Project Start Date: 1.9.2016
Project Duration: 30 months

# D5.1 Evaluation Plan and Concept Assessment Report

| Deliverable details | |
|---|---|
| Deliverable number | D5.1 |
| Author(s) | Sarah Curristan<br>Michael Cooke<br>Anne Holohan<br>Roisin Cotton |
| Due date | November 2017 |
| Delivered date | November 2017 |
| Reviewed by | Nikolai Stoianov (BDI)<br>Petteri Taitto (LAUREA)<br>Anne Holohan (TCD) |
| Dissemination level | PU |
| Contact person EC | Carla Rocha-Gomes |

| History of Changes | | | |
|---|---|---|---|
| Date | Version | Person in Charge | Description |
| 27/09/2017 | v0.1 | Michael Cooke | First draft and ToC |
| 27/11/2017 | v0.2 | Michael Cooke | Internal draft for review |
| 30/11/2016 | V1 | Michael Cooke | Final version |

**Table of Contents**

# Executive Summary

The purpose of this deliverable is to report on the results of initial user consultation around the GAP platform concept and 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.

Section One provides 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 Two provides 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. These summaries will be used to identify the implications for GAP solution design which, in turn, will inform the conceptual architecture for the GAP solution.

Section three contains 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.

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 will present the conclusion of this deliverable and the future steps for the evaluation of the GAP technologies.

# 1. Introduction

The purpose of this deliverable is to establish the core concept for the proposed GAP solution and report on initial user-based evaluations. It will set out the conceptual architecture behind the GAP solutions as informed by the state of the art research conducted on training, soft skills, and serious games, as well as the academic research on the importance of cultural and gender awareness for peacekeeping. It will integrate this research with the findings of the user consultation. As such, this deliverable will attempt to bring together and harmonise much of the work carried out on the project up to this point to develop a consensus vision for the GAP solutions.

In recent years, the process of software development has come to increasingly recognise the importance of iterative development and the involvement of end-users in the design process. There are limitations to what this document can provide. The timing of this deliverable means that it is published while the GAP gaming solution and curriculum are in their infancy. Many alternatives and formulations are still under consideration, and so speculation regarding the future system must be mindful and not commit prematurely to components of the system's design.

The following section provides a background on CONOPS with a brief overview of its function, as well as different perspectives on approaches to CONOPS. Certainly, our approach has been informed by these alternative perspectives; critically, however, however, we regard our approach as human-centred in that it aims to consider the implications of change from the perspective of the system stakeholders.

## 1.1 Background to CONOPS

The term 'concept of operations' or 'CONOPS' refers to a user-orientated representation of a proposed system with respect to its operational use context. It reiles on a framework of operations for a specified system that sets out the system's function, the roles and responsibilities of actors within the system, and its relationship to its surrounding dependent systems, along with resource implications. The term CONOPS has been employed in many different contexts, including software development, engineering, administration, and military defence. Each of these domains carry their own perspective as to how a CONOPS should be utilized and the function it best serves; some of these perspectives will be outlined briefly in this section. Our own perspective to CONOPS is informed by these perspectives but carries a much more human-centred focus in that it emphasises how the system should best be operationalized to meet the needs of system actors and key stakeholders. A CONOPS is not a detailed user-requirements document but functions as a high-level description of the proposed end-state which helps to guide the technology

development and implementation process. It is not a static representation of the ultimate state of the system as it can reciprocally change as the development process requires based on user-requirements changes or technical limitations but nonetheless provides a conceptual reference for the direction of the technological development.

The US Department of Homeland Security (DHS) views a CONOPS as a means to establishing a description of the system from the perspective of the user objectives it aims to fulfill. A CONOPS is used to set out the system's relationship with existing assets, systems, and capabilities and describe how the system will unfold in the operational context (Department of Homeland Security, 2008). In this respect, a CONOPS document is a something akin to a mission statement that encompasses the oversight of all system assets and communicates the role, responsibilities, and interdependencies of the key actors that reside within that system with respect to the achievement of the overall objective.

Under this perspective, a CONOPS is primarily a communicative document for those working towards a common objective. Additionally, the presence of a CONOPS document can assist decision makers in developing solution concepts through the consideration of possible scenarios and how novel solutions, or changes to solutions may be implemented. Our chief criticism of this approach is that is a very prescriptive method of how the objective should be achieved and what the end solution should look like; the viewpoint of the actors who operate within this system – their needs, their preferences, and, most importantly, their expertise – is not emphasised.

Within the domain of software design, CONOPS is used as a means of establishing potential solutions for system design (Fairley & Thayer, 1997). In comparison to the DHS approach that describes the operation of a system as it should be, here CONOPS describes a system as it will be. Under the IEEE model of CONOPS, a concept of operations is undertaken as one of the initial steps in the creation of a new tool. One of the initial steps in the process of system development is the elicitation of system needs and requirements through stakeholder consultation. This consultation process is used to justify system changes and the rationale that underpins the future system design. However, the CONOPS document is not simply a detailed list of specified user requirements for a new tool. It begins with a description of the current system state, justifies the need for change and where change should be undertaken, and then provides the vision for what that future system should be.

According to the IEEE (2007), a CONOPS is a document reached by the consensus of developers and end-users that clearly defines what a technology, system, or solution will look like. The CONOPS interpretation offered by Fairley and Thayer (1997) for the introduction of new systems carries a very similar structure. However, it looks to clearly state, "the users' needs, goals, and expectations, operational environment, work processes, and other appropriate characteristics (p. 421)" for the purpose of ensuring that the development process will guarantee traceability back to those needs. However, the level of

involvement of the user in this process can stagnate somewhat after the initial period of consultation.

Our own approach to CONOPS places particularly emphasis on the needs of end-users and the operational realities of their working environment. It advocates for a process of iterative system development and close consultation with end-users and system stakeholders. In this respect, gathering system requirements is not sufficient to produce the concept for the prospective system and, likewise, offering a description of system architecture is not sufficient as a means of vision for a system state. To establish what a prospective system should be requires cognizance of the working culture of the prospective end-users and how that environment may further impact on the use of the tool.

A concept of operations (CONOPS) is document that is used to support the process of system development or system change. It provides a consensus document that communicates the vision for change from the current system to the prospective system to all system actors and stakeholders. This document will aim to establish the core concept behind this vision for change, specifically the GAP gaming solution and curriculum for the development of soft skills.

The process of building a CONOPS representation involves seeking answers when and were available to a series of high-level questions centred around the context of use. These include the Who; Why; What; When; Where; and How questions as indicated in Fig.1.



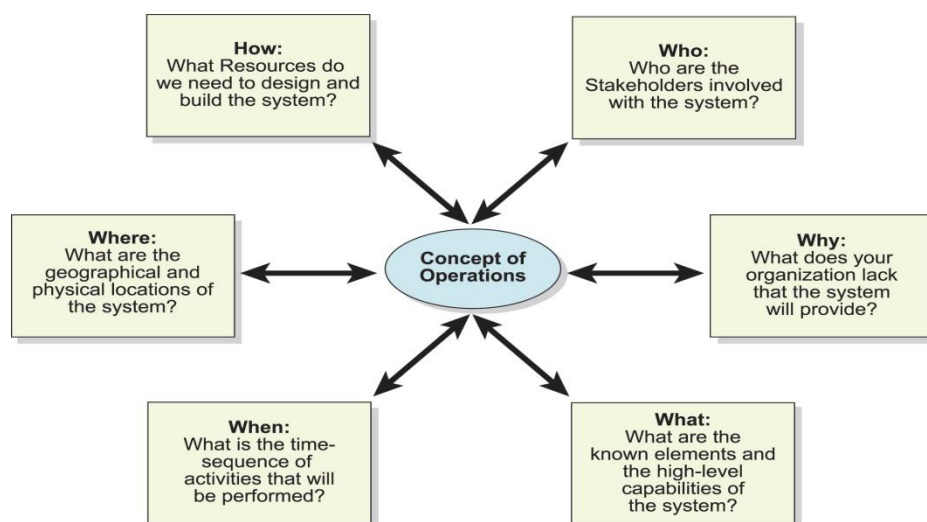*Figure 1 CONOPS Development - Key Questions*

Gradually by seeking answers to these questions as the iterative process of development progress we build up a more detailed and tighter picture of the key aspects of the platform and its contexts of use. The iterative nature of CONOPS is emphasized by its role in the typical "V" cycle of software development where it is an initial representation of the

concept, as informed by the interviews carried out in WP3, and then through a dialectical process feeds into and gathers input from the iterative user consultation process.
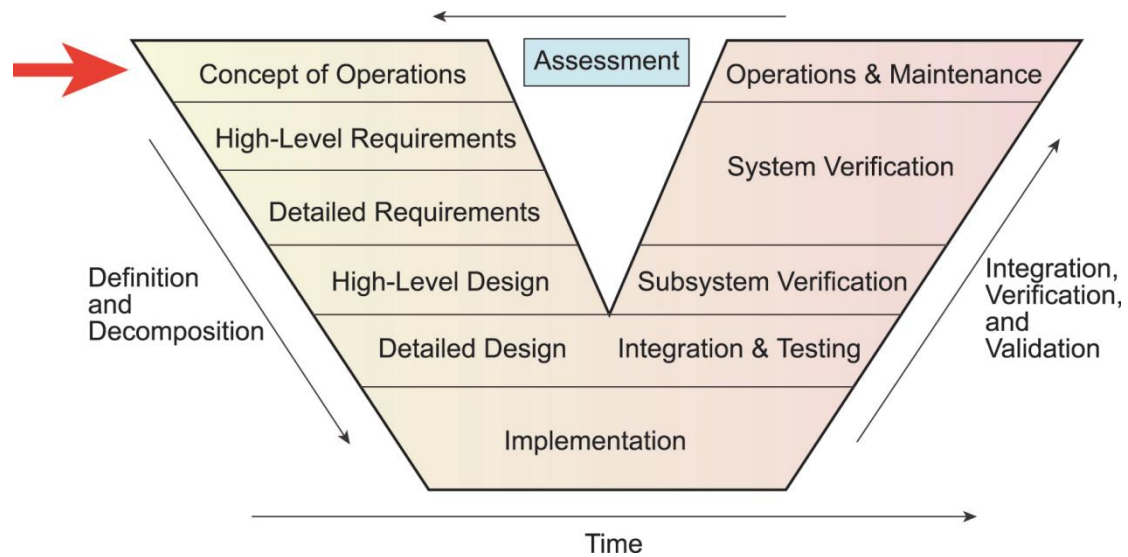


*Figure 2 CONOPS in the iterative "V" Cycle*

## 2. Current System & GAP Background

The overarching objective of the GAP project is to develop a soft skills curriculum and tool for the delivery of the curriculum for international personnel involved in international missions for peacekeeping, peace-building, and conflict prevention. The curriculum will be partly instantiated through a digital role-playing game, which will provide training on essential soft skills for the mission context. The nature of these soft skills was identified through examining a combination of existing training practices, the available literature on soft skills and peacekeeper training, and, most importantly, through direct consultation with GAP end-users. Associated learning objectives were defined and benchmarked against international standards, as one of the goals of GAP is to enable assessment which can be harmonized and benchmarked across organizations and nations. The assessment of competency in soft skills will be embedded in the game design through the BAR (Behavioural Anchor Ratings) system, and the degree to which the learning objectives are achieved will be assessed through out-game (before and after) instruments and reflection exercises.

The curriculum will be heavily informed by the experiences of those who have participated in overseas deployment for peacekeeping missions. It is proposed that the GAP curriculum will be continually updated as returning personnel share their experiences from deployment; this will ensure that the content is continually refreshed and up-to-date. The proposed solution is considered to be a cost-effective means of providing standardized soft skills training to a community of international end-users with different operational backgrounds.

This section will provide a brief description of the current system with respect to pre-deployment training and the capacity gaps that have been identified by training evaluation and peacekeeping literature. This section will then draw upon the review of the current state of the art for soft skills, training, and serious games produced in GAP Deliverable 2.1 and the gap analysis for training conducted in Deliverable 2.2, with some additional reference to the essential soft skills for peacekeeping identified by end-users in Deliverable 3.2. This content will be summarized here and examined to identify the implications for the design of GAP's conceptual architecture.

### 2.1 Summary of Pre-Deployment Training SOTA

The United Nations is responsible under international law for the preservation of international peace and security. The UN Department of Peacekeeping was established in 1992 with the specific responsibility of overseeing the effective implementation of UN peacekeeping operations. A basic definition of peacekeeping that informs our GAP concept is defined by the United Nations (1990), who regard peacekeeping as any "*operation involving military personnel, but without enforcement powers, undertaken by the United Nations to help maintain or restore international peace and security in areas of conflict. These operations are voluntary and are based on consent and cooperation".* Peacekeeping has grown in complexity to encompass peace-building; missions entail implementing measures that will reduce the risk of conflict, enhance national capacity for conflict management, and establish the foundation for which peace can develop and be sustained in the long-term.

Peacekeeping missions vary considerably because the mandate of each mission is calibrated to the unique requirements of the conflict within the host nation. The mission mandate may involve capacity building, promoting human rights, monitoring election processes, policing, or returning refugees. Furthermore, the contexts in which peacekeeping activities take place are diverse social environments often with dynamic political elements and concerns. Each mission differs from the next. Within peacekeeping, the tasks of conflict prevention and peace-building are extremely complex. The objective is understandably to resolve dispute, prevent conflict, and to achieve a sustainable and long-term peace; however, there are no clearly defined mechanisms through which these objectives are achieved. It is perhaps for these reasons that there is no simple consensus on the definition of conflict prevention and peace-building.

The Capstone Doctrine developed by the UN's (2008) Department of Peacekeeping was intended to establish best practice for peacekeeping and to utilize the lessons learned from over sixty years of mission experience. It defines the concepts and principles that are fundamental to UN peacekeeping operations and what is expected of peacekeeping personnel, explicitly the values of impartiality, integrity, respect, and loyalty. The Capstone Doctrine is intended as a guidance document, however, UN member states are not bound to its recommendations in delivering mission preparation.

According to the UN Peacekeeping Resource Hub (2017) peacekeeper training is regarded as "*any activity which aims to enhance mandate implementation by equipping military, police, or civilian personnel, both individually and collectively, with the knowledge, skills and attitudes to enable them to:*

- *Meet the evolving challenges of peacekeeping operations in accordance with the DPKO and DFS principles, policies, and guidelines as well as lessons learned from the field;*
- *Perform their specialist functions in an effective, professional, and integrated manner;*
- *Demonstrate the core values and competencies of the UN*."

Cutillo (2013) noted that there is a lack of evaluation methodology for assessing the performance of military units within the context of peacekeeping missions. The Integrated Training Service of the UN is tasked with conducting periodic needs assessments with respect to the implementation of Security Council mandates. This role involves determining the appropriate skills, knowledge, and behaviours required by personnel, identifying skill gaps, and assessing the available training opportunities and mechanisms. It also contributes to producing mission-specific training modules.

Both UN and EU regard the preparation of personnel for peacekeeping and peacebuilding as essential in order to allow them to perform effectively from the beginning of their tour of the mission. Hence, the UN and the EU view pre-deployment training, mainly conducted by contributing member states, as a mandatory part of the deployment phase of the mission. EU training policy states that, "Appropriate training is a prerequisite of deployment… all staff recruited for CSDP missions or operations shall receive certificated pre-deployment training prior to deployment (p. 7)" (Council of the European Union, 2017). Therefore, training that adheres to the EEAS standards is

required at the time of deployment. Pre-deployment training, in particular, is important for the coherence of the multinational force or HQ. Pre-deployment is important part of mission preparation and training can make management culture of the CSDP missions more uniform and promote European identity among participants.

CIVCOM and EUMC have the responsibility for defining civilian and military training requirements respectively for CSDP training activities through their specialised training groups: the EU Military Training Group (EUMTG) and EU Civilian Training Group (EUCTG). The working groups are also responsible for defining quality assurance standards and overseeing their implementation in CSDP training and education, in accordance with international educational standards, civ/mil standards developed by European Security and Defence College (ESDC) and the EU Qualification Framework.

In the EU, the sole training network specifically for CSDP is the European Security and Defence College (ESDC), mandated by all EU Member States. The European Security and Defence College was established in 2005 to provide training for crisis management operations. The objective of the ESDC is to provide Member States and EU Institutions with knowledgeable personnel able to work efficiently on CSDP matters. In pursuing this objective, the College makes a major contribution to a better understanding of CSDP in the overall context of CFSP and to promoting a common European security culture. The ESDC organises approximately 80 CSDP related training events annually and all training courses are offered to civilian (including diplomats), military and police personnel. In 2014-2015 the European Security and Defence College developed a specific pre-deployment training (PDT) for CSDP missions, targeted for personnel already selected, but not yet deployed to civilian and military CSDP missions.

For police who are deployed to peacekeeping mission, national police colleges are often expected to provide training. In 2011, the ESDC launched 'Europe's New Training for Civilian Crisis Management', also called ENTRi. As well as providing training for police, the college offers training for all personnel deployed to overseas missions including military, civil servants, and diplomats. The course provided training for crisis management missions led by the United Nations, European Union, the Organisation for Security and Cooperation in Europe, and the African Union. However, ensuring the delivery of training and mission preparedness is a responsibility that resides at member state level.

Another network college, working closely with the ESDC, is the European Union Agency for Law Enforcement Training, CEPOL. According to the renewed mandate since 1 July 2016 "CEPOL shall support Union missions developing and providing training to prepare law enforcement officials for participation in Union missions" (EU Regulation 2015/2219 of the European Parliament, 2015).

For several reasons, the training for peacekeeping missions carries a great degree of variety. Firstly, a diverse group of actors are involved in peacekeeping missions - military, police, non-governmental organizations, civil servants, and diplomats. Despite differing areas of expertise and organizational cultures all must receive an adequate level of training prior to the mission. Yet training is geared towards civilian *or* military audiences; training that brings different actors together in a holistic approach is rare. Training is delivered in phases with the initial training beginning before the individual is deployed. Training can be arranged within the individual's organization, by an affiliated

organization or external agency, or provided by the European Security and Defence College in Brussels. Furthermore, there are a variety of approaches as to how training may be delivered. Some common methods include classroom-based teaching, simulations, role-playing, and e-learning strategies.

The variance in training programmes is evident. Efforts have been made by both the UN and the EU to standardize pre-deployment training. In the UN, most notably, this has been attempted through the creation of a shared online repository of peacekeeping training resources. At present, there is still no standardized training curriculum or coordinated training approach for European personnel deployed to peacekeeping missions. For UN, the Core Pre-Deployment Training Material, constitutes a comprehensive set of curricula for uniformed personnel that are trained in the member states. Civilian UN personnel are trained based on the same curricula by the Integrated Training Service in Entebbe.

An additional source of variance concerns the means of training assessment. As Hummel and Pietz (2015) note, coordinated training can only be achieved through the cooperating on the structures, implementation, and evaluation of training courses and content. A system for recognition of the training standards of other nations is a key step in this regard.

GAP Deliverables 2.1 and 2.2, concerning the state of the art for peacekeeper training, found that at present there is no means of evaluating the effectiveness of skills and knowledge that arises from current pre-deployment training programmes (United Nations, 2015). Currently, there are hundreds of online courses targeted at peacekeeping personnel. Training is typically delivered through classroom based lectures or, increasingly, through online learning platforms. Certainly, the course content offered encompasses soft skills such as communication, negotiation, and mediation but at present there is no assessment mechanism to examine the effectiveness of these online courses. GAP provides soft skills training, with assessment that is benchmarked against international standards.

The International Association of Peacekeeping Training Centres produced a report in 2012 entitled 'Effective Peacekeeping and Peacebuilding: Challenges for the Training Community'. The report stated the need to identify the core competencies for training for mentoring and advising, reducing the civilian-military divide, project management, and addressing gender issues. Peacekeepers need to possess inter-cultural literacy and the ability to be continually adaptive. Again, there was a repeated statement that training needed to be harmonized, both among peacekeeping actors but also between training centres and the realities of the field.

Due to rotation schedules, military deployments can encounter gaps in institutional memory. Typically, deployment periods last from six to twelve months, with some countries providing even shorter durations. Fallows (2005) notes that as military personnel rotate out of deployment the relationship that they have with local actors or other peacekeepers are effectively lost and must begin again with the personnel from the new rotation. Bossong (2012) notes that there is little evidence for systematic learning for organizational capacity drawn from past missions within the EU. Allen, Rosén and Tarp (2016) propose that what is needed is a form of pre-deployment training that

is built upon fresh and up-to-date information from the field and in which critical learning aims can be assessed through testing mechanisms.

Another consistent criticism levelled at peacekeeping training is the need for developing soft skills. Soft skills including negotiation, mediation, and communication are given attention by many pre-deployment training programmes. Given the critical role for these skills in conflict prevention and peace-building activities their continued development is essential, but equally is confidence in the training and delivery of such skills. Additionally, the project's stakeholder consultation, discussed further in Section 3, corroborates the need to develop realistic training for these skills through scenarios that is built upon the experiences and lessons learned from previous deployments.

*Implications for GAP Design:*

1. The GAP gaming tool and curriculum should appeal to all potential actors involved in peacekeeping missions.

2. The training provided by GAP should serve to enhance the implementation of the mission mandate. This implies that GAP training should be built on an understanding of what the mission mandate is and how training will facilitate the end-user in fulfilling their role within that mandate.

3. The GAP gaming tool and curriculum should be consistently cognizant of the changing dynamics of mission contexts. This includes knowledge of the mission mandate, changing mission objectives, core foci of missions, and an awareness of cultural dynamics within the mission context.

4. The GAP solution should provide a means for capitalizing on lessons learned from the field. It should allow for the easy integration of updated information to refresh training content for peacekeeping and peacebuilding missions.

5. The training should provide a standardized curriculum and coordinated approach to training. It should seek to attain this through end-user cooperation and consensus regarding training structure, implementation, content, and evaluation process.

6. It is critical that a means to assess training outcomes is included as part of the GAP solution.

7. The training provided by the GAP solution should be of a standard that is recognised by all nations and organisations involved in peacekeeping and peacebuilding.

## 2.2 Summary of Soft Skills SOTA

A skill is defined as a possessed knowledge or behavioural pattern that can be used to produce a desired action. Knowing how and when to deploy skills effectively is regarded as the essence of competency. To possess competence is to possess the abilities and knowledge, but to demonstrate competency is to understand how one's combination of knowledge, skills, and attitudes can be applied to an appropriate context in order to produce a desired result. The key distinction is that competence refers to the one's *potential* abilities and competency refers to executable behaviours.

Career development authors note that in the industrial dependent economies of the past hard skills were vital; the nature of industrial work required these highly-trained, practical, technical skill sets. The emergence of contemporary information society has seen an increased desire for soft skills both to enhance the delivery of practical skills and to succeed and progress in the workplace (Robles, 2012). The value of possessing soft skills is widely recognized. However, the immediate challenge regarding soft skills concerns its definition; there is no consensus within the academic literature as to how these skills should be defined. It is understood that they differ from hard practical skills, in that they relate to the social sphere and interpersonal relations. Soft skills encompass skills such as communication, emotional intelligence, and pro-social traits. Additionally, as Schulz (2008) states, the need for soft skills is context-specific; a soft skill that may be considered an essential skill in one domain may be merely considered a desirable extra in another context.

The importance of soft skills for conflict prevention and peacebuilding is consistently emphasized but has not been prioritized within training. With respect to training NGOs for involvement in peacekeeping, the Centre for International Peace Operations (ZIF) emphasizes the value of soft skill in that "*a comprehensive knowledge of different soft skills greatly enhances the ability to perform efficiently in a mission, the training covers topics like mediation, negotiation techniques and stress management, whereas people centred-approach, inter-cultural communication and gender, for example, are streamlined through the various training modules*" (Lederach, Neufeldt & Culbertson, 2007).

Yet still, while soft skills can be recognized in situ, an exact definition remains elusive. Importantly, a lack of definition will carry implications for how soft skills can be taught and how soft skills can be measured. Drawing upon current training practices, relevant academic literature, and the GAP stakeholder consultation process, and with cognizance of the GAP project objectives, the GAP consortium defines soft skills as **skills that are cross-cutting across jobs and sectors and relate to personal competences and social competences, personal qualities, attributes, habits and attitudes, and non-job specific skills that are related to individual ability to operate effectively on peacekeeping and peacebuilding missions.** Again drawing upon these sources, Deliverable 3.2 identified six core soft skills for the GAP training curriculum and game. These are:

- Communication
- Cooperation
- Leadership & Decision Making

- Gender Awareness
- Cultural Awareness
- Stress Management

**Communication**, both verbal and non-verbal, was regarded by end-users as essential for all interactions during peacebuilding. Communication is considered critical to all mission aims and objectives. It was also viewed as critical to establishing positive relationships among mission actors and with the local population. The Impact of Communication Skills Training on Officers and Victims of Crime report conducted by the UK College of Policing noted that effective communication skills are significant in improving the quality of interaction with the public and also their perception of treatment by police during interactions. Similarly, Tyler (2003) notes that it is critical for the good communication with the public and ensuring that they are listened to is essential for those in positions of authority to be viewed as legitimate and providers of fair treatment.

Both the state of the art deliverables and the interview data pointed to a lack of training with respect to **cooperation** despite the centrality of working with other actors and organisations within the mission context. Cooperation was understood as bidirectional, it was important to demonstrate a willingness to cooperate and a commitment to fulfill obligations in order to receive the same treatment in return. Cultural differences, adherence to protocol, organizational frameworks, and differing perspectives were all factors which facilitated or hindered cooperation.

Good **leadership and decision making** was identified as a core soft skill predominantly among the military cohort of the interview participants, perhaps as a result of the centrality of the hierarchy and command structure that governs military organizations. It was noted that good leadership encompassed the qualities of several of the other soft skills listed here, as well as an interpreting contextual sensitivities and the importance of understanding the role of culture and gender.

As previously stated, the provision of **gender awareness** training is subject to the capacity, resources, and organizational culture of the individual member states. Most interviewees reported receiving some form of gender awareness training prior to deployment. However, there is recognition in the literature that training needs to go beyond gender norms and conflating the concepts of 'gender' and 'women'. Gender is crucial for success in peacekeeping and plays an extremely subtle and nuanced role in peacekeeping work and in working in areas of conflict. Likewise, training needs to be more nuanced and contextually embedded to reflect reality.

**Cultural awareness** was regarded as a critical soft skill for peacekeeping. Predominantly, this was mentioned in the context of working alongside the local population and understanding the mission context, but cultural awareness also arose in relation to working with other organisations and understanding alternative perspectives, modus operandi, and diverging objectives. Training should capitalize on promoting cultural awareness to facilitate good cooperation, coordination, and communication. The International Association of Peacekeeping Training Centres produced a report in 2012 entitled 'Effective Peacekeeping and Peacebuilding: Challenges for the Training Community'. The report stated the need to identify the core competencies for training for mentoring and

advising, reducing the civilian-military divide, project management, and addressing gender issues. Peacekeepers need to possess inter-cultural literacy and the ability to be continually adaptive.

Stress is a major cost for peacekeeping missions in terms of the impact on personnel, loss of effectiveness whether due to personnel returning home prematurely or their performance being impaired by chronic stress, and **stress management** is a key skill for all peacekeeping personnel. Being deployed on peacekeeping missions is stressful - managing the stress of a new, unfamiliar, often physically uncomfortable, and psychologically tense (whether due to boredom or the threat of violence) environment, is a key challenge for personnel. Colleagues are the main source of support, but too often, there is a culture of machismo where emotions are not discussed and individual problems are left to be resolved by the person going home. Returning to 'normal' life can also be problematic as loved ones at home and colleagues cannot relate to the experiences of peacekeepers.

The GAP interview data provided overwhelming support for the importance of soft skills in for achieving positive and effective results in peacekeeping, in particular with regard to cooperation and coordination with personnel external to one's own organization. The findings of Deliverable 3.2 also note that some organisations emphasise the necessity and priority of some skills over others. Additionally, some skills may be more central to some peacekeeping roles than others; however, regardless of role, the training should demonstrate the value and importance of possessing soft skills and the capacity to use them within the mission context.

To assess learning via the role-playing game, the competencies of interest must be capable of being manifested and demonstrated in explicit and observable behaviours. The game will allow players to choose and enact a range of possible behaviours in response to a given scenario. The quality, appropriateness, and suitability of these possible actions will be assigned ahead of time. The methodology by which the GAP competencies were translated to assessable behaviours is outlined in Deliverable 3.2.

_Implications for GAP Design:_

8. The definition of soft skills to be supported by the GAP solution is that of "skills that are cross-cutting across jobs and sectors and relate to personal competences and social competences, personal qualities, attributes, habits and attitudes, and non-job specific skills that are related to individual ability to operate effectively on peacekeeping and peacebuilding missions." This definition should be reflected in the GAP training which should provide guidance and instruction on the knowledge, skills, and attributes that underpin soft skills.

9. The soft skills to be focused on within the context of the game are: communication; cooperation; leadership and decision making; gender awareness; cultural awareness; and stress management.

10. The GAP game and training materials should be aware that different organisations may differentially focus on and emphasise some soft skills over others.

## 2.3 Summary of Cultural Awareness SOTA

Our understanding of culture, as defined in GAP Deliverable 2.2, views it as an immersive and influential factor that shapes human behavior, thinking, and the way in which we interpret and make meaning of our world. Culture manifests itself through language, values, tools, artifacts, social norms, societal institutions, religions, belief systems, taboos, clothing, gender roles, and the perception and regard for other cultures. Critically, culture influences how we react and adapt to encounters in our environment. It is important to note also that culture is a dynamic concept, it is consistently changing and evolving over time. Yet, in this regard, societies that are faced with war and conflict are a special case as they are not experiencing the same mechanisms of cultural dynamics as stable societies.

The nature of peacekeeping demands effective interoperability with the local population, as well as working alongside and cooperating with other international actors. The extent to which these relationships are positive can profoundly affect the success of the mission. According to Woodhouse and Duffey (2008), peacekeeping requires intercultural contact in several guises including:

1. Among nations that comprise the peacekeeping force.
2. Among the nations who comprise the diplomatic, humanitarian, and other civilian agencies.
3. Among the military and civilian organisations involved in the mission.
4. Among peacekeepers (both military and civilian) and the local population.
5. Among the different cultural or ethnic groups within the local population who may be in conflict.

Recent missions, such as Iraq and Afghanistan, have emphasized the need for peacekeeping to be population-centric in order to be effective. Fundamental to this, is the development of a profound understanding of the culture of the area of operation. In addition to this, the support of the local population must be earned in order to work towards the operation's objectives (Gentile, 2009). Deliverable 2.2 introduced Bloom's taxonomy for the levels of operationalization of culture. The hierarchy moves from a fundamental understanding of a given culture (one that exists at a purely descriptive level), to a more advanced understanding of culture (the ability to analyse and interpret cultural concepts, to identify their operational relevance, and apply them to behavior in situ to optimize outcomes). This is regarded as the essential difference between cultural awareness and cultural competence.

**Figure 1: Bloom's Taxonomy for Cognition, Levels of Operationalisation of Culture.**

Cultural competence demands a combination of knowledge, skills, and attitude. Knowledge refers to an understanding of critical historical, cultural, social and political aspects of the region and the relevant societal groups residing there. Skills refer to the ability to assume different cultural perspectives and to effectively conduct oneself and communicate effectively. Attitude refers to holding a positive attitude towards the local population and being open and receptive to their culture.

Cultural awareness is critical at all levels of operations but its importance is manifested in different ways. At the strategic level, cultural awareness is required to inform and direct political goals and mission objectives. From a security perspective, it is important to understand the nature of regional threats and conflict to accurately inform threat assessment and response. It is also critically important to understand the social and cultural dynamics of the region to identify the strategic goals of the mission and to assess the potential implication of strategic decisions on the region. At the operational level, cultural awareness is needed to inform chain of command decisions and to gain the support of the local population which can carry implications for the security of the area of operation. At this level, cultural awareness is also hugely important for state building activities and the successful implementation of community projects. At the tactical level, the high level of contact between peacekeepers and the local population shapes locals' perceptions and attitudes towards mission actors as a whole. It is important that this group can demonstrate cultural competence through knowledge, skills, and attitude to foster a positive relationship. Culture is a factor at organizational level. Different organizations (military, police, civilian) have different organizational structures and cultures, and struggle to understand each other, and communicate and cooperate effectively. Even within a particular type of organization, e.g. militaries, there can be significant difference in terms of organizational norms around authority, formality, the role of women.

Very often, the training provided on culture is specific to the mission context. This does not allow personnel to develop skills in cultural competency that are transferable from one mission context to the next.

As described, an in-depth understanding of the sociocultural context serves to enhance situational awareness for the area of operation. However, the NATO Multinational Experiment No. 6 found that skills in cultural awareness were lacking. Specifically, they referred to: a lack of education on cultural awareness beyond specialist roles; a lack of understanding of social, cultural, political, economic, and legal aspects of the environment; a lack of cross-cultural communication strategies; coordination issues between mission actors arising from differing organizational cultures; and a lack of common understanding across all mission actors of the operational environment. Proposed solutions to these issues include the use of cultural advisors, Human Terrain Teams, and Red/Green Teaming framing and analysis method.

With some exceptions (US, UK, Germany, Canada), the majority of states confine operationalization of culture to cultural awareness preparation that is delivered during pre-deployment training and the presence of cultural advisors. The use of culture as a means to inform decision making is still neglected. However, on a positive note, cultural competence is increasingly being viewed as a life-long skill that can be developed within the military vocation as in the UK and Nordic contexts.

*Implications for GAP Design:*

11. Cultural awareness should be one of the two key foci of the GAP training, the other being gender awareness.

12. The game should promote the perspective that good cultural awareness is an asset for peacekeeping.

13. The GAP training materials should recognize that cultural awareness in peacekeeping extends beyond understanding the culture of the mission context and the local populations. It is also necessary to effectively work in a multinational environment and alongside other organisations, in addition to working with the local population.

14. The game and training materials should take care to accurately reflect the culture that it portrays.

15. The GAP game and training materials should be cognizant that cultural awareness can benefit and support one's work in different ways depending one's role in the mission.

## 2.4 Summary of Gender Awareness SOTA

One of the most significant developments in the area of gender awareness and peacekeeping was the introduction of Security Council Resolution 1325 by the United Nations in 2000. Resolution 1325 recognised the essential role and contribution of women to conflict prevention, peacekeeping, and peace-building activities. Resolution 1325 is legally binding by all UN signatories. It has called for individual nations to implement gender mainstreaming measures within their organisations and to support the recruitment and inclusion of women in the military and overseas military and diplomatic activities. Since then, many UN nations have implemented national action plans that address the Resolution, however many nations have yet to act (Shepherd, 2011).

The European Commission also made a commitment to gender mainstreaming in 1996. The European Council (2005) advocates that gender sensitivity and human rights should inform the planning of all missions and operations, and also inform training for all mission actors. Yet, as the European Battle groups rely on personnel from European national organisations they are in turn consistently male-dominated and predominantly white. In this respect, they are not representative in terms of either gender or ethnicity (Kronsell, 2016). However, it is important to note that most national militaries – either within Europe or beyond – have only a low percentage of female personnel so it is difficult for this ratio to translate to greater representation at the international level.

The integration of women in military is important to abide by equality laws and principles of human rights and to eliminate discrimination. Organisational and technological advancements mean that the military is no longer a career in which physical strength is an essential asset; furthermore, in the realm of peacekeeping it is soft skills rather than brute force or strength that are the critical skills. As Deliverable 2.2 outlines, female participation in peacekeeping mission have been linked to positive outcomes in:

- Establishing dialogue with local population;
- Empowering women in the host nation;
- Greater attentiveness to differing security needs of men and women;
- Enhancing legitimacy;
- Interviewing victims of gender-based violence;
- Mentoring female cadets at police and military academies;
- Reducing misconduct rates and unlawful behaviour, particularly sexual harassment and exploitation of peacekeeping forces.

Gender mainstreaming is a somewhat abstract goal and there are many interpretations as to how it should be achieved both in academic circles, as well as in policy and practice. The UN Economic and Social Council regard gender mainstreaming as:

*"…the process of assessing the implications for women and men of any planned action including legislation, policies, or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic, and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality."*

Although some progress has been made with respect to gender mainstreaming, there remains a lack of strong attitudinal and institutional changes on the part of organisations, which consequently undermines the ability for real change to be observed at the international level. Added to this, as Bevan (2011) notes, there is a tendency for peacekeepers from industrialised countries to assume the role of gender equity experts, rather than personnel from less developed countries such as nations from African, Asia, or Latin America. However, it is worth noting that the first female Formed Police Units were contributed by India and Bangladesh and are providing increasing numbers of female peacekeepers (Pruitt, 2016).

A central issue is that issues concerning gender are often erroneously interpreted as issues concerning women. In the peacekeeping context, the male gender is viewed as the default and the military agenda remains male-oriented. Failing to acknowledge or address the dominant role of men and the lack of presence of women in peacekeeping work further perpetuates gender inequalities. It may even promote inequalities in that masculinist biases towards positions of power are imported from peacekeeping nations to the host nation (Kronsell, 2006).

Peacekeeping is a role, and how it is assumed in the field depends upon and is shaped by each nation's individual interpretation of the ideal model of peacekeeping. What constitutes the ideal peacekeeper in terms of skills, characteristics, or qualities differs greatly from one military to the next. The role of peacekeeper is extremely gendered, and the masculinities attached to the role are scripted constructs that are enforced through social scripts. Such scripts are defined by social influences, class, organizational culture, mission tasks, and mission context (Butler, 2006; Maki-Rahkola and Myrttinen, 2014). Jennings (2014) argues that the everyday activities of personnel need to be understood as it is these repeated performance of actions that construct identity, and may in turn be perpetuating gendered forms.

Female participation in peacekeeping missions can be viewed as a threat to men's masculine identity. However, men's objections to women's participation is not openly stated to avoid potential negative consequences, instead it manifests in informal means of exclusion (Miller, 1997). For

example, women may be given a new role other than what was assigned to the them prior to deployment; typically, this includes administration roles or roles that are confined to camp. The presence of women on deployment, in this regard, is at risk of being one of tokenism. The pervasiveness of masculinity also extends to sexuality in that homosexuality is regarded as somewhat undermining to the masculine culture. While homosexuality is becoming increasingly accepted, there remains the sentiment that homosexuals deviate from the masculine norm (Winslow, 2010).

The provision of gender training for peacekeeping personnel is at the discretion of individual member states. It is a decision that is affected by individual organizational capacities, cultural context, and resources. Such training has been recognized as beneficial for retaining female personnel, and for reducing sexist behaviour and sexual abuse and exploitation. There remains a need for such training to be cost effective and more widely available. Additionally, training must go beyond providing gender awareness that purely reflects the inclusion of women to one that reflects the true diversity of the spectrum of masculinity and femininity.

*Implications for GAP Design:*

16. The training materials should recognize that gender sensitivity and human rights should inform the training for all mission actors. The materials should recognize and promote the positive contribution of female personnel in peacekeeping and that their presence is an asset. However, it should also present a realistic depiction of how female presence is experienced on the ground, and the behaviours that make the mission a welcoming environment for women or an uncomfortable or even hostile one.

17. The training materials should align with ideas of gender mainstreaming promoted by UNSCR 1325. Similar to fostering cultural competence through GAP, the training should seek to go beyond conceptual understanding and cultivate the application of gender awareness for informing decision making and behavior, to the end that "women and men benefit equally and inequality is not perpetuated".

18. The GAP training materials should take care to ensure that issues of gender are not conflated with issues concerning women. The goal is to encourage awareness in the peacekeeping personnel, both men and women, of their own gender norms and how gender norms are socially constructed and vary in different societies and organizations.

19. The GAP solutions should take care to ensure that stereotypes or essentialism tokenism is not perpetuated through the game characters, scenarios, or content in supplementary training materials. The training materials should represent the true diversity of masculinities and femininities.

20. GAP should recognize that, from nation to nation, organisations will differentially emphasise the utility of gender awareness as a soft skill. Traditionally, some Western and European nations have paid greater attention to the issue of gender mainstreaming but the GAP training materials should not assume expertise on their part, nor assume without criticism that the Western / European perspective is optimal.

# 3. Results of GAP End-User Consultation

## 3.1 GAP End-User Consultation

As part of WP3, a consultation of potential end-users was undertaken with military and policing personnel from around Europe. Prior to these stakeholder interviews, participants received a brief background to the GAP project and its objectives with regard to soft skills training. During the interviews, several topics were addressed for the purposes of data collection. One of these areas addressed users' expectations with respect to the game and what it could offer peacekeeper training. At the end of the interview participants were given the opportunity to provide their own thoughts regarding directions and shape of the tools, what additional training should be incorporated, as well as their expectations for use.

Understandably, the GAP solution cannot provide a panacea to all training requirements, whether essential or desired. However, the implementation of any new technology must be cognizant of its users' needs and expectations if it is to be successfully adopted. A summary of the user consultation regarding the GAP gaming tool is provided by region below. This section also provides support for some of the implications for design that have been drawn from the state of the art in the previous section.

*Poland*

Consultation with the Polish end-users revealed five major themes with regard to what they would like to obtain from the gaming solution. The themes are presented here in order of their prevalence in the data.

The first theme was an emphasis on realism, which manifested itself in different ways. In terms of narrative, end-users spoke about how the games scenarios should be based upon real incidents that were encountered by personnel during peacekeeping missions. The benefit of using real scenarios is it gives credence to the value of the learning objectives. The shape that these scenarios should take was not universally agreed upon, some mentioned the use of everyday situations such as meeting with local leaders, other cited the benefit of using the most stressful situations imaginable in order to foster preparedness and expecting the unexpected.

Realism was also desired at a more granular level, with many end-users looking for realistic environments in terms of buildings and terrain to give them the opportunity to virtually enter the world of the mission. This could also extend to familiarizing users with mission equipment to facilitate preparedness. One end-user even mentioned extending this environmental realism to the local population also in order to represent the diversity of characters and personalities that are often encountered.

The second major theme concerned cooperation and working with others. The end-users noted the importance of training for working with actors that are external to one's own organization; this included foreign militaries, police, and civilian actors and organisations. Working with other organisations was viewed as an opportunity for learning and development, but it also presents challenges in understanding the perspective or mentalities of others. One end-user stated that there is no clear training on how to cooperate that it is regarded as something intuitive.

A third, and related, theme concerned perspective-taking. The interviewees were aware of the fact that military that the military perspective was just one viewpoint, and that other organisations can carry different – or in some cases conflicting - viewpoints. They recognized the value in the gaming tool including these different actor perspectives to build greater awareness. While there are many different organisations that contribute to peacekeeping missions, the ability to understand the civilian perspective was most commonly cited; perhaps because it is the most different from that of the military.

The fourth theme concerned the utilization of previous experience. As mentioned previously, the use of deployment experience was viewed as good way to inform the scenarios of the game. Additionally, participants also spoke about utilizing the experiences of personnel on deployment. They noted that these experiences should be captured at all ranks and disseminated in a form other than reports or lessons learned. They described how past experiences were a key source of information for preparation for their role overseas.

Finally, the fifth theme is one of inclusivity of soft skills training. The end-users state that they would like soft skills training to be mandatory and provided to all personnel going on deployment regardless of their rank or position in the organization. More importantly, they recognise the importance of these skills in the wider context of peacekeeping missions. One user acknowledged the breadth of the task but stated, "*it is a project for years, and it is not only for us but for the entire Armed Forces.*"

*Finland*


Four major themes emerged from the Finnish end-users' expectations for the GAP solutions. Firstly, the Finnish participants emphasized the importance of cultural awareness. They spoke about how a deeper understanding of the cultural context of the mission and the local population can be used effectively to support mission tasks. A political background to the conflict was considered extremely useful for understanding one's role within the mission context, however participants stated that this was something that was often underdeveloped in training and obtained through their own initiative. Some users emphasized the use of role-play as a method of delivering cultural awareness training. There was mixed regard for this, the positive aspect being that it was considered an effective method for learning, the negative aspect being that depending on the role-players or trainer, the culture may be represented somewhat inaccurately.


A second emergent theme focused on communication skills. Finnish participants spoke about the ubiquitous importance of communication skills for working effectively with external militaries and counterparts, and several key aspects of effective communication were identified that could be bolstered by additional training. Effective communication was cited as crucial to avoid conflict and misunderstandings, in particular with the local population. It was noted that to communicate effectively personnel should be cognizant of the aim and objective of their communication, and to be mindful of this. It was noted that listening and recognizing the needs of the other party was a critical element of communication. And finally, it was identified that communication is not only a means of obtaining or providing information but a fundamental means of establishing positive relationships.


Relatedly, the third theme centred on negotiation and mediation skills. Participants spoke of the need to promote dialogue between parties on the ground and to work to prevent conflicts. Resolving disputes and dealing with different personalities were seen as important skills to working alongside different actors. Open-mindedness and compromise were noted as means to resolving conflicts. There was some caution in using gaming-based technology to use train these soft skills as they are an extremely delicate and nuanced form of human interaction; however, the need for these skills in the mission context was repeatedly underscored.


Finally, the fourth major theme concerned skills of perspective-taking. Participants stated that it is important for military to be capable of assuming the civilian perspective. But this understanding also should extend to that of other organisations; women's groups and peace activists were cited as two examples of groups that may not readily align with military modus operandi. And in the case of women's groups there is a need for a gendered-dimension to perspective-taking. Furthermore, in

addition to being able to understand the role of others, it is important to understand how these individual roles and objectives fit together to fulfill the integrated mission approach.

*Bulgarian Army*

Interviews with members of the Bulgarian Army, and Bulgarian Air Force who served on UN and NATO peacekeeping missions yielded six key themes for the expectations regarding the development of the GAP solutions.

First, the interviewees highlighted the importance of working alongside other mission actors within the mission context. They indicated that working with other militaries, organisations, NGOs, and civilian actors can present its challenges. A minor challenge of working alongside other militaries are conflicting command structures, however communication and cooperation was regarded as consistently effective because of the commonality of 'military-speak'. In contrast, working alongside civilians (in the form of NGOs or the local population) was seen as somewhat more challenging because of the difficulty in military-civilian communication and assuming the civilian viewpoint with regard to achieving goals and objectives. Here, perspective-taking of the others viewpoint was considered to be a useful means of resolving these issues.

Second, mission based experience should be utilized and the experiences of previous personnel on deployment should be captured to maximize the benefit of lessons learned. The experience of personnel who had recently served on the mission were viewed as important. However, and related to the first major theme, these experiences should not be confined to the military perspective, as the experiences of other mission actors and organisations is also extremely valuable to understanding the broader mission objectives.

Third, the Bulgarian interviewees spoke about the importance of adaptability. There is a need to recognize the principles of training and the experiences of others but perhaps more importantly to be able to recognize their suitable application in different situational contexts. Adaptability, as a skill, was regarded as particularly useful by several interviewees, and they considered it to be somewhat characteristic of the Bulgarian Army.

Fourth, the need for updated information was considered to be essential. It was important that training solutions are informed by the current situational information gleaned from the field. Equally, it is important that this information is captured and utilized for the benefit of personnel and

future missions. To this end, two participants suggested the idea of creating some form of database for collating mission experiences and lessons learned.

Fifth, the use of the training solutions to provide environmental or contextual preparation was suggested as a positive application. Interviewees spoke of using the gaming solution to prepare personnel for the climate, environment, and terrain that they would be deployed to. One interviewee mentioned gave the example of emulating the sounds of rockets being fired, stating that the first time that this is heard in reality can be quite jarring.

Sixth, the idea of utilizing role-play methods as part of training was regarded positively. Again, the use of role-play is related to themes of working with external organisations and learning from the experiences of other mission actors. It offers personnel the opportunity to learn from the perspective of others and to assume the mission context from the perspective of another actor. However, while the use of role-play was viewed as a very constructive method for training, the participants expressed some hesitancy in using game-based technology to deliver the training as it undermined the important aspect of face-to-face human interaction.

*Bulgarian Navy*

The interviews with personnel from the Bulgarian Navy revealed three major themes. The first of these was that the training solution should focus on communication. With respect to soft skills, communication was regarded as the fundamental skill for work in the naval services. Participants referred to the need for effective communication to enable cooperation among the fleet and also in dealing with non-military vessels. They remarked that communication exists in different forms – within units, within the ship, from military to military, and from military to locals – and that all forms are slightly different but essential. Another tenet to the theme of communication was the importance of a good standard of English for communicating as part of a mission fleet and for training exercises; difficulties with English may present challenges for communication in these circumstances.

The second major theme was that the training should offer some help in the form of emotional regulation. Emotional regulation was considered as having both an internal and external dimension. For example, participants spoke about the need to internally regulate one's own emotions, learning to cope with stressful situations or to remain calm in dangerous circumstances. It was also viewed as an important skill to instill for the purposes of getting along with colleagues, working in close quarters, and dealing with the typical stresses of deployment. The need for emotional regulation

training may be more sought after by those in the Navy than the Army because of the confines of their environment for deployment. At an external level, emotional regulation was cited as important for deescalating tense situations, calming crowds, or to support negotiations.

The third theme that emerged concerned working alongside other organisations. Participants spoke about a desire for training to focus on cooperation with other militaries. In some cases, this was mentioned in the guise of practical exercises which GAP obviously cannot facilitate, but it could offer training in skills of cooperation for working alongside personnel from other organisations. As with communication, there are many levels of cooperation within and without an organization. In particular, cooperation between militaries was emphasized as this is most germane to the objectives of current missions. However, some participants mentioned that cooperation and communication from military to civilians could be useful in light of the ongoing migrant crisis.

*Irish Army*

Five key themes emerged from analyzing the data gathered from participants from the Army of Defence Forces Ireland. The first concerned cultural awareness training. Participants recognized the importance of understanding the culture of the host nation in order to earn the trust of the local population. While all participants spoke of receiving cultural awareness training prior to deployment, they remarked that a deeper understanding of cultural nuances and the political and social history of the region would be extremely beneficial in this regard. They commented that greater sensitivity to culture would inform personnel of how they should behave or interact with the locals and what the boundaries are; for example, one female participant mentioned being able to build rapport in the local community by playing with girls in the local orphanage because this engagement was welcomed, but that this option would not be open to male colleagues.

The second theme concerned the use of cultural knowledge to facilitate working in an international environment and working with organisations and groups external to one's own organization. It was acknowledged that different organisations – whether military, police, or civilian – have their own training, approaches, and potentially objectives, and that this in turn can lead to difficulties for working in collaboration.

Third, language was stressed as an important factor in building relationships with the local population. Participants commented that a basic knowledge of the local language allowed them to initiate communications and to demonstrate respect and engagement towards the local population.

For this reason, participants regarded instruction on the use of basic phrases, or a demonstration of the value of this knowledge, as beneficial for personnel on deployment.

Fourth, the participants spoke of how GAP training should be used to present personnel with unexpected situations or to challenge their expectations. The scenarios should allow players to apply the principles of their training in a creative way. Relatedly, the participants spoke about realism in the sense that the game-play should demonstrate the consequences of actions and the knock-on effects of decision-making.

Finally, participants highlighted that the game should be attuned to the mission context and its objectives. They stated that it should be cognizant of the mission mandate and how that can underpin and strengthen the call for soft skills. Two of the participants stated the example of long-standing missions like Lebanon in which the mission objectives and the role of peacekeepers has changed over time - the mission initially required a greater emphasis on tactical and operational elements and has now become more relationship and community-focused. Consequently, the participants felt that training scenarios need to be calibrated to these changes if they are to produce the right preparation for the mission context.

*Irish Navy*

There were three core themes identified by participants from the Irish Navy in discussing their experiences in NATO-led response to the recent migrant crisis in the Mediterranean Sea.

Firstly, participants stated that it would be useful for pre-deployment training to provide preparedness for the type of scenes that personnel would encounter as these are quite distant from the standard Navy deployments. There was almost universal agreement among the participants that the hardship and suffering endured by the migrants in addition to the loss of life is an extremely difficult aspect of the mission to prepare for, but that some exposure to these scenes ahead of deployment may be beneficial. Portrayals of the mission context could range from: depicting the migrants that arrive to the ship and their poor state of health; depicting rescue scenes and decision points for those tasked with rescuing people from crowded and chaotic platforms in distress; depicting the ship performing its daily routine with hundreds of passengers onboard; or depicting the sights, sounds, and smells linked to migrant rescue that are often initially distressing for personnel.

Related to this theme, some participants added that having some background knowledge to the migrant crisis could be advantageous. It was recognized that this has been given slightly increased attention as the mission in the Mediterranean continues. Understanding the background to and

reasons for the current wave of migration and the conditions migrants are often detained in for long periods prior to crossing can help to foster empathy.

The third major theme concerned stress management and emotional regulation. As with the Bulgarian Army, this theme was mentioned in relation to working close quarters with one's colleagues over a long period of time and the tendency for 'cabin fever' to set in. However, participants primarily spoke of the need to talk about and share their experiences and emotional responses to the scenes they had witnessed on deployment with their colleagues. Positive relationships with colleagues was viewed as essential. Colleagues – as opposed to friends or family – were capable of understanding the deployment experience and therefore could provide a great source of support. Overwhelming, participants spoke of preferring informal methods (chats, checking in on friends, humour, etc.) as opposed to turning to formal channels.

*Northern Ireland Co-operation Overseas / Police Service of Northern Ireland*

This cohort of participants consists of members of the policing community of Northern Ireland. Some participants had experience of overseas deployment as part of UN missions and others had assumed the role of providing training to police services abroad after leaving the PSNI, formally the Royal Ulster Constabulary.

The first theme that emerged concerned organizational awareness. Participants cited that it would be helpful if training advised on the potential differences in the culture, structure, and approach of other organisations that they would be working alongside in the international context. Participants noted that NGOs or military organization have particular ways of working that may conflict with a policing approach. Establishing general principles, expectations, or understanding of external organisations could be beneficial. For participants with responsibilities for delivering training, they remarked that it would be an advantage if training highlighted the culture of the local police organisations, and what it means to be a police officer in that country. For participants who had volunteered for peacekeeping deployments, they noted that the working culture of policing on missions is often different from at home; a major difference is the level of supervision and oversight, this may be viewed as viewed as an opportunity for innovation to some, or a cause to unsettle others.

The second major theme concerned using cultural awareness to improve interactions with the local population. Specifically, participants mentioned that policing– in comparison to, perhaps, a military perspective – views the local population as an asset, and it is important to develop positive

relationships. In this regard, cultural awareness should be provided regarding language, customs, and appropriate interactions to help develop rapport with the local population, and to avoid appearing insensitive. However, participants also noted that basic courtesy, respect, and politeness is fundamental, and that this is regarded as a basic tenet of policing in Northern Ireland.

Third, participants commented that, where training or mentoring for the local population is concerned, it is important to be respectful of the culture of the host organization. There is a need to recognize that organizational models and practices cannot be imposed. Participants expressed that there is a need to understand and appreciate the working culture of the local population, to identify the core areas for improvement, and then to develop a tailored solution in collaboration. Again, participants reiterated that this returns to developing respect, understanding, and rapport with the local population and interpreting their needs.

Fourth, several participants stated that some personnel found it difficult to adjust to returning from their time on deployment. Potentially, these difficulties are related to the substantial length of the deployment - participants from NICO spent a year on average on overseas deployment in comparison to an average of three months for military personnel. Participants remarked that they would like to see an awareness raised in the pre-deployment training of the potential mental toll that the mission can take, and also to allow those volunteering to examine their motivations for going.

Fifth, the participants remarked that there is a need to convey to participants who are being prepared for deployment that the changes that they will implement will be incremental and face several iterations before they may take hold. They remarked that there is a need to manage expectations in terms of the change and improvements that can be realized during their time on deployment.

Finally, related to the theme of cultural sensitivity, some participants specifically mentioned that their role would be helped by a more nuanced understanding of the social and political history of the local conflict within the mission. They commented that it is important to understand the reasons behind the conflict in order to inform their work in the community on the ground and to avoid insensitivity.


*Summary*

In summary, the end-user consultation revealed a recognition of the importance of soft skills training for peacekeeping, in particular cultural awareness. Regionally, there was variation in which soft skills were considered to be of greatest benefit in supporting the role of peacekeepers. Additionally, end-users spoke positively regarding the use of perspective-taking, role-play, and scenario-led training as methods of delivery. There was an emphasis placed on realism and the utilisation of experiences from prior deployment to help shape training. Most critically, the findings that emerged from this analysis are consistent with the Implications for Design that have been identified in Section 2. This

consistency regarding the application and nature of the solutions provides support for the early-stage GAP concept from an end-user perspective.

# 4. Concepts for the Proposed System

## 4.1 Summary of the GAP Objectives and Scope

The primary objective of the GAP project is to create a curriculum and low cost, highly customizable training tool that covers basic, pre-deployment and in-mission training in CPPB relevant soft skills. The curriculum and tool, a digital role-playing game, will specifically be designed to meet the (a) pre-deployment training, (b) continuing training in the field, and reflection after deployment feeding back into (a) pre-deployment training needs of Conflict Prevention and Peacebuilding (CBBP) personnel. The curriculum is comprised of soft skills (communication, cooperation, gender and culture awareness, leadership and stress management) identified as crucial for effective cooperation among organizations and personnel (military, police and civilian) and local populations in the field. Learning objectives derived from the soft skills identified in end-user interviews are benchmarked against international standards which facilitates recognition of the learning achieved in the curriculum and game. A suite of methods and measures for assessing how well these learning objectives are attained will be built into the design of the game and also provided through quantitative and qualitative out-game measures. A skills passport will be produced containing the attained learning objectives and relevant metrics.

GAP aims to develop a new model in curriculum development, based on a constant feedback loop shaping the base and ongoing curriculum during, and beyond, the GAP project GAP will therefore capture the tacit knowledge garnered from field experience and will address the challenges of institutional memory produced by rapid turnover and poor transmission of experiential lessons in a field of diverse organizations and culture.

These primary aims of the project will be realized and supported by several subsidiary objectives:

Objective 1: To review and report on the SOTA in current CPPB training theory and practice. GAP will critically and comprehensively map existing training and its impact (or not) on the ability of previously deployed personnel from diverse organizations (the military, police, and civilian personnel) and within those organizations (for example NATO and non-NATO militaries on the same mission) to work as an umbrella organization (i.e. to communicate and cooperate effectively in the context of diversity of organizations, gender and culture). The objective will inform training for dealing with the complexity of CPPB missions, which typically incorporate several if not all the following elements; conflict prevention, mediation, Security System Reform (SSR), Linking Relief, Rehabilitation and Development (LRRD), anti-corruption, and early warning systems. The mapping will look at the existing training structure and curricula to create a full review of the policies and

practices at the EU and National Level. Limited training in gender and cultural competency is currently available but is not widely available or accessible. This mapping exercise will result in a comprehensive literature review of formal and informal training underpinning current practice in CPPB preparedness in the EU. The mapping will also include the identification of the challenges of cost and logistics to train large numbers of personnel in these soft skills in a short time pre-deployment. This work will be adapted into policy briefs, academic papers, blog posts and other forms for a range of audiences.

Objective 2: To achieve a baseline in understanding soft skills across European member states and international soft skills with specific reference to those encompassing skills of communication and cooperation relevant for ensuring inter-operability in CPPB missions. GAP will critically and comprehensively map the definitions and concepts behind the soft skills, identifying those which are particularly relevant for the field of CPPB. This mapping will look at the various definitions in European directives, academic literature, member state education systems and industry standards and will result in a comprehensive literature review of CPPB relevant soft skills.

Objective 3: To review the SOTA in 'Serious Games' (SG) that have educational as well as entertainment purposes, with specific focus on the use of SG in developing soft skills, and SGs used, and those that could be used, in existing training by organizations deploying personnel in CPPB missions. This review will trace the development of concepts such as 'edutainment' and game-based learning focused on the benefits of applying technology and/or game mechanics to enhance learning outcomes. It will map the characteristics of SGs and review their use in fields of government, education, military and business. This will result in a comprehensive literature review of SGs focusing on their relevance for CPPB training. We focus on role-playing games and their potential for carrying improvement in effectiveness in soft skills into the offline world after game-play.

Objective 4: To conduct end user analysis of existing training and experiences producing an understanding of current practices through analysis of the received training and in field experiences of end users such as militaries, police organizations, civilian personnel, and NGO personnel. The end user groups are described in more detail in Table 7 and those involved in WP3 workshops to evaluate end user experience of training from a soft skills perspective, include personnel from police and military partners and civilian personnel drawn from a variety of organizations in the End User Advisory Board. The end user analysis of current formal and informal practices and training will be conducted in three locations around four politico-geographical clusters of actors: West: (Ireland/UK), North (Finland), East and Central Europe (Poland), and will consist of workshops, focus groups and interviews facilitating the languages and concerns of the participants.

Objective 5: To analyse gaps in training with end users, as experienced in the field to include assessment of gaps in training as identified through experience in the field, identifying learning experiences, and identifying situations where inter-operability and coordination was impaired due to lack of preparedness in the soft skills of communication and cooperation when working with diversity in organizations, gender and culture in the temporary networks organizations and their environment that are CPPB missions.

Objective 6: To define training needs and CPPB relevant soft skills and to develop an innovative base curriculum development model embedded in a Serious Game, i.e. an iterative game-embedded base curriculum development model which is furthered and refined by actual game play.

Objective 7: To produce measurements for CPPB relevant soft skills and an inter-organizational robust system of assessment.

Objective 8: To script key high risk scenarios and the game mechanics in order to operationalize learners where a variety of actors are present and those soft skills will be vital. The scenarios will include elements of conflict prevention, mediation, Security System Reform (SSR), Linking Relief, Rehabilitation and Development (LRRD), dealing with corruption, and the development of early warning systems, as in practice most real world high-risk missions incorporate these.

Objective 9: To build a Version 1 (V1) game software of a multiple player online role playing game set in a simulated world with a variety of CPPB scenarios.

Objective 10: To develop analytics for assessing performance in game and procedures for learners and employing organizations to access performance results including the creation of individual player Skills Passport linked to the EU Europass Initiative. Europass is an initiative which aims to help learners make their skills and qualifications clearly and easily understood in Europe - whether they are enrolling in an education or training programme, looking for a job, or getting experience abroad.

Objective 11: To produce a final sustainability plan for the GAP project outputs. Proposing mechanisms required to sustain and extend the successes of the network beyond its funded period, creating a long-term resource for developing SGs and a range of scenarios with different actors, contributing to the long-term security of Europe. It is envisaged that this will be by the game software being developed into a module in the core pre-deployment training offered by the

European Security and Defence College (ESDC). This will also incorporate the development of a self-sustaining network of end users who can update the tool (game) and content (base curriculum).

## 4.2 Description of the Proposed System

Serious games are defined as applications that use gaming technologies for a purpose other than entertainment value. As described in Deliverable 2.1, there are six key characteristics that render serious games a suitable medium for learning:

- Serious games provide contextual knowledge to facilitate learning.
- Serious games allow for experiential learning and the ability for real-life experiences.
- Serious games allow for interactive learning and allows learning goals and tasks to be embedded in the context of a narrative.
- Serious games present the opportunity for discovery learning, which facilitates learning.
- Serious games allow a medium for learning that poses no real-world consequences.
- Serious games allow for complex collaboration.

An additional advantage is that serious gaming offers a relatively cost effective and engaging means to provide soft skills training.

However, one issue that persists is the suitability of serious gaming for training soft skills. It is critical to consider how a game intended for soft skills development will be designed to deliver this teaching and how it will provide feedback to users.

The GAP game is a visual novel. A visual novel is a game in which narrative is the main focus. Most of a player's opportunities for interaction involve progressing the narrative in some way, either through choices made in dialogue or by interacting with objects in a scene that act as choice points within the game. A visual novel generally has multiple possible ways to progress through its storyline - these routes determined by the choices a player makes - and thus often has multiple endings to reflect these choices.

The GAP game is designed to work on mobile devices, and as such, player interaction with the game will require tapping and/or swiping.

Audio within the game will be simple but immersive, generally consisting of environmental soundscapes, character vocalisations, and user interface sound effects.

Visually, the game will be composed of largely static 2D graphics, and will have a foreground and a background. The background will display the current scene or location, and may have three or more layers for parallax scrolling, if the scene can be scrolled. The foreground will contain character portraits superimposed over the background. These portraits may change or animate to give

characters alternate facial expressions. The foreground will also contain an area in which to display the game's narrative text - which will often take the form of a dialogue between two characters.

In the game the player will play as and follow the lives of two different characters on deployment. Over multiple scenes, they will experience the characters' lives, where and how they work, who they work with, where they live, and what they do in their downtime. The choices the player makes as a character will have consequences - both for that character and the world at large.

**GAP Paper Prototype**

The following diagrams illustrate all of the basic types of interaction available to the player within the GAP game.

**Inner Monologue**

Exposing the player to their character's internal thoughts and feelings will be vital for building empathy with that character. The game can employ a character's inner monologue to allow this type of "conversation" with the player. In this example, the character has just arrived home and is preparing to get some sleep.
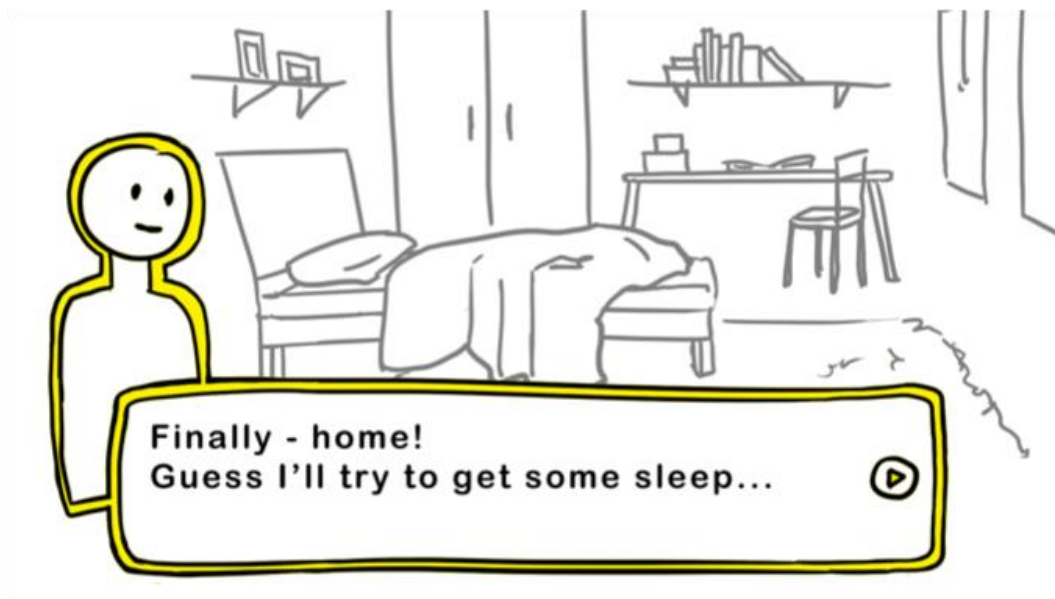


**Conversation**

Conversation with other characters is expected to be majority of the player's interaction with the game. Difficult choices will often be presented to the player through dialogue - often with no particularly obvious correct choice. The following example, however, is a relatively simple choice -

whether or not to join a group of other characters for dinner.



To induce a feeling of stress or pressure for some choices, the time a player is allowed to choose can be limited. If the player fails to make a choice in the time allowed, a default option will be automatically selected - perhaps moving the story in an unexpected direction.



**Scene Exploration**

Exploring a scene allows the player to decide what is important to focus on and how it should be handled. Exploring a scene can involve panning the scene from side to side, as illustrated below. Potential points of interest - things the player can interact with - can be highlighted to make their choices more obvious. In this example the player is exploring a town square, and they can choose to focus on the couple holding hands, the statue, or the pair of people exchanging a weapon.
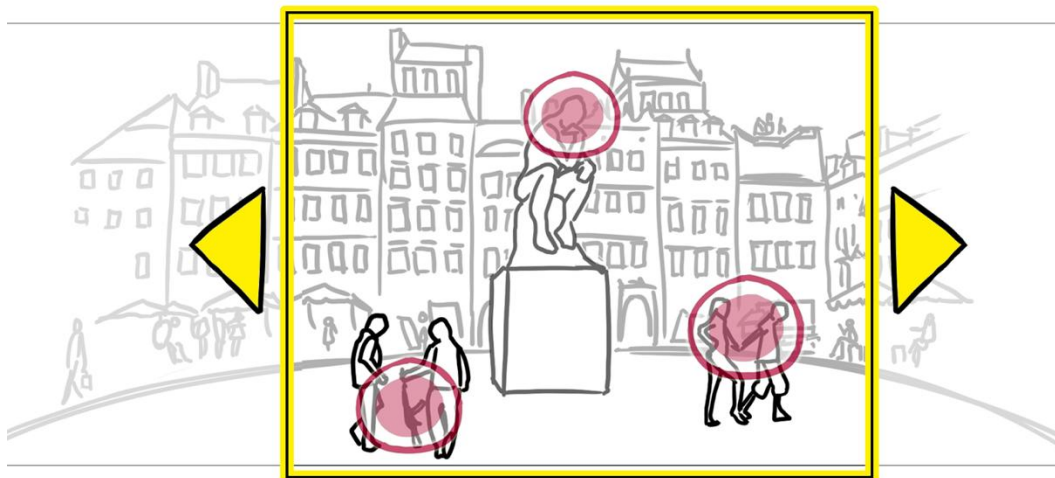
After making a choice, the game will respond accordingly to further the narrative, sometimes offering the player additional time to explore other elements in the scene. In this scene the player has opted to focus first on the pair exchanging the gun.



It's not uncommon to see guns carried openly here, though it's not strictly legal.

To increase pressure when making a choice, scene exploration can also include a timed element, requiring the player to quickly select what they feel is the most important detail to focus on in the
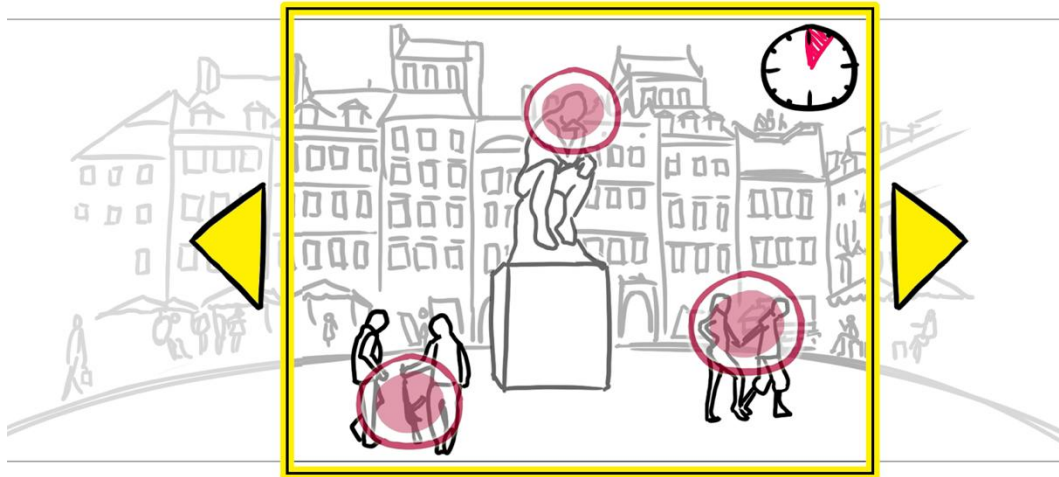


scene.

# 5. Overview of Ethical Issues

## 5.1 Ethical Evaluation Framework

Ethics poses the question of how an individual should act, and technologies are devices that assist us in our actions. Whether intentional or not, all technologies carry ethical implications (Albrechtslund, 2007). Therefore, it is critical to understand how any new technology will mediate human action and experience, how it will form our moral decisions, and shape our quality of life.

In the case of the GAP game, as a training tool it carries the intention of informing how personnel should act in the context of deployment. The intersection of ethics and technology in the form of

ethics by design looks to examine the implications of design from an ethical standpoint and to create ethically responsible solutions. Identifying ethical concerns and issues linked to a technology can be a difficult task; it is difficult to anticipate how a technology will be adopted by end-users from the design process alone. The adoption of a technology, its use, and how it is regarded is not simply a product of design or the vision of designers. Designers play an important role in this process but they are not alone; the technology itself will provide unexpected mediation and users will inevitably reinterpret technology to satisfy their own goals (Verbeek, 2008).

This section will outline the methods of participatory design and value-sensitive design that will be undertaken to identify potential ethical issues arising within the GAP solutions and to point to possible remedies. At present, the design for the GAP solutions, as outlined in Section 5, is still very much in its infancy. Therefore, the issues that have been raised in Section 6.2 are anticipatory rather than actual, but they can be used to consciously inform the progression of the GAP design. The methods of participatory design and value-sensitive design will be used in conjunction with the tool-based evaluation methods described in Section 7.

### *Participatory Design*

Participatory design is a design practice that promotes consistent and close engagement with the end-user community and key stakeholder groups for the purpose of developing a new technology that is specifically tailored to meet end-user needs (Muller & Kuhn, 1993). In Norway, during the early 1970s, there was a growing sentiment that technological advances were replacing and deskilling workers rather than enhancing existing skills. Norwegian unions pushed for a law to allow workers to determine which technologies would be adopted for use in the workplace. This standpoint also resulted in the emergence of participatory design (also: cooperative design, co-design), a new method for the development of workplace technologies in which workers' expertise was consulted and utilized within the design process (Friedman & Kahn, 2003).

Friedman and Kahn (2003) describe five steps within the process of participatory design, which closely follow the anticipated design process for the GAP tools - although it is important to acknowledge that design is an iterative process and that adherence to the steps may not be entirely linear. First, the design team identify the key end-users and stakeholders for the technology. Second, a workplace ethnography or qualitative research is undertaken to document end-users' workplace practices, perspectives to work, beliefs and values, and an understanding of user demands regarding the requirements for the tools. For practical reasons, the GAP project has addressed this step using document analysis and stakeholder consultation through interviews. Third, workshops are conducted to identify issues with the current system and how it could be improved. Four, the design process occurs with the active participation of end-users to ensure that the solution developed is fit

for purpose. Finally, mock-ups and prototypes are produced to allow end-users to experience the intended design and to enable them to provide feedback.

Within the GAP project there is a strong recognition of the importance of the end-user perspective, particularly as the project aims to produce training solutions. It is understood that this cannot be successfully achieved without engagement from end-users and stakeholders. From an ethical standpoint, participatory design helps to ensure that the tools that are designed are fit for purpose, and, importantly, that the values of the end-user are embedded in the design. A design process with an embedded consideration of ethics ensures that the ethical implications of a tool are not solely considered at the late stages of the design process, after which ethical issues may have already manifested (Albrechtslund, 2007). The domain-expertise of the end-users helps to ensure that domain-specific ethical issues are easily identified and also that the correct design values are implemented within the tool's design.

### Value-Sensitive Design

One criticism that is often levelled at integrating ethics into the design process is that absence of a formalized approach. While participatory design is useful for addressing concerns and implementing values from an end-user perspective, it does not provide guidance for the recognition of ethical issues that may lie beyond the expertise of end-users (Albrechtslund, 2007). Value-sensitive design offers a tool that can reconcile design considerations with ethical concerns. It is an approach that can be used in support of other design processes as it mirrors a commonly used design pathway; for example, the waterfall model or the spiral model of design also begin with a conceptual stage, followed by design and development stage, and finally an evaluation stage (Cummings, 2006).

Value-sensitive design aims to incorporate a consideration of values throughout these stages of the design process. Core among these values are human rights, well-being, dignity, justice and welfare (Friedman, 1997). It aims to shape design through the consideration of and integration of these values. It notes that society shapes technology but also that technology shapes society. There are three components to the value-sensitive design methodology. These are an investigation of the conceptual, empirical, and technical aspects of a design, respectively (Cummings, 2006).

The *conceptual* component is an investigation of the philosophy behind the design and its relevant value constructs. Value-sensitive design considers twelve key human values that carry important ethical influence. This list of values is not necessarily exhaustive but they are considered representative of the key ethical concerns that are discussed both within the technology literature

and everyday life and have been informed by deontological and utilitarian principles. The values listed are not strictly independent of one another and, depending on the technology and its application, some may be more prevalent than others. According to Friedman and Kahn (2003), the core values of value-sensitive design are:

- **Human Welfare**. A technology may pose a risk to physical (e.g. misdiagnosis), material (e.g. online transactions), or psychological (e.g. stress) welfare. For example, in GAP there may be a risk that some of the scenes presented in the game could be potentially traumatic or unsettling (see Section 6.2). GAP also offers a potential benefit in terms of human welfare in that it attempts to provide training on stress management for personnel on deployment.

- **Ownership and Property.** Ownership refers to the right to property, to use property, to distribute it and to bequeath it to others. Software development commonly experiences issues in ownership as designs may look to replicate or reproduce design concepts that have proven to be effective or familiar. Another issue in design concerns the ownership of user-based content. A major advantage of the GAP training solutions is that they provide training that is informed from real-life situations that have been experienced on deployment; however, the use of these stories may be problematic in terms of ownership as it potentially pushes personal stories into the public sphere (see Section 6.2).

- **Privacy**. Privacy has received a great deal of attention in the human-computer interaction literature, particularly concerning the capture, use, and access of information provided by users and the issue of informed consent. As a training tool, the major issue for GAP will be the management and protection of user data (see Section 6.2)

- **Freedom From Bias.** There are three forms of bias that can unintentionally manifest in computer systems. Firstly, *pre-existing social bias* which refers to the implementation of biases that exist prior to the development of the technology. A common example is in instances where a programme may rely on male voice-overs for command prompts in order to convey technical competency. Secondly, *technical biases* arise from attempts to emulate human judgement, discourse, or intuition which may result in poor representations of human behaviour. Thirdly, *emergent social bias,* refers to the need to be cognizant of the system's intended context of use but also potential future uses and applications. This bias can emerge in the context of intended use, when a technology is transferred to a new social group, or when societal values undergo change. For GAP, pre-existing social biases may present an issue in the manner in which culture and gender are represented in the context of the game. Technical biases may arise in the manner in which soft skills are represented through interactions in the game. Emergent social biases may be arise as the GAP solutions will be informed by a representative, but relatively small, cohort of end-user but is intended for widespread use in the peacekeeping community (see Section 6.2).

- **Universal Usability.** Good technology should enable all individuals to become successful users. The ability to achieve a good standard of usability can be primarily affected by design, but it can also be affected by diversity in the user community regarding technology

availability and standard of technical knowledge. In the GAP stakeholder interviews some participants mentioned a lack of experience in using gaming technologies. Although, usability will be a priority for the game, these comments do indicate that there is a self-perceived diversity in the end-user community regarding competence.

- **Trust**. Trust refers to the expectation of specific performance from a technology. On a technical level it means that the technology should be reliable and usable. There is the added consideration with the GAP solution that the tool should provide effective training as described (see Section 6.2).

- **Autonomy**. To offer autonomy, designers should allow users to have the greatest possible degree of control over their use of the technology. The GAP game is intended to allow users to explore different behavioural options and to test the consequences of different actions and their consequences within gameplay. The design of the game intends to avoid producing a game structure that is a walkthrough narrative.

- **Informed Consent.** Informed consent refers to expressing or indicating permission to agree to an act, where being 'informed' refers to a comprehension of the arrangements of this agreement and 'consent' refers to the ability to competently volunteer.

- **Accountability**. Technology is increasingly involved in decisions or actions that affect human lives, however the responsibility for outcomes should always rest with the user. Regarding GAP, the core objective is to produce soft skills training. On the design side, there is a need to ensure that effective training for soft skills competency is provided (see Section 6.2) but there is also a responsibility on the side of the user that this training is appropriately translated to application in the field.

- **Identity**. People carry multiple roles and facets of their identity. Design should enable users to have flexibility in establishing their identity, revealing various aspects of their character, and present an integrated but multi-faceted identity. Identity is a very interesting concept in relation to the GAP game. While the user's own identity will not be depicted, the game will allow them to assume the role of a peacekeeper of a different gender, culture, or role. It is important aspect of the GAP training to be able to assume the perspective of another individual; therefore, the GAP solutions will need to be very aware of how identities are being construed and represented (see Section 6.2).

- **Calmness**. The ubiquity of technology and the accompanying swell of information means that designers have to find a way to preserve calmness. With GAP, as previously mentioned there is the risk that scenarios within the game may be unsettling or emotionally draining (see Section 6.2). Equally, as previously mentioned, the game intends to provide users with training in stress management.

- - **Environmental Sustainability.** Environmental sustainability as a value refers to being mindful of the resources that design and development require. The development of new technologies also presents an opportunity to create technologies that are less-resource intensive and can benefit the environment.

The conceptual analysis examines how each of these values are affected by the technology, whether they are enhanced, supported, or diminished. It examines how the technology can provide a social benefit to stakeholders, or alternatively how it may deliver negative consequences. During this phase, it is important to consider the perspective of both direct stakeholders (the users) and indirect stakeholders (Cummings, 2006). Section 6.2 provides a brief description of the ethical issues identified thus far, and indicates how they related to the values described above. The process of conceptual analysis will be revisited again as the GAP solutions become more refined.

Phase two of value-sensitive design involves an *empirical investigation*. This relies on the use of quantitative and qualitative methodologies to assess the design in terms of its technical elements and values. During this phase there is considerable examination of the perception and prioritization of values, and how these values and the value conflicts are supported by the design solution. This phase concentrates on the human interaction with the technology, and therefore it requires a basic prototype (Cummings, 2006). The final phase of value-sensitive design is the examination of *technical* issues. Here, design is assessed in order to identify how values identified in the first phase could be supported by alternative solutions (Friedman & Kahn, 2003).

## 5.2 Key Ethical Considerations for GAP Design

This section details some of the main ethical concerns that have been identified in relation to the ongoing development of the GAP solutions. The issues have been identified with respect to the values listed in Section 6.1 above. This list is not exhaustive as the game development is in its very initial stages. As development progresses and the game and curriculum is assessed by the end-users, further ethical issues may be identified.

Understandably, it may not be possible to resolve all of these issues within the lifespan of the project. However, each should be given due consideration with respect to the design decisions that are made during the development of the GAP training solutions. The design process should record the rationale as to how a particular issue is considered to be satisfactorily resolved, or where an issue cannot be resolved within the constraints of the project, it should flag potential solution options as a roadmap for the future development of the tools.

*Consultation of Key Stakeholder Groups*

**[Values: Freedom From Bias; Universal Usability]**

As described in Deliverable 2.2, the majority of personnel deployed on international peacekeeping missions are from nations in Africa and South East Asia. For practical reasons, as GAP is a European project, peacekeepers from these nations have not been consulted and our inputs have been primarily drawn from European peacekeeping personnel. This presents a concern for two reasons. Firstly, as we have seen in Section 3, organisations tend to vary in terms of what they believe the GAP soft skills training should focus on; and naturally, these nations may have their own unique interests and requirements. Secondly, as personnel from Africa and South East Asia contribute a substantial portion of personnel to peacekeeping, they are important voices to capture as part of the stakeholder consultation process to ensure that the training solutions that are developed are indeed universal and inclusive.

*Recognition of Scenarios*

**[Values: Ownership & Property; Privacy]**

A unique aspect of the GAP project is that learning scenarios are taken from real experiences of deployment. This is an important aspect of the GAP game as it lends credence to the game narrative and the value of soft skills in the mission context. However, using real-life invites the possibility that the individuals involved can be recognised from the narrative or its details. For example, if a scenario incident is drawn from a real-life event that was particularly unique or recognisable, members of the peacekeeping community may be able to recognise a particular unit or organisation that was involved. While the GAP participants provided informed consent to share their experiences with the project, good ethical practice demands that any outputs of the research preserve the anonymity and confidentiality of its participants. Due care should be taken to ensure that where participant data is used to inform scenarios that the resulting scenario narratives are altered sufficiently to maintain the confidentiality and anonymity of those involved.

*Response to Scenarios*

**[Values: Human Welfare; Calmness]**

There is a small concern that players may experience a negative emotional reaction to scenes depicted within the game. The consortium has decided that the game will not directly depict any instances of violence or harm; however, some of the narratives or background details used to contextualise the scenarios and to ground the learning objectives may contain sensitive content that could potentially negatively affect game players. For example, one of the scenarios currently under consideration involves the death of a child in a roadside collision and the consideration of paying the victim's family blood money as compensation. While the incident itself would not be visually depicted, the discussion of the details of the event and how the matter is handled could potentially be unsettling or disturbing for some players.

This is not to suggest that such scenarios should not be utilised, indeed this example presents a moral dilemma that personnel could realistically encounter while on deployment and may be an effective way to capture and present the learning objectives. Yet, it is important to balance the choice of the optimal narrative for the purposes of training with the presentation of potentially sensitive or unsettling content that could be avoided.

*Representation of Culture*

**[Values: Freedom From Bias; Identity]**

As the GAP solution intends to provide training on cultural awareness to its end-users it is important that the solutions are cognisant of how culture is being portrayed and represented with the solution itself. At present, under the advisement of end-users, the GAP solution is intending to represent a fictitious mission setting that is a composite of several Middle Eastern countries. This solution sidesteps several issues. It means that the game can avoid a portrayal of any one country that could be construed as negative, offensive, or inaccurate. It also means that the political climate and human conflict of real countries is not been unfairly or inaccurately represented. It has several advantages but it also presents some disadvantages.

Importantly, fostering the skill of cultural awareness is the objective of the game; however, using a fictitious culture means that the awareness being developed is not one of a *genuine* culture and its nuances, symbolism, customs, and idiosyncrasies. This precludes the possibility of assessing whether a culture can, in fact, be accurately depicted in the context of a game. It does not allow us to fully explore whether a game depiction of a culture resonates with end-users who have been to, and really experienced that culture while on deployment. An additional concern is that the game will produce a culture that is interpreted, conveyed, and represented by people who are external to the cultures it is drawing from. While the fictional culture of the game setting is an amalgam of several

Middle Eastern cultures its creation is not informed by, or in consultation with, cultural experts from those countries in order to grant the cultural representation validity.

*Representation of Gender and Sexuality*

**[Values: Freedom from Bias; Identity]**

Equally, as the GAP solution intends to provide training on gender awareness to its end-users it is important that the solutions are cognisant of how gender is being portrayed and represented within the solution itself. GAP should be mindful not to conflate the concept of gender with the concept of women. It is important that in teaching gender awareness and the implications of being a woman on deployment that the game does not fall prey to essentialism, stereotypes, or tokenism. This is understandable a very difficult challenge in a game prototype that has a relatively short time in terms of play-through to convey such situations.

*Representation of Soft Skills*

**[Values: Freedom From Bias; Trust]**

Practically, the GAP game cannot encapsulate all possible aspects of a particular soft skill - for example, good communication is tied to non-verbal behaviours, listening, empathy, perspective taking, tone, audience awareness, and so on – and further to this, the design of the game can only incorporate so many aspects of these skills into game play, and there are practical limits to what the game can simulate in terms of the nuances of human interaction. The design of the game has given due consideration to the aspects of each soft skill that it can optimally represent and serve within the context of the game environment (see Deliverable 4.2).

Ultimately, the GAP game is a training tool and therefore it must remain critical of how the skills that underpin its learning objectives are being represented. If several core elements of a soft skill like communication are stripped away, it becomes reasonable to question whether the soft skill itself is being fully represented within the game. Equally, this line of thinking should extend to the measurement of soft skills during pre- and post- testing; the metrics used should be calibrated to how the skills are represented in the game and curriculum.

*Performance Metrics*

**[Values: Trust; Freedom From Bias; Accountability]**

Fundamentally, it is critical that the learning objectives can be accurately measured and that the in-game metrics as well as the pre- and post-session metrics are both valid and reliable. Ethically, this is crucial for ensuring that the feedback that is given to players is, firstly, valid and, secondly, a genuine reflection of the training they have undergone.

*Privacy of User Data*

**[Values: Privacy; Human Welfare; Trust]**

A key issue concerns the protection of user data both within the game and without. Firstly, the game design should ensure that a player's performance is kept confidential and cannot be identified by other users or those with access to the game's data. This is not envisaged to be a major issue as there are many reliable methods of protecting and anonymising users within the system. One simple way to ensure this could be to issue each player with a unique number string as their player ID, which the player is instructed not to share. This ensures that trainers and other players cannot identify other individual players.

A second issue regarding the privacy of user data concerns the issue of performance measurement. At present, it is proposed that performance data from the game must be submitted to an external programme for the purposes of scoring. This creates an issue in that there must be additional safeguards in place, such as data encryption, to ensure that the data is protected.

*Player Performance*

**[Values: Human Welfare; Accountability]**

The training solutions should also consider how performance results will be managed. Firstly, the training materials and performance measures need to identify what standard of results constitutes good or poor performance. Good performance will lead to the certification of soft skills competency but training should also address what poor performance will signify for the user. It should establish what this would mean in terms of the completion of pre-deployment training and what are the protocols for addressing this shortcoming.

Perhaps most importantly, the GAP solution should consider the personal implications of poor performance. Soft skills are distinct from operational training in that they also extend into the personal sphere. Poor performance in an operational setting can be supplemented with additional training or additional practice. In contrast, labelling a student as a poor communicator or as someone who has difficulty cooperating is not necessarily confined to their working life, and may carry a greater personal cost. While the training must be mindful of learning objectives, training delivery, and the measurement of learning, it also needs to be aware of how a students' capabilities and skill sets are being conveyed to them.

### *Dual-Use*

### **[Values: Accountability]**

Dual-use refers to technologies, tools, or scientific research that has a legal and legitimate application but that can also be appropriated for a nefarious purpose or in such a way that poses a risk to the public. Often the term applies to products and ideas that begin in the civilian-domain which are then converted to a military application. The term dual-use also extends to research, the outputs of which can also be misapplied. In the case of GAP, there are two key vulnerabilities: the knowledge generated within the project and, prospectively, the GAP gaming tool itself which, if tailored to the knowledge and requirements of a live mission in the future, could pose a risk of misuse or misappropriation by external users.

To combat dual-use, first, it is important that the cooperation of all possible stakeholders for the GAP solutions is sought. Here, the civilian perspective is particularly important to ensure that the tools being designed are not only being shaped by social, ethical, organisational, and political values of the military mind-set alone.

The issue of dual-use is a social responsibility and should be consistently monitored over the lifespan of a research project. Kuhlau et al (2008) set out five means by which researchers can identify harm arising from their research:

- through their professional responsibility;
- through their professional capacity and ability;
- reasonably foreseeing potential harm;
- preventing harm that is proportionally greater than the perceived benefits;
- preventing harm that can be avoided through alternative means.

# 6. Concept Assessment and Evaluation Framework

## 6.1 Method for Evaluation

The primary evaluation method for the GAP game will be cooperative evaluation. Cooperative evaluation is a design evaluation methodology that emphasises the integration of end-users' perspective, preferences, and needs. It is a form of iterative evaluation that gathers feedback from the target end-user group and uses this to improve and inform system prototype design to ensure that subsequent iterations are more closely aligned to end-user needs and expectations (Monk, Wright, Haber & Davenport, 1993).

The method for conducting cooperative evaluation is quite intuitive: a test-user who is representative of the target end-user group is paired with an observer and given a task list that takes them through the main functionalities and features of the system. The test-user is then expected to navigate their way through the unfamiliar system, as they do so they are asked to voice aloud what they experience and their expectations for the system. The observer then records any problems, whether minor or substantial, that the test-user encounters or any verbal or behavioural feedback that they provide. In the case of the GAP game, a test-user may be asked to log on, set up an account, or follow the gameplay instructions. They may in turn provide feedback on the functionalities themselves, or their expectations for the style or affordances of the game environment. The resulting data is then used to identify usability issues within the system that can be addressed by subsequent iterations of the game or flagged as issues for future development.

The context for cooperative evaluation testing should resemble, as closely as possible, the envisaged context for real-world use. It is important that the evaluation process takes heed the context for the tool and how the tool will sit within this environment as this can highlight additional considerations for design and development including space, ownership, maintenance, running costs, equipment and material requirements, among others. At present, the use of the game is assumed to be classroom-based. However, end-users will be consulted ahead of the evaluation sessions to ensure that an appropriate location is chosen.

Bevan (1993) notes that, because cooperative evaluation relies on a pre-determined task list, test-users are artificially guided through the system as opposed to exploring the system naturally and of their own accord. The guidance of the task list and the presence of an observer may bias how the user would naturally engage with the system. And further to this, the observer's level of involvement with the system design may incline them towards providing solutions or prompts to the test-user or to seek out favourable evaluations. To mitigate this, all evaluation observers will be instructed to refrain from giving the test-users hints or guidance on how to execute the tasks. Test-users will be instructed to approach the tasks based on their own intuitions and expectations for the system, and reminded that the successful accomplishment of the task is not the principal aim of the exercise but rather that it is their expectations and method of approach that is of interest.

## 7.3 Schedule for evaluation

Continued evaluations of the concepts will be occur in the coming weeks until there is a first interactive prototype available for users to get direct experience of. This evaluation schedule will follow that of the development process and will take place in WP4 and will run between M20 and M27.

A detailed evaluation framework is presented in Appendix 1 at the end of this document to guide the evaluation process with detailed questions and heuristics about the sociotechnical suitability of the GAP platform as well as the specific human factors issues.

# 7. Conclusions and Future Steps

Task 5.2 and this associated deliverable is an initial exploration and evaluation of the concept of the GAP gaming platform in order to support the design process in an iterative and user-centred manner. This process will continue in line with the evolving platform in WP4 and will continue as per the schedule of evaluations in T5.3

We have built our initial picture on the outputs of WP3 user consultation as well as user feedback of the initial concept. Further evidence gathered from scheduled interactions with users will complete more fully the concept of operations picture and overall sociotechnical framework.

We have also provided guidance as to the ethical design of the GAP platform with a view to flagging and avoiding potential problems associated with the gameplay. These will be reviewed constantly throughout the evaluation process.

# References

**References**

Albrechtslund, A. (2007). Ethics and technology design. *Ethics and Information Technology*, Vol. 9(1), pp. 63-72.

Allen, R., Rosén, F. & Tarp, K. (2016). 'Preparing for Protection of Civilians in United Nations Peacekeeping Operations.' Available at: http://pure.diis.dk/ws/files/731173/DIIS_Report_2016_10_Web.pdf Last Accessed: 29 November 2017.

Bevan, M. (2011). The Hero Stuff' and the 'Softer Side of Things': Exploring Masculinities in Gendered Police Reform in Timor-Leste. MA Thesis, Victoria University. Available at: http://researcharchive.vuw.ac.nz/xmlui/bitstream/handle/10063/1905/thesis.pdf?sequence=2 Last Accessed: 29 November 2017

Bossong, R. (2012). EU civilian crisis management and organisational learning, *Economics of Security,* (Working Paper at Berlin EUSECON, 2012). Available at: https://www.diw.de/documents/publikationen/73/diw_01.c.399451.de/diw_econsec0062.pdf Last Accessed: 29 November 2017.

Butler, J (2006). Gender Trouble: feminism and the Subversion of Identity. New York: Routledge

Council of the European Union (2017). EU Policy on Training for CSDP. Available at: http://data.consilium.europa.eu/doc/document/ST-7838-2017-INIT/en/pdf Last Accessed on: 29 November 2017.

Cummings, M. L. (2006). Integrating ethics in design through the value-sensitive design approach. *Science and Engineering Ethics*, Vol. 12(4), pp. 701-715.

Cutillo, A. (2013). *Deploying the Best: Enhancing Training for United Nations Peacekeepers.* New York: International Peace Institute.

Department of Homeland Security (2008). DHS Acquisition Instruction/Guidebook #102-01-001: Appendix F, Interim Version 1.9. DHS: United States.

European Council, (2015). *Implementation of UNSCR 1325 in the context of the ESDP.* Available at: http://register.consilium.europa.eu/doc/srv?l=EN&f=ST%2015782%202008%20REV%203 Last Accessed : 29 November 2017.

Fairley, R.E. & Thayer, R.H. (1997). The concept of operations: The bridge from operational requirements to technical specifications. *Annals of Software Engineering,* Vol. 3(1), pp. 417-432.

Fallows, J. (2005). "Why Iraq has No Army." *The Atlantic Monthly*, Vol: December 2017, pp. 60-77.

Friedman, B. (1997). *Human Values and the Design of Computer Technology.* Cambridge University Press, New York, NY

Friedman, B., & Kahn P.H. (2003). Human values, ethics, and design (pp. 1177-1201). In J. Jacko & A. Sears (Eds.) *The Human-Computer Interaction Handbook*. Mahwah, NJ: Lawrence Erlbaum.

Gentile, G. (2009). A Strategy of Tactics: Population-centric COIN and the Army. Available at: www.public.navy.mil/usff/Documents/gentile.pdf p. 5 Last Accessed: 29 November 2017.

Hummel, W. & Pietz. T. (2015). Partnering for Peace: Lessons and Next Steps for EU-UN

Cooperation on Peace Operations. ZIF Operations Germany. Available at: http://www.zifberlin.org/fileadmin/uploads/analyse/dokumente/veroeffentlichungen/ZIF_Policy_Br iefing_Hummel_Pietz_EU-UN-Partnerships_ENG_Feb2015.pdf Last Accessed on: 29 November 2017

Institute for Electrical and Electronics Engineers, IEEE Guide for Information Technology (2007). System Definition — Concept of Operations (ConOps) Document, *Software Engineering Standards Committee of the IEEE Computer Society.* IEEE: New York.

International Association of Peacekeeper Training Centres, (2012). Effective Peacekeeping and Peacebuilding: Challenges for the Training Community. Available at: http://www.iaptc.org/wp-content/themes/brightpage/iaptc2012conferencereport_web-%20final.pdf Last Accessed: 29 November 2017.

Jennings, K. M. (2014). Service, Sex, and Security: Gendered Peacekeeping Economies and the Democratic Republic of the Congo. *Security Dialogue*, Vol. 45(4), pp. 31-30.

Kronsell, A. (2016). Sexed Bodies and Military Masculinities: Gender Path Dependence in EU's Common Security and Defense Policy. *Men and Masculinities*, Vol. 19(3), pp. 311-336.

Lederach, J.P., Neufeldt, R. & Culbertson, H. (2007). *Reflective Peacebuilding: A Planning, Monitoring and Learning Toolkit*. Notre Dame, IN: Joan B Kroc Institute for International Peace Studies.

Mäki-Rahkola, A., & Myrttinen, H. (2014). Reliable Professionals, Sensitive Dads and Tough Fighters: A Critical Look at Performances and Discourses of Finnish Peacekeeper Masculinities. *International Feminist Journal of Politics*, Vol. *16*(3), pp. 470-489.

Miller, L. (1997). Not just weapon of the weak: Gender harassment as a form of protest for

army men. *Social Psychology Quarterly*, Vol. 60(1), pp. 32–51.

Muller, M. J., & Kuhn, S. (1993). Participatory design. *Communications of the ACM*, Vol. *36*(6), pp. 24-28.

Pruitt, L.J. (2016). *The Women in Blue Helmets: Gender, Policing, and the UN's First All-Female Peacekeeping Unit.* University of California Press: California.

Robles, M. M. (2012). Executive perceptions of the top 10 soft skills needed in today's workplace. *Business Communication Quarterly*, Vol: *75*(4), pp. 453-465.

Schulz, B. (2008). The importance of soft skills: Education beyond academic knowledge. *Journal of Language and Communication,* Vol. 2(1), pp. 146-154.

Shepherd, L.J. (2011). Sex, Security and Superhero(in)es: From 1325 to 1820 and Beyond. *International Feminist Journal of Politics,* Vol. 13(4), pp. 504-521.

Tyler, T.R. (2003). Procedural justice, legitimacy, and the effective rule of law. *Crime and Justice*, Vol. 30, pp. 283-357.

United Nations (2008). *United Nations Peacekeeping Operations Principles and Guidelines ("the Capstone Doctrine").* Available at: **https://www.un.org/ruleoflaw/blog/document/united-nations-peacekeeping-operations-principles-and-guidelines-the-capstone-doctrine/** Last Accessed: 29 November 2017.

United Nations (1990). *The Blue Helmets: A Review of United Nations Peacekeeping.* New York: United Nations.

United Nations (2015). Report of the High Level Independent Panel on United Nations Peace Operations. Available at: http://peaceoperationsreview.org/wp-content/uploads/2015/08/HIPPO_Report_1_June_2015.pdf Last Accessed on: 29 November 2017.

UN Peacekeeping Resource Hub (2017). Peacekeeping Training. Available at: http://research.un.org/en/peacekeeping-community/Training Last Accessed: 29 November 2017.

Verbeek, P. P. (2008). Morality in design: Design ethics and the morality of technological artifacts (pp. 91-103). In P.E. Vermas, P. Kroes, A. Light, & S.A. Moore (Eds.) *Philosophy and Design*. London: Springer.

Winslow, D. (2010). Gender and military sociology. Swedish National Defence College. Department of Leadership and Management. Available at: https://www.fhs.se/Documents/Externwebben/omfhs/Organisation/ILM/Sociologi%20och%20ledarskap/Dokument/Gender%20and%20Military%20Sociology_webb.pdf Last Accessed on: 29 November 2017.

Woodhouse, T., & Duffey, T. (2008). Culture, Conflict Resolution and Peacekeeping. In H. Langholtz (Ed.) *Peacekeeping and International Conflict Resolution.* Washington, DC: Peace Operations Training Institute.

# Appendix 1 Evaluation framework for GAP sociotechnical assessment

The evaluation framework here which is associated with the CONOPS process and based on the SCOPE framework (Supply, Context, Organisation, Personnel and Environment) The overall approach provides a way of understanding some of the complexities of change processes and to support better design and evaluation of change initiatives. The proposed framework comprises of four main steps needed for any change initiative: **Identifying Needs & Objectives, Plan & Prepare, Execute,** and **Review & Evaluate**. Importantly, these are not stand alone steps. Each step is iterative and incremental and so is updated frequently.
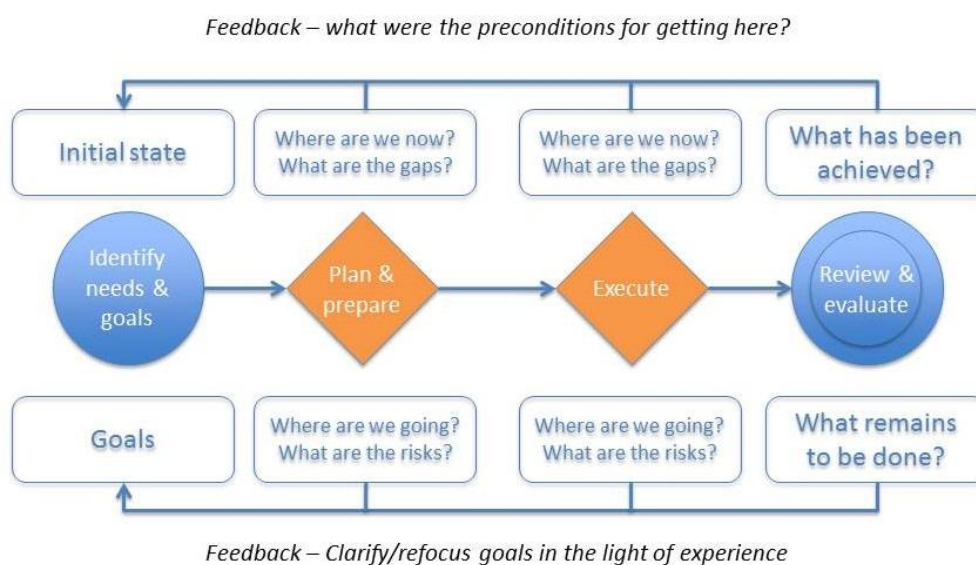


The middle two steps, Plan & Prepare and Execute, are comprised of three interlocking, interpenetrated sub-systems - the functional process logic, the social cohesion logic and the role of knowledge & information cycles mediating between these.
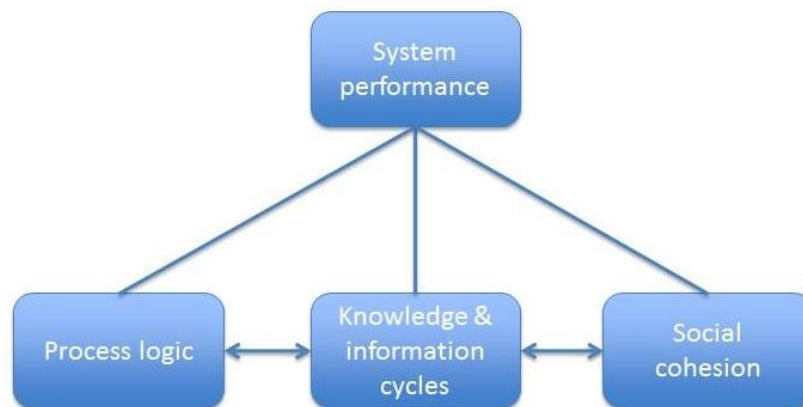
The immediate objective is to build a dossier of the initiative that enables us to answer the major section questions with a reasonable degree of confidence, so that an overall evaluation of the status of the initiative is clear, and thus to be sure that recommendations, where appropriate, can be made which can alter the dynamic of change for the better. This will lead to a further revision of the theory and model where necessary. Each dossier will conclude at some end point of each change initiative when relative success or failure can be assessed. At that point the relative contribution of each element can be assessed qualitatively. With the accumulation of evidence from many change initiatives, a quantitative evaluation of the predictive strength of the theory can be designed.

**Identifying Needs and Objectives**

This section of the analysis is intended to help identify the needs of the change initiative by questioning the integrity of the **Initial State** of the system and to identify and question the **Objectives** of the newly proposed initiative.

*Initial State*

**Description**

**Evaluation Questions**

What are the current deficiencies of the existing operational processes/structures for curriculum management?

Do the deficiencies threaten the sustainability of the game play system?

If change does not occur, are the risks of not changing understood (strategic picture)?

Are there divergent interests in the system that may block any change processes?

**Risk**

What is the likely impact of the *continuing* state of the initiative i.e. with no change? Express the likelihood of each of these outcomes (table below) in percentages (ie adding up to 100).

| | |
|---|---|
| No significant adverse impact: | |
| Continuing effect on quality or delay: | |
| Serious deviation from plan: | |
| **Total:** | 100% |

**Impact**

Describe the most serious credible outcome that could result from this state of affairs:

**Recommendations**

What changes are to be proposed?

***Objectives***

**Description**

**Evaluation Questions**

What are the objectives proposed for the new initiative?

Do these objectives represent credible targets that improve system sustainability?

Are these objectives clear, well defined and attainable?

Are these objectives shared amongst stakeholders?

What points of contradiction exist between stakeholder objectives?

**Risk**

What is the likely impact of implementing these objectives on the current system? Express the likelihood of each of these outcomes (table below) in percentages (ie adding up to 100).

| | |
|---|---|
| No significant adverse impact: | |
| Continuing effect on quality or delay: | |
| Serious deviation from plan: | |
| **Total:** | 100% |

**Impact**

Describe the most serious credible outcome that could result from this state of affairs:

**Recommendations**

What changes are proposed?

## Planning and Preparation

The Planning and Preparation of the initiative is questioned under three main processes (Operational & Managerial Processes, Information & Knowledge Cycles, Team Structures & Trust) and are questioned as follows:

### Operational & Managerial Processes

Each relevant decision point in the overall process is enquired under Operational Processes and Managerial Processes in terms of Resources, Tasks and Coordination and the decision point is assessed for its risk.

| Operational Process | Managerial Process |
|---|---|
| 1. Resources | 1. Resources |
| 2. Tasks | 2. Tasks |
| 3. Coordination | 3. Coordination |
| 4. Risk Assessment | 4. Risk Assessment |

Once this is completed for each relevant decision point, an overall process analysis made for Operational Processes and for Managerial Processes. These are analysed in terms of Process Criticality and Process Vulnerability.. A final overall risk assessment it then made.

### Information & Knowledge Cycles

An enquiry is made in terms of the Information Cycle and the Knowledge Cycle separately. Following this enquiry an overall risk assessment is made.

### Team Structures & Trust

An enquiry is made in terms of Team Structure and Trust separately. Following this enquiry an overall risk assessment is made.

**Operational & Managerial Processes**

*Operational Processes*

Map and describe the operational processes in relation to the newly proposed process for each required decision point:

**Decision Point: n**

### 1. Overall

Can the Operational Processes deliver the performance to satisfy the objectives? Answer this in reference to the information you provide in Resources, Tasks, Coordination and the Risk Assessment below.

### 2. Resources

**Physical Materials** (i.e. Plant, Equipment, Tools, Parts)

How available are these materials?

Do contextual factors (i.e. Personal, Organisation, or the Environment) influence the availability of these resources?

How predictable is demand for these resources?

How well does availability match demand for these resources?

If you have the resource is the quality adequate for performing the task?

**People** i.e. those with the required skills and abilities

How available are these people?

Do contextual factors (i.e. Personal, Organisation, or the Environment) influence the availability of these people?

How predictable is demand for these people?

How well does availability match demand for these people?

If you have the people is the quality adequate for performing the task?

**Information** i.e. the information required to perform Tasks

How available are these materials?

Do contextual factors (i.e. Personal, Organisation, or the Environment) influence the availability of these resources?

How predictable is demand for these resources?

How well does availability match demand for these resources?

If you have the resource is the quality adequate for performing the task?

### 3. Tasks

How reliably does the task deliver its outputs?  (normative or average?)

How vulnerable is the performance of each task to:

Internal task dynamics? Workload? Other?:

Do contextual factors (i.e. Personal (Stress? Fatigue?), Organisation, or the Environment) influence the vulnerability of each task?

What is the qualitative effect of this vulnerability on the task outputs?

### 4. Coordination

How effective is each coordination action in managing dependencies between tasks ?

How vulnerable is coordination to:

Intrinsic factors? Distraction? Complexity? Non-availability? Other?:

Do contextual factors (i.e. Personal, Organisation, or the Environment) influence the vulnerability of each task?

What is the qualitative effect of this vulnerability on the co-ordination action?

### 5. Operational Processes Risk Assessment

**Risk**

What is the likely impact on the next phase of the process of this state of affairs continuing ? Express the likelihood of each of these outcomes (table below) in percentages (ie adding up to 100).

| | |
|---|---|
| No significant adverse impact: | |
| Continuing effect on quality or delay: | |
| Serious deviation from plan: | |
| **Total:** | 100% |

**Impact**

Describe the most serious credible outcome that could result from this state of affairs:

**Recommendations**

What changes would you propose?

***Operational Process Outcomes***

Having analysed all the operational process decision points the following is to be completed:

**Process Criticality**

Where in the process are links most critical? (i.e. What decision points are most critical because they have the greatest ?)

Where are there opportunities to recover?

**Consolidated assessment of risk**

**Process Vulnerability**

Where in the process are tasks most vulnerable? (i.e. Which decision points are most vulnerable?)

Where in the process is there shortfall in people resources?

Where in the process is there a shortfall in information resources?

Where in the process is there a shortfall in material resources? )

**Overall Operational Risk Assessment**

**Risk**

What is the likely impact of relationship between all these decision points on the overall outcome of the process? Express the likelihood of each of these outcomes (table below) in percentages (ie adding up to 100).

| | |
|---|---|
| No significant adverse impact: | |
| Continuing effect on quality or delay: | |
| Serious deviation from plan: | |
| **Total:** | 100% |

**Impact**

Describe the most serious credible outcome that could result from this state of affairs:

**Recommendations**

What changes to be proposed?

*Management Processes*

Map and describe the management processes in relation to the newly proposed process for each required decision point:

**Decision Point: n**

### 1. Overall

Can the management processes enable operational processes in achieving the objectives? Answer this in reference to the information you provide in Resources, Tasks, Coordination and the Risk Assessment below.

### 2. Resources

**Physical Materials** (i.e. Plant, Equipment, Tools, Parts)

How available are these materials?

Do contextual factors (i.e. Personal, Organisation, or the Environment) influence the availability of these resources?

How predictable is demand for these resources?

How well does availability match demand for these resources?

If you have the resource is the quality adequate for performing the task?

**People** i.e. those with the required skills and abilities

How available are these people?

Do contextual factors (i.e. Personal, Organisation, or the Environment) influence the availability of these people?

How predictable is demand for these people?

How well does availability match demand for these people?

If you have the people is the quality adequate for performing the task?

**Information** i.e. the information required to perform Tasks

How available are these materials?

Do contextual factors (i.e. Personal, Organisation, or the Environment) influence the availability of these resources?

How predictable is demand for these resources?

How well does availability match demand for these resources?

If you have the resource is the quality adequate for performing the task?

### 3. Tasks

How reliably does the task deliver its outputs?  (normative or average?)

How vulnerable is the performance of each task to:

Internal task dynamics? Workload? Other?:

Do contextual factors (i.e. Personal (Stress? Fatigue?), Organisation, or the Environment) influence the vulnerability of each task?

What is the qualitative effect of this vulnerability on the task outputs?

### 4. Coordination

How effective is each coordination action in managing dependencies between tasks ?

How vulnerable is coordination to:

Intrinsic factors? Distraction? Complexity? Non-availability? Other?:

Do contextual factors (i.e. Personal, Organisation, or the Environment) influence the vulnerability of each task?

What is the qualitative effect of this vulnerability on the co-ordination action?

### 5. Operational Processes Risk Assessment

**Risk**

What is the likely impact on the next phase of the process of this state of affairs continuing ? Express the likelihood of each of these outcomes (table below) in percentages (ie adding up to 100).

| | |
|---|---|
| No significant adverse impact: | |
| Continuing effect on quality or delay: | |
| Serious deviation from plan: | |
| **Total:** | 100% |

**Impact**

Describe the most serious credible outcome that could result from this state of affairs:

**Recommendations**

What changes are to be proposed?

*Game Process Outcomes*

Having analysed all the operational process decision points the following is to be addressed:

**Process Criticality**

Where in the process are links most critical? (i.e. What decision points are most critical because they have the greatest ?)

Where are there opportunities to recover?

**Consolidated assessment of risk**

**Process Vulnerability**

Where in the process are tasks most vulnerable? (i.e. Which decision points are most vulnerable?)

Where in the process is there shortfall in people resources?

Where in the process is there a shortfall in information resources?

Where in the process is there a shortfall in material resources? )

**Overall Managerial Risk Assessment**

**Risk**

What is the likely impact of relationship between all these decision points on the overall outcome of the process? Express the likelihood of each of these outcomes (table below) in percentages (ie adding up to 100).

| | |
|---|---|
| No significant adverse impact: | |
| Continuing effect on quality or delay: | |
| Serious deviation from plan: | |
| **Total:** | 100% |

**Impact**

Describe the most serious credible outcome that could result from this state of affairs:

**Recommendations**

What changes are to be proposed?

### *Information & Knowledge Cycles*

### Information cycle

Map and describe the information flow in relation to the newly proposed process:

### Overall

Will the flow of data provide knowledge about the activity of the system and its situation to 1. Support operational action? 2. Support system review and evaluation? Answer in relation to the information you provide below.

### Description

### Evaluation Questions

Map and describe the information flow in relation to the newly proposed process:

How well do performance indicators validly and accurately represent the aims and objectives of the process?

Are targets clear and well understood? Are they related meaningfully to process performance?

Do they relate to some objectives more clearly than others, potentially distorting performance?

How well does data give valid current information about what the system is doing? (refer to the information support to the process)

Does feedback enable self-monitoring and improvement of performance?

Connectivity

Meaningfulness / validity

Quality of information going into the process

### Knowledge cycle

Map and describe the knowledge flow in relation to the newly proposed process:

### Overall

Is the system knowledge actively developed, shared and validated to 1. Support operational action, 2. Support system design and change? Answer in relation to the information you provide below.

### Description

### Evaluation Questions

Map and describe the knowledge flow in relation to the newly proposed process:

Have all the competencies needed been identified?

What has been the impact of training and learning?

Are all relevant competencies available as required?

Do the professional knowledge or values of different groups make it difficult to work together effectively?

How far is there a fully shared understanding of the future process amongst all participants?

How far has people's operational knowledge been used to design the future process?

How far is people's operational knowledge used to solve problems and improve the process?

How far are the values of this initiative not shared by all involved?

How effective is the active engagement of people's knowledge across the process?

**Knowledge & Information Cycle Risk Assessment**

**Risk**

What is the likely impact of the state of knowledge and information on the ability to design or change a future system? Express the likelihood of each of these outcomes (table below) in percentages (ie adding up to 100).

| | |
|---|---|
| No significant adverse impact: | |
| Continuing effect on quality or delay: | |
| Serious deviation from plan: | |
| **Total:** | 100% |

**Impact**

Describe the most serious credible outcome that could result from this state of affairs:

**Recommendations**

What changes are to be proposed?

***Team Structures & Trust***

**Team Structure**

Map and describe the team elements in relation to the newly proposed process:

**Overall**

Are all relevant stakeholders involved in a team structure that enables effective decision and action? Answer in relation to the information you provide below.

**Description**

**Evaluation Questions**

**Participation:**

Are all the different organisational stakeholders or interest groups involved?

Are all the different departmental stakeholders or interest groups involved?

Are there any groups not involved in the process that should be?

**Boundaries**

How many organisational/departmental boundaries are crossed in the "team"?

**Accountability**

Is there a structured system of accountability within the "team"?

Is there effective accountability between the team and external powers?

**Roles**

How well are the different roles represented in the "team"? (i.e. Project Leader, Senior Management, Middle/front line management, those affected by change, technology developers, external advisors)

Are all roles clearly understood and effectively engaged?

**Incentives**

Do the incentives favour collaboration or competition between partners?

**Experience**

Is this group will experienced in working togethers?

Considering the above questions, on balance how well structured/integrated is the team?

**Trust**

Map and describe the trust elements in relation to the newly proposed process:

**Overall**

Does the level of mutual trust support collaboration to achieve the objectives? Answer in relation to the information you provide below.

**Description**

**Evaluation Questions**

Are all the objectives aligned and supporting the objectives of the initiative?

Are there any topics that cannot be spoken about openly (for any participant)?

Is there a clear way of working understood by all? (e.g. are there in-groups and out-groups unequally involved in the process?)

Does time pressure affect the ability to communicate effectively?

Is there a history of mistrust in the relationships of this group?

Considering each of these dimensions, to what extent do they favour the development of trust?


**Team Structure & Trust Risk Assessment**


**Risk**

What is the likely impact of the quality of the social relations on the sustainability of the new process? Express the likelihood of each of these outcomes (table below) in percentages (ie adding up to 100).

| | |
|---|---|
| No significant adverse impact: | |
| Continuing effect on quality or delay: | |
| Serious deviation from plan: | |
| **Total:** | 100% |

**Impact**

Describe the most serious credible outcome that could result from this state of affairs:

**Recommendations**

What changes to be proposed?