lead: Laurea M9-13. **Contributors:** TCD, HPS,-Upskill

Start: M9 **End:** M13

The GAP (Gaming for Peace) mid-term conference was held in Espoo, Finland on 19th September 2017. The objective of the conference was defined as twofold: firstly to present GAP project findings concerning training design and secondly collect good practices from military, civilian and police training experts about training practices when preparing personnel to CPPB (Conflict Prevention and Peace Building) missions. The target audience was defined already at the early stage of planning as: *“Experts working with training and*

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education in peacebuilding from academia, policymaking and training institutes (civilian, police, military)."

The conference was planned and conducted following the curriculum planning cycle, where training needs were first scrutinized and further developed with the needs leading to learning outcomes in the curriculum. After analyzing learning outcomes and main contents, the relevant training methodologies, simulation and gaming in were selected were accepted.

The conference reached 96 end-users and they experienced conference as relevant and rated the event as good. A separate conference report was issued in October 2017.

4.4.4. Task 7.4: Press Releases, FB and Blog Updates, Tweets, and Newsletters/Blog Posts

Lead: Laurea **Contributor:** FAC **Start:** M1 **End:** M30 IN PROGRESS

Laurea has actively maintained the selection of tools to publish PRs and other posts. Publications have included weekly social media update, quarterly newsletter and tweets from GAP events. Results of visibility of different online tools has been as follows:

Table 4 Social media activity

Newsletter	5 newsletters
Facebook	125 Followers 50 Posts
Twitter	337 Tweets 310 Following 186 Followers
Other tools	LinkedIn shares through personal accounts, Sharepoint for internal communication (TCD)

4.4.5. Task 7.5: Targeted Conference dissemination for GAP consortium members (added task after the amendment in M6)

M12-M30

The outcome of this task is to identify key conferences that target the range of academic, policy, and end user stakeholders. Draw up a short list to identify the best value for impact and the appropriate 'ambassador' for the Consortium to go and present/network. Provide support with dissemination materials for the conferences.



GAP project has been introduced in various events during the reporting period and these events are recorded in the media evaluation. For the future following dissemination events have been identified. The person attending is yet to be confirmed with later events.

Table 5 Conference dissemination - last six months of GAP

Time	Event	Attending
29.08. – 01.09.2018	18th Annual Conference of the European Society of Criminology Crimes Against Humans and Crimes against Humanity	Aleksandra Nowak
5/9/2018	ESDC Academic Board, and Working group for Missions and Operations, Brussels	Petteri Taitto
6/9/2018	ESDC Executive Academic Board, Brussels	Anne Holohan, Petteri Taitto
28/9/2018	TCD Probe, Dublin	Anne Holohan, Sara Singleton, Ciaran Devlin
28-29/9/2018	SIETAR España Congress: Intercultural Competence: A Key for Inclusive Organizations and Societies	Justyna Pyz
12/9/2018	CIVCAP final conference, Brussels	
1-2/10/2018	Shaping the future of Peace Training in Europe and Beyond, Vienna Peacetraining.eu	Anne Holohan
16-17/11/2018	Voices and Choices; intersecting global feminisms, Belfast	Justyna Pyz
14-15/11/2018	CSDP Annual training conference, Brussels	
11/2018	EUPST meeting	
11/2018	ENTRi meeting	
12/2018	Bilateral presentations, i.e. Centre for Gender in Peace Ops (SWEDINT), PTEC consultations, UN Standby Police etc	
10-11/1/2019	GAP conference on Soft Skills, Dublin	
27/1/2019	Third International Conference on Gender Studies	

4.4.6. Task 7.6 Final Conference with External and End User Advisory Boards

Lead: TCD Contributor: Laurea. Start: M26 End: M30



The final conference will launch the game to potential end users and high level stakeholders, including militaries, police, governments, games companies, international organizations. It will include demonstration workshops, academic papers about the advancement of SOTA, and actions for exploiting the educational and commercial potential of the game.

The conference website has been opened and the call for papers issued in the website, twitter, LinkedIn and in the Facebook. A specific leaflet has been published at the project website and hard copies have been disseminated to the partners.

The conference programme has been drafted together with the TCD and preparation tasks have been allocated. The programme is foreseen to be published at the end of September 2018

5. Impact – Year Two

5.1. Expected impacts

GAP focuses on the difficult challenge of developing excellent soft skills such as communication and, gender awareness and cultural awareness, that facilitate coordination and relationship building in high risk environments of organisational, gender and cultural diversity. Activities completed in WP2 and WP3 ensure that learning material on soft-skill, gender and cultural diversity are based on a) documented gaps in existing CPPB personnel training and b) lived experiences of CPPB personnel and how they have experiences gaps in soft-skills and deficits in knowledge on gender and cultural awareness.

The benefits of GAP are being activated, promulgated and made available through the following activities:

In the short term, building awareness of GAP among researchers, end users and policy makers;

In the short to medium term (project start to maturity): encouraging participation and commitment across all participant and end user groups in a productive dialogue around mutual needs (through interviewing, workshops, developing learning objectives and game storylines, evaluation and continuous dissemination).

In the medium term (project maturity): enhancing cooperation between target groups in using GAP for training. Specifically, GAP can contribute to and significantly expand the ESDC's Pre Deployment standardized training (removing the barriers of logistics requiring physical presence and associated costs).



In the long term (post funded project) GAP can provide a model of a new approach synthesizing qualitative social research, serious game design, and game-based learning to offer rigorous, authentic, low cost and universally available experiential learning. It has huge research and commercial potential and transferability. The module and game are in the process of being approved by the European Security and Defence College and the game will be offered to every person going on peacekeeping missions within the EU.

In the long term: create a more secure society through more effective operational training of CPPB personnel.

In the following table the specific expected impacts as outlined in the DOA are updated in terms of activity towards achieving these impacts to date.

Table 6 Impact

Impact	Activity towards Impact
The game will have good re-playability so engaging users in a deep way encouraging them to invest more time in their training	Replayability (a) The game will have good re-playability so engaging users in a deep way encouraging them to invest more time in their training (b) Re-playability is being addressed in the way that game play is assessed. There are branching choices and players can play through again making different choices the second and third time around. Also, the game offers the perspective of two different characters with an interconnecting storyline, again inviting replay to pursue different options. Game design in WP4 will ensure that replay of game remains interesting and enjoyable for players.
Players, by their behaviour in game, provide feedback on the base curriculum.	Metrics generated by the game will be gathered and analysed by TCD. This will be used to analyse player performance in the game and assess the impact of playing on levels of gender awareness, cultural awareness and levels of communication skills, and these will guide any necessary modifications to the game.
The possibility for remote (even in-mission) delivery offers valuable flexibility as to when and where learning takes place	The game is available in 2D format, meaning that players are not required to specific equipment beyond a regular ipad, PC or tablet.
The delivery method will be cost effective because it can be delivered remotely and to all	The game is based on interviews from six European countries, thus the game will provide a



EU nations regardless of national wealth thus addressing inequality of access to training within Europe and enhancing intra-organizational interoperability	genuinely European perspective on CPPB activities. Equally, the choice of platform will ensure accessibility both in terms of mobility, ease of access and affordability.
Create a common language of soft skills between nations and organizations providing a level playing field of interoperability	The curriculum and game is designed to provide the softskills for personnel to span boundaries, whether based on gender or culture or organizational differences, producing better cooperation and better peacekeepers.
It will reduce the cost of missions as increased interoperability means an increase in the degree and time of progress towards the mission's goal	The lack of training in soft skills was identified by endusers as inhibiting interoperability; universal provision of such training will make for more effective and hence, less expensive, missions.
Missions will become more efficient at implementing the CSDP ultimately increasing security of and across Europe	See previous comment.
The game software can be developed into customized versions for specific languages and organizations using open-source technology (very low cost) meeting the much cited demand from all the key end users in CPPB	Yes.
The game software can be developed into customized versions for specific languages and organizations using open-source technology (very low cost) meeting the much cited demand from all the key end users in CPPB	Yes.
The solution is extensible to include hard skills (which are relatively easy to implement) but GAP is focused exclusively on the soft skills	Yes.
GAP enables automatic assessment of learning	In-game and out-game metrics generate data on the degree to which learning objectives have been attained.
	.

In this section we review GAP progress towards achieving societal impact, as described in the original proposal. Table one lists the factors upon which GAP seeks to achieve social impact and our progress towards these thus far:

Table 7 Societal Impact

Societal Impact Criteria	Progress thus far
Does the proposed research address documented	Work Packages Two and Three reviewed current state-of-the-art in training for Peacekeeping. Research showed gaps in training in areas such as cultural competency, gender awareness, and communication. WP2 analysis showed a gap in the training of the



societal security needs?	above mentioned areas and WP3 showed the on-the-ground impact that skills gaps in these areas had on the provision of peacekeeping, and identified the skills needed. The work in WP3 enabled learning objectives around key skills (gender awareness, cultural awareness and communication skills) to be defined and scenarios developed to form the base of a storyline for a digital role-playing game. WP4 is developing the game (alpha version delivered at the end of July) and WP5 is evaluating the assessment and the delivery through the game.
Does the research output meet these documented societal security needs? Will the level of societal acceptance be assessed?	The curriculum and game clearly meet an articulated need. The acceptance of the final game to peacekeeper trainers is of crucial importance to the success for of the project. To ensure that the final product is accepted we have 1) involved peacekeepers in every stage of the GAP project and will continue to do so from the identification of skills and competencies in interviews through developing the game and assessment in the game, to the testing and evaluation of the game and learning outcomes 2) Expert and End-User Advisory Boards were formed at the proposal stage and have been kept updated about the project. Their feedback and advice has been invaluable. In 2018, TCD became a member of the ESDC network for the purpose of offering GAP, and GAP will be presented to the ESDC Academic Board in September 2019 as a possible addition to its e-learning suite of courses. The feedback from the ESDC and from enduser partners and at conferences is one of great interest and keenness to use GAP in their institutions and programmes.
Does the research address threats to society?	The aim of this project is to assist the EU to develop its military and civilian crisis management capabilities and to improve training for personnel in Conflict Prevention and PeaceBuilding missions. Through interviews with peacekeepers we have identified issues with gender awareness, cultural awareness and communication between personnel and different European militaries, police and civilian organizations, that may hinder effective peacekeeping. Through the outputs of this project, better understanding and communication between various personnel and agencies will be achieved, thus leading to more effective peacekeeping. Issues around gender awareness and cultural awareness are of huge societal importance as the rise of social movements such as #metoo demonstrates. Many organizational settings/fields struggle with the same issues as peacekeeping. The use of GAP for peacekeeping training and the transferability of GAP can increase equality and make organizations more effective. Standardization of training, or the lack of it, has a big impact on the effectiveness of peacekeepers, so GAP includes assessment that is standardized against international benchmarks in the areas of gender awareness, cultural awareness and communication.
Does the proposed research address in an appropriate way these threats?	The identified threats are addressed through the provision of a digital role-training training game. The advantage of this is that there is no limit to the numbers of people who it can reach, and because it is digital, it is relatively low-cost (compared to offline training in the area of softskills). We received significant support for this approach by the end-user community at the outset of the project and this support has continued to be received.
Do segments of society benefit from the proposed research?	The anticipated end-users for the GAP curriculum and game are peacekeeping training organisations, working with militaries, police and civilian organisations. The personnel from the latter organizations will benefit from a more inclusive and supportive environment, as will the organizations themselves as they become more effective and inclusive, addressing crises of recruitment and interoperability. The host populations in CPPB missions will also benefit as the personnel will be more effective in achieving the goals of preventing conflict. This will particularly benefit women and children as they are disproportionately affected by conflict and post-conflict situations. The transferability potential of GAP means that wide swathes of society could benefit as organizations in



	other areas (education, business) could benefit from using the GAP model of rigorous collection of experience through indepth interviews, developing authentic scenarios and learning objectives based on those interviews, building them into a digital game, with build in assessment.
Does society as a whole benefit from the proposed research?	The project support EU international action which promotes democracy, the rule of law, the universality and indivisibility of human rights and fundamental freedoms, respect for human dignity. We therefore aim to benefit broader society via more effective peacekeeping, and more effective interaction where there is diversity.
Are there other European societal values that are enhanced by the proposed research?	The project aims to strengthen a common European identity in regards to peacekeeping, including developing a common perception of threats, a common approach to solving conflicts, and a common understanding of solidarity. Through interviews and workshops with peacekeepers from six European countries we have sought to contribute to understanding of what builds a common European identity and what militates against it, and what can be done through training around inter-operability to make a cohesive identity and modus operandi possible.

6. Next Steps

GAP has achieved much during its second year. As the project moved into the last phase the follow major area will provide the main focus of activity

- Game evaluation – The members of GAP team will conduct evaluation sessions in September and October with in Bulgaria, Portugal, Poland (two locations), Northern Ireland and Ireland. In every session there will be ten officers that have never been deployed and two trainers. Each full day session will consist of introduction, pre-game quiz, playing through the game, post-quiz, assessment, discussion and short interview with every participant

Table 8 Evaluation schedule

Task	Country	End User	Academic institution/ Leader	Lead Person(s)	Team	Dates
Task 5.9	Portugal	PSP	TCD/NUI M	M. Cooke	S. Singleton, C. Devlin, M. Labor	Tuesday, 11.09.2018
Task 5.9	Bulgaria	BDI	TCD/NUI M	M. Cooke	S. Singleton, C. Devlin, M. Labor	Friday, 14.09.2018



Task 5.8	Poland	WSPol, WSU	WSU	J. Pyz,	S. Singleton, M. Gawlik-Kobylińska, K. Kuć	Tuesday, 18. 09.2018 Thursday, 21.09.2018
Task 5.7	Finland	FINCENT	Laurea	P. Taitto	P. Hario, K. Hyttinen, J. Pyz, A. Holohan	Tuesday, 25. 09.2018
Task 5.6	Northern Ireland	PSNI	UU	M. Braininif, J. Byrne	Anne H., J. Pyz	Tuesday, 4.10.2018
Task 5.5	Ireland	DF	TCD	A. Holohan, J. Pyz	S. Singleton, C. Devlin	Date in October to be confirmed
Task 5.10	Ireland	Civilian	TCD	A. Holohan, J. Pyz	S. Singleton, C. Devlin	Date in October to be confirmed

- Planning the Final Conference – The GAP Final Conference will take place on TCD on the 10th and 11th January 2019. The responsible partners are in the process of planning the details of the event.
- Communication and Dissemination – At this stage of the project it more can be reported about the results, so the members of the Consortium have a number of conferences booked for dissemination and a number of academic articles are in the process of being published.