D5.1 – TRAINING REQUIREMENTS AND KEY SCENARIOS OF APPLICATION

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List of Abbreviations

ACI   Airport Council International
ANSF  Authority for National Safety in the Railway domain
ASTP  Aviation Security Training Package
CCTV  Closed Circuit Television
CSI   Common Safety and Security Indicators
EC    European Commission
EU    European Union
ERA   European Railway Agency
ERTMS European Rail Traffic Management System
ESG   External Stakeholder Group
KPI   Key Performance Indicator
IATA  International Air Transport Association
ICAO  International Civil Aviation Organisation
ISM   International Safety Management
ISPS  International Ship and Port Security Code
NTS   Non-technical skill
NTV   Nuovo Trasporto Viaggiatori
PIDS  Perimeter Intrusion Detection System
STCW  Standard of Training Certification and Watch keeping
UIC   Union International Chemin de Fer
WP    Work Package
WWA   World Wide Academy
Executive Summary

The present deliverable reports on the training requirements and key scenarios identified in Work Package (WP) 5 of the IMPACT project. This project aims to provide an integrated model for cross-cultural emergency prevention and management in transport hubs. In order to reach this goal, the project will produce a cross-cultural and psycho-social crowd behaviour theoretical framework in the different transport hub domains (WP1). The development of this theoretical framework (Task 1.3) together with the data collection activities and fieldwork on transport hubs (Task 1.2) will support the design of the agent based computational model (WP2). This latter will be used during the project as both simulation and validation tool. The theoretical framework together with the agent based computational model represent the main inputs for the development of the following IMPACT supporting measures:

- Cultural risk assessment (WP3)
- Guideline and example for cultural based emergency (WP4)
- Cultural based Security Training (WP5)

In particular the cultural based security training aims to allow transport hubs operators to take cultural differences into account in preventing and managing emergencies in transport hubs in which many threats/hazards may arise.

This document identifies the training requirements for the IMPACT cultural-based security training course. The IMPACT training package is an operator-centred training, this means that the training requirements are based not just on input from the literature review (WP1.1), but also on the interviews and field work conducted in WP1.2 with potential users of the training.

The following activities were carried out to identify the training requirements:

- **Review of the Emergency Prevention and Management Training courses** in the different transport modes. This activity identified existing gaps in current security training packages (section 2);
- **Analysis of data collection activities**. This activity reviewed the qualitative data collected in WP1.1, namely 1st External Stakeholder Group meeting (which collected data from expert stakeholders at different organizational levels), and the qualitative interviews with transport hubs operators. This phase allowed the identification of the relevant training needs (section 3).

The outcomes of the data collection activities have been analyzed and translated into requirements for the training package to be developed in IMPACT - D5.2 (see section 6). On the whole a preliminary list of eight training requirements arouses from the empirical activities. They include guidelines and suggestions for the development of training formats, training materials and training contents. According to this list the training should:

1- Focus on multiple actors situations taking into account cultural-specific relevant aspects that can occur in real situations (e.g. time pressure, passenger behaviours and attitudes, internal state of the front-end operators, stress, cooperation with colleagues), in order to improve the preparedness to respond to emergency situations.
2- Provide trainees a methodology to assess and manage risks related to cultural aspects.

3- Consider relevant aspects that can occur when managing unruly passengers or unusual situations, providing example from real experiences.

4- Present key advices to foster an effective communication in real operative situations. It should also provide trainees with practical examples of common misunderstandings and strategies to avoid communication bias.

5- Allow trainees to get a general understanding of cultural characteristics, differences and their impact on individual and crowd behaviour.

6- Present examples of passengers’ critical behaviours based on real situations and experiences. It should also provide trainees with examples and strategies to manage multicultural groups.

7- Present practical activities such as simulations, group exercises, gaming based on real situations, where trainees are allowed to practice their skills.

8- Take into account the limited resources that the relevant transport organisations can allocate to it and develop the most suitable format and duration for the delivery.

These training requirements provide useful information that might be used to shape and to steer the development of contents and training materials.

Furthermore, to support the next phases of the project, the last part of the document maps the training requirements to: (i) the focus areas that came out from the interviews, and (ii) the training goals that need to be further refined during the development of the training activities (to be undertaken in in D3.2 and D5.2).

In order to reach the above-mentioned mapping, other two activities were performed: summary of the literature review on cross-cultural and crowd behavior (see section 4), and the description of the IMPACT scenarios on crisis and emergency management (see section 5).

This mapping is a starting point for the definition of the training structure, contents, material, format and target. It represents a preliminary attempt to merge the focus areas with a potential list of training goals, such as:

- **Decision making/task management:**
  - Setting priorities
  - Delegating
  - Improve task allocation and scheduling
  - Deal with uncertain situations
  - Coordinate with colleagues/other organisations
  - Anticipate potential risky situations
  - Develop a sense of typicality (develop patterns and experiences into prototypes in order to judge trigger events as ‘typical’ or ‘emergency’)

- **Interpersonal skills:**
  - Deal with people (understand the reason why a person is aggressive and start from this to solve the situation)
  - Be assertive
  - Manage different Cognitive capacities, Stress and Panic
  - Develop Self-confidence knowledge of one's own desires, strengths, weaknesses, and emotional stability
**Communication skills:**
- Develop knowledge of basic words in different languages
- Recognise and use hand-gesture/non-verbal communication
- Improve information sharing, effective communication with co-workers from different culture/age/sex
- Improve effective standard communication strategies in emergency and evacuation

**Intercultural competences:**
- Deal with people of different culture/age/sex.
- Gain knowledge about other cultures and other people's behaviours (social, political economical differences, attitudes, habits, believes).
- Improve the management and coordination with staff team with different culture/age/sex.

**Multicultural crowd management:**
- Understand the main needs that can draw multicultural crowd during emergency.
- Manage and monitor collective movements of multicultural crowd (be aware about social dynamics, individual characteristics that may influence the way crowd members behave).
- Manage collective movements and composition of crowd (e.g. density, group formation, direction, speed).

Based on the work conducted in Task 5.1, in Task 5.2 the training design process will be carried out aiming at designing training activities, paying particular attention to the definition of the most appropriate educational formats to the delivery of the course material.
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1 Introduction

The present deliverable reports an analysis of the training requirements and key scenarios defined in IMPACT Work Package 5 (WP), task 5.1 “Setting training goals and define requirements and guidelines for a cultural-based security training”. IMPACT is an EU funded project whose objective is to explore, analyse and assess the link between cultural features and disaster management in different transport hubs. In this perspective culture could be seen as a key factor which influences collective behaviours during crisis and emergency management. In order to ensure that transport hubs and operators are better prepared to respond and recover from emergencies, one of the main output of the project consists of the design and development of a cultural-based security training package.

The development of such a package is the objective of IMPACT WP5. The cultural-based security training package will be designed to support transport hubs operators and first responders to be aware of cultural differences and their influence on crowd behaviour during emergency situations in multicultural sites. In order to define such a package, WP 5 will:

1. Define training requirements within the different groups of stakeholders and decision makers and set the requirements and the guidelines for implementation of training programs for different scenarios of application;
2. Design a cultural-based integrated multi-media training package and develop working prototypes of the various modules together with training materials and tutorials;
3. Deliver pilot training courses to the end users involved in the project and to the cooperating security agencies.

The present deliverable “Requirements and Key scenarios” addresses objective 1.

In order to facilitate the readability of the document, a definition of training requirements, training needs and training gaps has been provided in the following table:

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<td>Difference between the content areas already covered by the current mandatory trainings and what the project aims to foster. They were derived through the review of the current mandatory training and compared with the main aims of the project and the needs reflecting the operational point of view.</td>
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<td>Training Requirements</td>
<td>Training requirements provide a comprehensive description of the intended purpose and the properties of the training package under development. They specify aspects such as what contents the IMPACT multicultural training package will deliver; how these will be delivered (i.e. which training format will be used); which supporting IT tool(s) and materials (e.g. emergency scenarios) will be used. Training requirements are one the main outcome of this deliverable. Their development is based on the training needs and gaps identified in the data collection activities (D1.2 currently in progress) conducted in the scope of WP1. Training requirements will inform the</td>
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development and implementation of the IMPACT cultural-based training package, which will occur in D3.2 and D5.2.

Furthermore, the following figure illustrates the different components of the IMPACT cultural based security training package. The package will be composed by different courses that will covered relevant topic areas.

**Figure 1: Structure of the IMPACT training package**

1.1 Objective

This document aims at defining the training requirements and key scenarios for the design and development of the IMPACT multi-cultural based security training package. This material will inform the following phases of WP3 and WP5: the definition of the culture-based security training package (Tasks 3.3 and 5.2); the definition of the supporting software environment (Task 5.3); and the initial evaluation of the training courses developed by means of pilot training sessions with actual security operators (Task 5.4).

1.2 Approach taken to achieve the objective and document structure

In order to derive the **training requirements**, the following activities were carried out:

- identification of the **training gaps** in current mandatory training across the different transport modes;
- identification of the **current training needs** from an operational perspective.

Two main activities were conducted in order to draw up a consolidated list of training requirements:

1. **Review of the most relevant Emergency Prevention and Management Training Packages** currently available in the different transport domains: aviation, railways and maritime (see sections 2.1, 2.2, 2.3). The review of the current training packages focuses on the description of the mandatory trainings according to current regulations. Furthermore, section 2.4 was used to identify the current **training gaps**
through the analysis of contents already covered and the type of skills and competences already dispensed by the current courses.

2. **Analysis of data collection activities** (see sections 3.1 and 3.2): 1st External Stakeholder Group meeting and the qualitative interviews conducted with transport hubs operators (e.g. train managers, airport safety managers, safety and security operators, ship security officers, railways police). The findings from the data collection activities were used to gather information about current training skills, knowledge and competencies. These findings contributed to the identification of the **training needs** of security staff which need to be addressed by the IMPACT project (see section 3.3).

Section 6 presents the final list of training requirements identified from these activities.

Furthermore, the following parallel activities were carried out:

- **Summary of the literature review on cross-cultural and crowd behaviours** (see section 4). The literature review on cross-cultural and crowd behaviour reported the relevant identified findings and settled the basis for the identification of the initial insights to define **new training contents** derived from cross-cultural and social psychology (see section 4.1).

- **Description of scenarios on crisis and emergency management** (see section 5) that can be used as real cases for the training practical activities that will be further defined in D5.2.

These four activities have been used to create a **final mapping** which will be used as initial support for the design of the training package in D5.2 (see section 6).

Figure 2 summarises the main activities which directly or indirectly contributed to the definition of the training requirements and the final mapping.
Figure 2: Summary of the main activities to define the training requirements

- **Review of Emergency Prevention & Management training**
  - Aviation Training
  - Maritime Training
  - Railways Training

- **Data Collection**
  - Analysis of outcomes from 1st ESG focus group
  - Analysis of outcomes from Front-end operators interviews

- **Literature Review**
  - Review of the literature review on cross cultural and crowd behaviour

- **Scenarios of application**
  - Description of key scenarios on emergencies and evacuations generated in the early phases of the project

**LIST OF TRAINING REQUIREMENTS**

**MAPPING OF TRAINING REQUIREMENTS**
2 Review of Emergency Prevention and Management training courses in all transport domains

The main objectives of the review of Emergency Prevention and Management training courses in all transport domains were the following:

- to obtain a comprehensive overview of the current regulatory framework for training in the different transport domains addressed by IMPACT;
- to obtain a general overview of the most relevant training courses currently delivered in all the transport modes (maritime, aviation, railways) including contents, target audience;
- to identify the relevant topics already covered by the training courses;
- to verify whether the multicultural aspects are somewhere covered in the training packages already available.

The following paragraphs summarise the Emergency Prevention and Management training packages available in the different transport domains. In sections 2.1, 2.2 and 2.3 a description of the relevant regulations as well as a short description of the most relevant security training packages in aviation, railways and maritime domains has been reported. The detailed description of the training packages and the training courses is available in Appendix A and Appendix B.

The remainder of this section reports on those packages that were selected as the most relevant ones for the project. The identification criteria were representativeness, comprehensiveness, and consistency with the aims of IMPACT.

Finally, section 2.4 summarises the main findings achieved from the review.

2.1 Review of training courses in the Aviation domain

2.1.1 Relevant regulations in the Aviation domain addressing Emergency Prevention and Management training

Aviation is a fairly regulated domain and also security aspects are taken into account at an International and European level. The International Civil Aviation Organisation (ICAO) Annex 17 [1] identified the security objectives for the member States with respect to the whole civil Aviation domain. ICAO gives minimum standards which every State Member must satisfy in order to be part of it (and to have the possibility to have flights on its own territory). This means that every State Member has to build a civil aviation structure, which has to satisfy the minimum standards required. The European Union Members created the EASA (European Aviation Safety Agency). EASA satisfies ICAO minimum standards, in order to increase the safety and security on aircraft and inside aerodromes. Regarding security, EC and EASA issued different regulations, which have been modified and amended. Nowadays the most important one are the REGULATION (EC) No 300/2008 [2] and the COMMISSION REGULATION (EU) No 185/2010 [3].

The EC No 300/2008 EC stated the Common rules in the field of Civil Aviation Security and the implementation of rules. For example, rule N.13 states that every Member State should draw up a national civil aviation security programme (NSP). Each State Member has to implement the NSP in order to check the level and quality of civil aviation security within its own territory, at the same time complying the EASA Regulation and Recommendations.
Airport Security Management is also considered in the ICAO Doc Volume III, about Airport Security Organization, Programme and Design Requirements and in the ECAC DOC 30 – Part II [4]. The following table reports the ICAO security objectives identified for State Members and the requirements included in ICAO Doc Volume III.

### ICAO security objectives

- Each Contracting State shall have as its primary objective the safety of passengers, crew, ground personnel and the general public in all matters related to safeguarding against acts of unlawful interference with civil aviation.
- Each Contracting State shall establish an organization and develop and implement regulations, practices and procedures to safeguard civil aviation against acts of unlawful interference taking into account the safety, regularity and efficiency of flights.
- Each Contracting State shall ensure that such an organization and such regulations, practices and procedures: a) Protect the safety of passengers, crew, ground personnel and the general public in all matters related to safeguarding against acts of unlawful interference with civil aviation; and b) Are capable of responding rapidly to meet any increased security threat.
- Each Contracting State shall ensure that the appropriate authority arranges for the supporting resources and facilities required by the aviation security services to be available at each airport serving civil aviation.
- Each Contracting State shall ensure that persons other than passengers, together with items carried, being granted access to security restricted areas are screened; however, if the principle of 100 per cent screening cannot be accomplished, other security controls, including but not limited to proportional screening, randomness and unpredictability, shall be applied in accordance with a risk assessment carried out by the relevant national authorities.

### ICAO Doc Volume III

1. The border between the landside and the airside is called the perimeter of the airport. The perimeter of a security restricted area may be defined by a natural boundary, by free-standing fences or walls, by the outer walls of a building or by divisions within it. Its function is to provide a degree of physical, psychological or legal deterrence to intrusion. Its effectiveness as a security measure may be enhanced by the deployment of perimeter intrusion detection systems (PIDS), a closed-circuit television (CCTV) system, security lighting and patrols by guard forces. All underground access (rivers, culverts for drainage or cables wider than 80 cm) should be closed and/or made accessible to an appropriate standard.
2. Airside development should (where appropriate) provide for the following:
   a) physical security measures for the airport perimeter and security restricted areas;
   b) perimeter roadways and other access roads for patrol purposes;
   c) security and apron lighting;
   d) vehicle and pedestrian access points to the perimeter and security restricted area, including automatic access control systems;
   e) electronic intrusion detection systems;
   f) an isolated aircraft parking position for the searching of aircraft subject to specific threats or acts of unlawful seizure;
   g) a blast containment area for suspect explosive devices;
h) explosive-detection equipment for cargo containers and pallets;

i) facilities for kennelling and training explosive-detection and patrol dogs;

j) a simulation chamber.

Table 2: ICAO regulations

2.1.2 Description of the Emergency Prevention and Management training courses in Aviation domain

This section aims at providing an overview of some of the most relevant European Emergency Prevention and Management training courses in the Aviation domain. This review builds on a previous work carried out in the BEMOSA (Behaviour Modelling for Security in Airports) research project (EC-funded 7th FP, GA no. 234049) in the field of airport emergency and security management. Since emergency prevention and management is mainly covered in security trainings, the review analyses the most relevant airport security training packages that are currently offered by various training providers in Europe.

The security training packages reviewed are the following:

- **IATA- Security training courses**: the International Air Transport Association (IATA) is the trade association for the world’s airlines. One of the main missions of IATA organisation is to help airlines to operate safely, securely and efficiently by providing industry stakeholders with a range of products such as qualified training courses in the aviation domain. Indeed, it offers a wide variety of airport security training courses addressed to different aviation professionals. The main objective of the IATA Security training package is to provide trainees with a deep understanding of the knowledge and expertise required to address security in the Aviation domain. The security courses provide timely information and strategies for addressing security challenges. The courses portfolio ranges from operation planning to management.
  (for further information visit: [http://www.iata.org/training/subject-areas/pages/security-courses.aspx](http://www.iata.org/training/subject-areas/pages/security-courses.aspx)).

- **ICAO- Aviation Security Training Packages (ASTPs)**: the International Civil Aviation Organisation (ICAO), amongst the many responsibilities, produces global plans to coordinate strategic progress for safety and security in the aviation domain. The ICAO agency also delivers a wide range of aviation training programmes to train qualified and competent personnel.
  (for further information visit: [http://www.icao.int/Training/Pages/AviationSecurity.aspx](http://www.icao.int/Training/Pages/AviationSecurity.aspx)).

- **ACI Global Training: Security Courses**: Airports Council International (ACI) is the only global trade representative of the world’s airports. ACI Global Training offers airport training solutions through accreditation programmes, certifications, in-house courses and e-learning. ACI provides security related trainings which take a role in informing regulatory authorities of the impact of new security rules, helping to shape those rules and ensuring that changes in security are communicated to airport authorities.

A description of the airport security training packages, together with their objectives and topics covered is shown in Appendix A.
2.2 Review of training courses in the Railways domain

In the railway domain there are not standardized training courses at the opposite of the aviation domain and the maritime domain. Rail training is mostly a national business.

The existing rail training centres in Europe educate and train approx. 11,000 train drivers in 2007 and train approx 20,000 other rail related staff. Most training facilities are owned and run by national rail operators. However, in general training centres are increasingly facing competition and opens up to other operators.

In 2002, the training and staff requirements for different categories of railway staff involved in cross-border operations were analysed and assessed in the Atkins study [5]. The study presented a range of recommendation. These recommendations point toward a need for harmonised minimum requirements for railway staff involved in cross-border operations and a common training approach since systems and rules are more and more harmonised at the European level.

Moreover, as pointed out in the EC report [6], there is a lack of knowledge about future training needs, i.e., what types of professional skills will be needed in the coming years. Furthermore, the availability of training services that could help bridge the skills gap in the railway sector has not yet been investigated at a European level.

The railway safety and security in the European context is managed at three different levels — at the level of operators, Member states and the EU. At world level there is the Union International de Chemins de Fer (UIC - the worldwide professional association representing the railway sector and promoting rail transport); however, as said before, railways is mostly a national business, thus there are not so many standardised courses in the domain. All the responsibilities are linked to the railways undertakings and infrastructure managers that have to respect the regulations of the different National Safety Authorities. For this reason, section 0 does not present a comprehensive review of the training courses in the railway domain but it reports only a description of the emergency management training courses offered by NTV.

2.2.1 Security and Safety Regulations in the Railways domain

The European Railway Agency (ERA) was established by the Regulation (EC) No 881/2004 [7] of the European Parliament and of the Council of 29 April 2004 and last amended by Regulation (EC) No 1335/2008 [8]. At European level the European Railway Agency has therefore started to develop new methods for monitoring and evaluating the safety of the railway system at EU level. In 2013, the ERA developed a first proposal for a tool for assessing the effectiveness of the regulatory regime of individual Member States at the level of National Safety Bodies (NSA) and started to apply it in a pilot programme.

The ERA highlighted a pyramidal model for the safety and security management as represented in the following figures.
At the first level there is the context with culture, values and norms in the risk regulation regime. The second level of the pyramid is the context with processes, actions, programmes.

The third level, representing the performances indicators, includes the Key Performance Indicators (KPIs) and incidents while the highest level of the pyramid considers costs, outcomes and risk indicators.

Even if in the Fourth railway package, currently under discussion, the role of the European Railway Agency is going to increase, there is no evidence that ERA will take into its duties the creation and management of safety training packages.

The lack of integration between Countries is one of the main difference between the railway domain and the other sectors analysed in this research. In this context, there are some initiatives that is worth highlighting.

UIC created this year a security handbook for the high speed railways. The handbook evidences four main threats in this domain:

- Terrorism, as the systematic use of violence (terror) as a means of coercion for political religious or ideological purposes.
- Violent crime as a type of criminality in which the offender uses or threatens to use violent force upon the victim. This entails both crimes in which the violent act is the objective, such as murder, as well as crimes in which violence is the means to an end, (including criminal ends) such as robbery. Violent crimes include crimes committed with weapons.
- Property crimes, is a category of crime that includes, among other crimes, burglary, larceny, theft (from minor pick-pocketing to major motor vehicle theft), arson, shoplifting, and vandalism. Property crime only involves the taking of money or property, and does not involve force or threat of force against a victim.
- Cybercrime because railways are particularly dependent on computerised management systems. For example, railway signalling system ERTMS will be the key element in ensuring all traffic coordination within the EU.

UIC does not offer yet training courses, but it has several working groups on the security and an annual research meeting on the topics at which members share experiences and issues. At
this moment, the security and safety in the railways domain is managed by the National Safety Authorities.

### 2.2.2 Description of the Emergency Prevention and Management training courses in the railways domain

In every Country there are different procedures in the case of the emergencies, but there is not standardization of the courses. In the Italian case, Nuovo Trasporto Viaggiatori has set its own new procedures at the end of 2015 in case of emergencies. But also the competitor, Trenitalia, has different procedures that has to respect the general indications of the ANSF (Authority for the National Safety in the Railway domain).

The emergency procedure are divided in six chapters:

1) Target  
2) References  
3) Acronyms and definitions  
4) Organizations in case of the emergencies  
5) Responsibilities  
6) Revisions

The courses are different for the train drivers (1) and the cabin crew (train managers, Hostesses and stewards) (2). There are two courses:

a) Prevention in case of the fire events  
b) First Aid courses

<table>
<thead>
<tr>
<th>Course a.1 – Train drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 hours courses in case of high risk of fire events</td>
</tr>
<tr>
<td>The fire and the prevention (4 hours)</td>
</tr>
<tr>
<td>Protection in case of fire events (4 hours)</td>
</tr>
<tr>
<td>Procedures (4 hours)</td>
</tr>
<tr>
<td>Training (4 hours)</td>
</tr>
</tbody>
</table>

*Table 3: Course a.1 – Train drivers*

<table>
<thead>
<tr>
<th>Course a.2 – Cabin crew</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 hours courses in case of high risk of fire events</td>
</tr>
<tr>
<td>The fire and the prevention (2 hours)</td>
</tr>
<tr>
<td>Protection in case of fire events and procedures (3 hours)</td>
</tr>
</tbody>
</table>
Training (3 hours)

Table 4: Course a.2 – Cabin crew

<table>
<thead>
<tr>
<th>Course b.1 – Train drivers</th>
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</thead>
<tbody>
<tr>
<td>16 hours courses in case of first aid</td>
</tr>
<tr>
<td>The case of the emergency</td>
</tr>
<tr>
<td>First Aid</td>
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<tr>
<td>Risk of the activities in the first aid intervention</td>
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</tbody>
</table>

Table 5: Course b.1 – Train drivers

<table>
<thead>
<tr>
<th>Course b.2 – Cabin crew</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 hours courses in case of first aid</td>
</tr>
<tr>
<td>The case of the emergency</td>
</tr>
<tr>
<td>First Aid</td>
</tr>
<tr>
<td>Risk of the activities in the first aid intervention</td>
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</tbody>
</table>

Table 6: Course b.2 – Cabin crew

2.3 Review of training courses in the Maritime domain

2.3.1 Security and Safety Regulations in the Maritime domain

The 1978 Standards of Training, Certification and Watchkeeping (STCW) Convention [9] was the first to establish basic requirements on training, certification and watchkeeping for seafarers on an international level. Previously the standards of training, certification and watchkeeping of officers and ratings were established by individual governments, usually without reference to practices in other countries. The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, was adopted on 7 July 1978 in London and entered into force in 1984. The convention was modified in 1995. One of the major features of the revision was the division of the technical annex into regulations, divided into Chapters as before, and a new STCW Code, to which many technical regulations have been transferred. Part A of the Code is mandatory while Part B is recommended.

Whereas the STCW-78 Convention focused almost entirely on knowledge, the emphasis of STCW-95 has been shifted to practical skills and competence underpinned by theoretical knowledge. The 2010 amendments continued to emphasize competence rather than sea service or period of training. The Convention defines the standard of competence for each member of the ship's crew. This term refers to the minimum knowledge, understanding and proficiency that seafarers must demonstrate to gain certification. The tables contained in part A of the STCW Code specify the standards of competence to be achieved by the seafarer. The thinking behind dividing all duties on board into competencies, functions, and levels of
responsibility is that certificates should be awarded on the basis of the specific duties the seafarer carries out on-board rather than on ship departmental divisions (deck/engine).

Very interesting for IMPACT is one of the functional area: controlling the operation of a ship and care for persons on board. The levels of responsibility are: management level (applies to senior officers); operational level (applies to junior officers) and support level (applies to ratings forming part of a navigational or engine watch).

2.3.2 Description of the Emergency Prevention and Management training courses in Maritime domain

All the training packages reviewed in the maritime domain meet the mandatory requirements issued by the STCW convention. In particular, the training courses reviewed are the following:

- **Basic/Advanced Training**: Training or instruction in safety and emergency has been undertaken by seafarers with designated safety or pollution prevention duties in the operation of the ship.

- **Security training – ISPS (International Ship and Port Security Code)**: new trainings introduce new security familiarisation and training requirements for other grades on shipboard personnel. Essentially there are four levels of security training, and depended on their designated duties, seafarers will need to be qualified at the appropriate level. All seafarers must receive security training related enabling them to know the procedures to follow when they recognise a security threat, take part in security related emergency and security contingency procedures.

- **Special Training for Personnel on Passenger Ship**: The STCW Convention requires that personnel serving on passenger ship, including many personnel not directly connected with the operation of the ship, must undergo additional ship specific training.

- **Additional Training and Certification Requirements – Rescue Boats, Leadership and Management, SAR IN COOPERATION, ISM (International Safety Management) CODE**;

- **IALA**: The IALA World Wide Academy (WWA) is an integral part of the International Association of Marine Aids to Navigation and Lighthouse Authorities. The Competent Authorities of IALA Member States can accredit training organisations to deliver IALA approved model courses on the provision of Vessel Traffic Services.

For a detailed description of the training courses see Appendix B.

2.4 Findings from the review of the training packages: contents, skills already covered and gap analysis

In order to design and develop a cultural-based security training package which support front-end operators to take cultural differences into account in preventing and managing emergency situations, the project needs to know whether some relevant aspects are already covered by the mandatory training reviewed. As IMPACT project aims to investigate the essential role played by cultural factors in managing safety and security issues related to emergencies in public transport systems, the content areas relevant for the purpose of the project and that directly and indirectly contribute to the training might be summarised into 5 main groups:
• Management of emergency and incidents;
• Threat assessment and Risk assessment;
• Human factors;
• Communication skills;
• Multicultural factors (e.g. multicultural crowd management, intercultural skills).

In particular, a clearer understanding of the current mandatory trainings which already cover the areas of management of emergency and incidents as well as threat and risk assessment could be used as useful framework for the development of the cultural risk training course (WP3) that will be inserted as additional material in the IMPACT cultural-based security training package.

Human Factors, Communication skills and multicultural factors represent key content areas for the development of the cultural-based security training package. Thus a better understanding of the training courses that already dispense those knowledge and non-technical skills will allow to identify how these areas have been addressed so far and what are the aspects that might be improved.

The following tables illustrate the map between the training courses and the areas of contents covered. This mapping came out from a review of the contents addressed by the different training courses only from the aviation and the maritime domains, given that the railways sector do not have standardised mandatory trainings (see Appendix A and Appendix B for a description of the aviation and maritime training courses).

<table>
<thead>
<tr>
<th>COURSE TITLE</th>
<th>Management of emergency and incidents</th>
<th>Threat assessment and Risk assessment</th>
<th>Human Factors</th>
<th>Communication skills</th>
<th>Multicultural Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>IATA</td>
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<tr>
<td>Airport Security Operations Optimization</td>
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<td>Aviation Security awareness</td>
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<td>Aviation Security Management Advanced</td>
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<tr>
<td>Aviation Security Management</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td>Predictive passenger screening</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Recurrent Aviation Security Training</td>
<td>✓</td>
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<tr>
<td>Security Checkpoint Management</td>
<td>✓</td>
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</tbody>
</table>


| Security Management Systems for airports and civil aviation authorities (SEMS) | ✓ | ✓ |
| Security Risk and Crisis Management | ✓ | ✓ | ✓ | ✓ |
| Security X-ray Screening Operations | ✓ |
| Unruly Passengers preventions | ✓ |

*Table 7: Contents covered by IATA Security training package*

<table>
<thead>
<tr>
<th>AREAS OF CONTENT COVERED</th>
<th>COURSE TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of emergency and incidents</td>
<td>Threat assessment and Risk assessment</td>
</tr>
<tr>
<td>Human Factors</td>
<td>Communication skills</td>
</tr>
<tr>
<td>Multicultural Factors</td>
<td></td>
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</tbody>
</table>

| ICAO | Basic security training | ✓ | ✓ | ✓ |
| Management | ✓ | ✓ |
| Exercise | ✓ | ✓ |
| Crisis Management | ✓ | ✓ |
| Cargo | ✓ | ✓ |

*Table 8: Contents covered by ICAO training package*

<table>
<thead>
<tr>
<th>AREAS OF CONTENT COVERED</th>
<th>COURSE TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of emergency and incidents</td>
<td>Threat assessment and Risk assessment</td>
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<tr>
<td>Human Factors</td>
<td>Communication skills</td>
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<tr>
<td>Multicultural Factors</td>
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</table>

| ACI | Airport Security | ✓ | ✓ |
| Baggage Screening: Operational and Image Analysis | ✓ |
| Security and Facilitation | ✓ |

*Table 9: ACI training package*

\(^1\) The ICAO Instructure course have been left out because it is not relevant for the purpose of the IMPACT project.
<table>
<thead>
<tr>
<th>COURSE TITLE</th>
<th>AREAS OF CONTENT COVERED</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Management of emergency and incidents</td>
</tr>
<tr>
<td>Basic Training</td>
<td>Basic Safety Training in Personal Survival Techniques</td>
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<td>Basic Safety Training in Personal Safety and Social Responsibilities</td>
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<td></td>
<td>Basic Safety Training in Fire Prevention and Fire Fighting</td>
</tr>
<tr>
<td>Advanced Training</td>
<td>Training in Advanced Fire Fighting</td>
</tr>
<tr>
<td>ISPS CODE</td>
<td>Proficiency in Security – awareness</td>
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<tr>
<td></td>
<td>Proficiency for Seafarers with Designated Security Duties</td>
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<tr>
<td></td>
<td>Proficiency for Ship Security Officer</td>
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<tr>
<td></td>
<td>Port Facility Security Officer</td>
</tr>
<tr>
<td>Special Training for Personnel on Passenger Ship</td>
<td>Crisis Management and Human Behaviour Training</td>
</tr>
<tr>
<td></td>
<td>Crowd Management and Safety</td>
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<td></td>
<td>Safety Training for Personnel Providing</td>
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</table>
IALA Training and Certification of Vessel Traffic Services Personnel

Table 10: Contents covered by STCW training package

<table>
<thead>
<tr>
<th>IALA</th>
<th>Training and Certification of Vessel Traffic Services Personnel</th>
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<tbody>
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<td>✔</td>
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</table>

On the whole, the training packages seem to foster the development of both technical and non-technical skills. The “hard” or technical skills require a practical understanding of procedures, standards, regulations, techniques, technologies, roles and responsibilities of all the aspects that are formally assessed to ensure that the operators carry out the safety critical task. Based on the description of the training courses and their main objectives (Appendix A and Appendix B), the technical skills seem to be mostly related to:

- Implementation of crisis management plan to respond to major security emergencies (e.g. fire, terrorist attack)
- Knowledge of security and standard operation procedures and regulatory frameworks
- Evaluation and recognition of risk and threats in security planning
- Identification of illegal materials (e.g. weapons, explosives), fraudulent documents and suspicious persons and usage of specific security screening technologies.

The content areas of threat and risk assessment, management of emergency and incidents, theoretical knowledge of legislation and regulations are more related to the development of technical skills. On the whole, based on the review of the main contents covered by the current mandatory training courses, transport hubs operators seem to be well trained about the ability to apply emergency plan and procedures, understand essential component of crisis management, evaluate risk and threats involved in security planning. In currently adopted Risk Assessment Methodologies, multi-cultural aspects are often neglected. IMPACT will develop in WP3 a Cultural-based Risk Assessment methodology. This innovative methodology should be complemented with proper training to facilitate its adoption.

On the other hands, the non-technical skills (NTS) can be defined as “the cognitive and social skills that complement workers’ technical skills, and that contribute to safe and efficient task performance [10]. NTS capture behaviours that are not directly captured by the formal definitions of a job, which usually focus on the functional aspects of the work. In the security domain these pertain for instance the use of security and (safety) equipment, and the execution of security related tasks (e.g. monitoring of the passenger flow, inspecting of facilities, conducting body search, etc.). On the other hand, NTS capture they include both personal cognitive skills such as awareness of the work situation, i.e. situation awareness, decision making, management of fatigue and stress, as well as interpersonal skills such as leadership, teamwork, and communication [10][11]. While the technical or functional aspects of the work capture the minimum requirements that need to be achieved by the average worker, NTS capture what best performers, usually expert operators, do in order to reliably achieve high performances. Evidence from the aviation [11], nuclear [12] and healthcare [13];[14] domains suggest that NTS are an important enabler of efficient and safe performance in safety critical domains. In other words, NTS are an enabler of good practice.

Most of the training courses reviewed provide basic knowledge of human factors (e.g. assessment of human errors, situation awareness, decision making). Also communications
skills were supported by the training courses such as: knowledge of standards for internal and external communications, ability to effectively communicate with stakeholders and team-members during crisis and normal situations.

Furthermore, for the development of the IMPACT cultural-based training package, the attention was focused to verify whether some training courses have already addressed the management of cultural and multicultural aspects. So far two training courses on the maritime domain, “training in Bridge Resource Management” and “Human Element, leadership and management” (see Appendix B) already addressed the management of cultural aspects during operational and emergency situations. These training courses provide trainees with a general understanding of the strategies to recognise and respond to cultural issues (e.g. recognise and avoid cultural bias).

Although the training packages reviewed are comprehensive and almost cover the relevant topics on security management, threats assessment, management of crisis and emergency situations; cross-cultural and multicultural behaviour management as well as intercultural skills (e.g. operators’ ability to communicate with passengers from different countries during emergency, operators’ ability to recognise cultural peculiarities and interact with people from different nationalities, religions and cultural background in order to avoid communication bias in emergency situations) are rarely covered by the current mandatory trainings. These evidences are also in line with the main findings collected during the data collection activities, where experts reported that cultural factors are not addressed in training courses for front-end operators (see section 3.1 and 3.2).

The main objective of the IMPACT cultural-based security training package will be addressed to cover these gaps in order to better support front-end operators during the management of critical situations with the involvement of multicultural crowds.
3 Data collection Activities and Analysis

This section aims at describing the outcomes achieved from the data collection activities conducted in the earlier phases of the project. In particular, the most relevant findings gathered from the 1st ESG meeting and the qualitative interviews with front-end operators from different transport domains were reported in the paragraphs below.

The 1st ESG meeting aimed to:

- collect feedback from external stakeholders in the different transport domains in order to figure out the safety/security training courses currently provided to the front-end operators;
- identify the contents already covered by the current trainings;
- identify significant limitations;
- assess whether multicultural factors are taken into account;
- verify the adequacy of the IMPACT scenarios.

This activity might be seen as a mean to verify and check whether the findings from the review of the security training packages undertaken in section 2 are aligned with the feedback provided by the external stakeholders.

On the other hands, the qualitative interviews with front-end operators aimed to:

- collect feedback and inputs from personnel directly involved in the management of normal as well as critical situations;
- identify what are the most critical skills, abilities and competences required during daily operations, what are the most critical behaviours and types of passengers to deal with;
- verify what are the aspects that should be improved in the current training courses.

All the relevant findings collected through these data collection activities were summarised in section 3.3.

3.1 Analysis of outcomes from the External Stakeholders Group meeting

The 1st External Stakeholders Group meeting was part of a series of data collection activities conducted in the initial and exploratory phase of the project (see D1.2). The main aim was: 1) to collect experts point of views about current safety/security emergency preparation and management procedures used in the different transport domains: Aviation, Railways and Maritime and, 2) to identify the main gaps that can be addressed by the project.

Three group sessions were planned to collect expert feedbacks about relevant discussion topics for the IMPACT project. This section will report only the results that emerged from the sessions and that are relevant to current safety/security training courses available in the different domains (for further information see the 1rts ESG report).

The first questionnaire distributed to the experts aimed to gather a general overview about the current training delivered in the different domains. Experts were asked to fill in the following sections:

- **Safety/security training provided to the front-end operators** (this item investigated the type and duration of the training activities provided to the front-end operators): The classroom training, on the job training and emergency drills seem to
be the training format often used, followed by e-learning training modules and simulator based training.

- **Contents covered by safety/security training for front-end operators in the different domains:** results from the questionnaire are in line with the analysis of the literature review conducted in section 2.4. The experts reported that the main areas of content covered by the current training packages are often related to procedural, regulations, legislations, risk management and security management (see Appendix C for the complete list of contents).

- **Limitations of the current safety/security training courses:** limited financial budget, inability to keep up with the regulatory changes, lack of emergency drills are the most critical limitations that came out from the questionnaire (Appendix D for a comprehensive list of limitations).

- **Considerations of multicultural factors in current security/safety training:** the majority of the experts (70%) reported that the training courses available in their organisations do not cover cultural factors. Only three experts indicated that it is recommended that staff respect cultural differences and use appropriate language when interacting with people from other cultures. Also this finding confirmed what emerged from the review of the training packages where multicultural factors seem to be rarely covered (see section 2.4).

- **Assess and verify the adequacy of IMPACT emergency Scenarios:** the IMPACT scenarios were defined internally by the consortium over the period June 15—September 15 by means of focus group discussion and e-mail exchanges (see section 5 for a detailed description of the different scenarios generated). Results from the questionnaire showed that the majority of the participants (43%) rated the IMPACT scenarios as adequate to address emergency scenarios in which multicultural factors are important.

Overall the feedbacks provided by the External Experts confirmed that the main contents covered by the safety/security training in the different domains are related to procedural and standard aspects of emergency, such as: European regulations, security management, risk management, investigation on Incidents and Accidents, emergency training and risk management. On the other hand, the majority of experts confirmed that **cultural factors are not covered by the current training courses for front-end operators.**

Despite experts reported that security training courses are regularly provided to all the employees, limited financial resources and the inability to keep up with the regulatory changes seem to be the most critical shortcomings identified.

### 3.2 Front-end Operators qualitative interviews

Several qualitative interviews have been carried out in the different transport domains in order to collect useful and relevant information, experiences and stories from personnel directly involved in the management of passengers.

This section aims to report only the relevant findings that could be used as a useful input for the development of the training requirements and objectives of the cultural-based training package. For a comprehensive report of the qualitative interviews conducted with front-end operators see D1.2 “Empirical data-sets and results”.

A heterogeneous sample composed by security and safety operators form railways and aviation domain, railways police, safety and security managers from maritime and aviation were interviewed from December 2015 to April 2016.
The main evidences from the semi-structured interviews can be grouped into three main areas of content:

- critical competencies, skills and abilities required during current ordinary situations;
- critical behaviours and situations to handle;
- current training areas that need to be improved.

3.2.1 Critical competencies, skills and abilities required during current ordinary situations:

During the interviews the operative personnel often reported that the most critical abilities required during normal operations are the following:

- **Task management and decision making during operational situations:** one of the main objective of the operational staff is to take the most suitable decision in a short time frame. A lot of external factors concurred to influence the operators’ performance in a given situation such as: individual characteristics of the operators, environments, other passengers, time pressure, setting priorities. Although they have procedures to follow, they reported that often these **high levels of procedures and regulations are not appropriate for the specific situation.** Most of the time they have to adapt their behaviour taking into account the context, passengers and the specific situation they have to deal with. Most of the time their actions are based on past and personal experiences. During the interviews they reported that one of the most critical aspects of their job is to deal with uncertain situations and setting priorities to easily analyse the situations and decide how to act.

- **Interpersonal and communication skills:** the majority of strategies used by operators to deal with unruly or aggressive passengers are based on their personal experience and interpersonal abilities. Generally, they use their past experience to develop effective strategies in order to deal with real critical situations. For example, a safety operator reported that when dealing with aggressive passengers it is important to maintain and show a self-confident attitude, stay calm, try to calm down the passenger, try to talk loud in order to involve the other passengers. Furthermore, when dealing with problematic passengers or group of passengers, front-end operators need to communicate in an accurate, clear and efficient manner in order to avoid misunderstandings. Misunderstandings often occur because of language and cultural barriers (especially with tourist from Asian countries e.g. Japan, China). The most common communication failures are:
  - People not understanding instructions
  - People not understanding local non-verbal language
  - People not understanding signs
  - People not understanding public messages (audio and visual)
  - People unable to report problems (i.e. missing relatives, missing child, type of injury, presence of injured persons in remote sites) because of language problems
Although interpersonal and communication skills seem to be very important in the relationship with passengers, so far most of the training courses in the different domains rarely cover these types of skills.

**Intercultural skills:**

All the operators interviewed reported that there are not specific instructions or procedures for dealing with a specific cultural group. They only receive high level information that they have to follow in certain situations with specific cultural/religious groups that require a special treatment (e.g. Sikh). For instance, the airport security personnel should be aware that Sikh men are not allowed to remove their turban in public spaces. Thus the security checks should be carried out in a different place.

This high level information about cultural differences do not offer suggestions or practical guidelines to deal with people from foreign cultures. The majority of the front-end operators are not trained to adopt the most appropriate approach to effectively communicate with people of other cultures. An example of communication failure in the cultural code is the security screener that communicates with an Arab wife, instead of talking to her husband.

### 3.2.2 Critical behaviours and situations to handle

This section reports a list of passenger’s behaviours that are relevant from a security management perspective in transport hubs, and which have emerged from the qualitative interviews collected with front-end security operators in the context of IMPACT D1.2. These passenger’s behaviours may influence the prevention and development of emergencies; and they are usually known by expert operators. The management and mitigation of these behaviours is part of their day-to-day practice, and is necessary to achieve safe and efficient task performance.

The rationale for considering these behaviours in the scope of the IMPACT training package arises from the fact that nowadays security operators learn about these behaviours (and the relative coping strategies) mostly on the job. Such behaviours were reported to be marginally/not covered by current training packages. While these letters cover the technical and regulatory aspects of the work, they did not seem to cover the non-technical skills needed to cope with the identified behaviours.

The identified relevant passengers’ behaviours in transport hubs summarised in Table 11 are described next. For explanatory our purposes they have been grouped in six clusters. It is to be noted that both the clusters as well as the behaviour are expected to be refined in the next phases of the project.
BEHAVIOURAL CLUSTERS | RELEVANT PASSENGERS BEHAVIOURS
---|---
A. EMERGENCY | 1. Different reactions to public alarms (in terms of reaction time, panic/herding effects and compliance with instruction)  
2. People acting based on their own initiative during emergencies  
3. Fighting for safety equipment during evacuations  
4. Passengers refusing to take unfamiliar paths during evacuations  
5. Patterning, i.e., forming of fixed ways of behaving  
6. Undesirable video coverage of on-going emergency operations  
B. CONFLICTS BETWEEN STAFF AND PASSENGERS | 7. Verbal/physical aggression against staff/facilities  
8. Passengers interfering with daily security operator's activities  
C. CONFLICTS/TENSIONS ACROSS PASSENGERS | 9. Tensions between passengers of different cultural groups  
D. GROUPS' THREATS | 10. Football team supporters engaging in unruly behaviour  
11. Risk of Taharrush Gamea (mass sexual assault)  
E. OTHER | 12. Reporting of security threats  
13. Misuse of safety equipment  
14. Passengers intentionally entering forbidden/restricted areas  
15. Cultural variations in queue management  
16. Refusal to receive medical care, treatment

Table 11: Overview of relevant passengers’ behaviour in transport hubs.

A. EMERGENCY
1. **Reactions to public alarms.** In emergency situations: passengers’ reactions to an alarm may vary. The significance of alarms may vary for passengers of different cultural background. For instance, it is reasonable to assume that an Israeli would probably react quicker than an Italian to the same alarm.

2. **People acting based on their own initiative during emergencies.** This situation occurs when passengers take action regardless of the instructions received by the relevant security operators. Examples of this behaviour include or instance breaking a window/opening the door of train without personnel authorisation; passengers of a cruise ship lowering the longboat and abandoning the ship (e.g. Norman Atlantic). These instances bring the risk for passengers to enter an environment (e.g. difficult sea conditions for the Norman Atlantic) that poses higher safety and health risks than the initial confined environment.
Potential behavioural triggers for this behaviour include: Lack of trust on the ability/knowledge of the operator (e.g. Costa Concordia); increased sense of danger; familiarity with the environment, etc.

3. **Fighting for safety equipment during evacuations.** This may occur when passengers need to be evacuated from a confined environment, such as a sinking boat or a broken down train. Specific examples of this behaviour include men beating women, elderly, and/or child to get a lifejacket, or to flee to safety first during emergency situations (e.g. Norman Atlantic accident). Potential motivational trigger includes: increase perception of danger; conviction that weaker member of society (elderly, women and child) are less important than men.

4. **Passengers refusing to take unfamiliar paths during evacuations.** During evacuations passengers may refuse to take the indicated paths, as they prefer to take the more familiar one. This behaviour may occur because of a lack of trust in the security operators, combined with knowledge of a more familiar path. This evidence is also in line with the key lesson from the literature review that in familiar environment people internalise cognitive maps and use them to help them navigate (see Table 14).

5. **Patterning, i.e., forming of fixed ways of behaving.** Passengers do not follow the instructions of Transport Hubs Operators and/or First Responders since they don’t want to change their habits, beliefs, etc.

6. **Undesirable video coverage of on-going emergency operations.** Media coverage of incidents can be undesirable from a security perspective, as important information about security the on-going and future response may be conveyed via TV to terrorists. This observation was noted during the interviews in relation to the security incident at Roma Train station, in which the station was evacuated after passengers on the metro sighted a man with a rifle and reported him to railway police. On that occasion, a TV showed the intervention strategies of Special Forces. Strictly speaking, this behaviour regards the interaction between security operators and the media, rather than passengers. However, it is appropriate to retain it as it is something that has to be considered during an emergency by the users of the IMPACT measures.

B. **CONFLICTS BETWEEN STAFF AND PASSENGERS.**

7. **Verbal/physical aggression to staff/facilities.** The following include a set of situations that involve angry passengers reacting to security staff. The first two are about normal operations, the latter refers to emergency situations.
   
   i. **Passengers over-reacting during security screening.** Some categories of passengers may be more prone to others to over react and verbally attack staff during security checks. Pescara airport security screeners reported this situation to be frequent with Romanian travellers. It need to be noted that this was just an impression of two security operators and that no conclusive data has been collected to validate it. Arguments may occur if/when the operator adopts a communication code not appropriate for the tourist/passenger.
   
   ii. **Passengers over-reacting following delays.** Following delays, some passengers may react violently. Motivational triggers for such reactions include: attitude to complain; perceived urgency of the trip, which may be very high for the subject (i.e. medical operation; exam at the university; family event, etc.); lack of trust on the operator, for instance, in the airport domain, sometimes airline passengers may
receive by their airline information via SMS that is more updated than the info communicated by the airport operator; unrealistic expectations about the actual capabilities of local staff.

iii. **Passengers’ revolts following a long delay/permanence in a confined environment.** This situation usually requires passengers to remain in a confined environment, such as broken down train and/or ship, or airport terminal, for a prolonged period of time, usually due to system breakdowns or a weather-related delays. Although this situation may not pose an immediate health and safety risk to passengers, it may get extremely uncomfortable as time elapses. Train operators reported one of such situations ending up in a revolt, i.e. the passengers pillage the galley on an NTV train. Motivational triggers for this behaviour include environmental discomfort (i.e. severe heat) and hunger.

8. **Passengers interfering with daily security operators’ activities**
   i. **High-ranking passengers interfering with the instructions/work of front end practitioners during emergencies.** In the case of emergencies, high ranking individuals such as politicians or high level authorities may establish direct communication with other external authorities to try to steer the management of the emergency. For instance, the interviewed railways operators reported the case of the politician asking the railways police to intervene and open the door of a train stuck in Roma Tiburtina, eventually disembarking passengers on an unauthorised platform.
   ii. **High-ranking passengers complaining during security checks.** Maritime operators of Civitavecchia confirmed to have observed a similar dynamic, when a high ranking individual claimed that no one has the right to body search him/her or to inspect his/her baggage. One important motivational trigger/contributor for this and the previous behaviours is that it is more common for politicians in Southern and Eastern Europe to regard themselves as special people to whom different rules and laws should apply, not those for the plebs. One further contributor to this condition is the general lack of knowledge about the controls that security operators are authorised to perform according to the applicable regulations.

C. **CONFLICTS BETWEEN PASSENGERS.**
9. **Tensions between passengers of different cultural groups.** Arguments among passengers may occur because of proximity, as people of different cultural groups may have a different conception of own personal space. Therefore, arguments may occur because passengers may feel their personal space has been invaded. Proximity arguments may have a religious/sexist origin, as exemplified by those clashes occurred in the aviation domain in which male ultra-orthodox Jews refused to sit next to a woman. Furthermore, arguments may occur between citizens whose respective nations are at war (e.g. Russians and Ukranians).

D. **GROUPS’ THREATS**
10. **Football team supporters.** Football team supporters may cause damage to physical facilities and are difficult to contain. They usually act in group, under the effect of alcohol, and may be aggressive. One research participant reported the case of a group of football supporters that once at the airport gate behave
aggressively: they screamed, engaged in chorus and removed the bands, thus causing distress for both staff and other passengers. As a result, the police had to intervene and the boarding operations were suspended. The situation may worsen in case of clashes between the football supporters of different teams. On this regard, a railway police operator reported to have witnessed several clashes of different football team supporters occurring in his station, in which the involved groups throw at each other anything that comes to their hand, thus causing severe physical damages and distress to the other passengers.

11. Risk of Taharrush Gamea. Also called the “rape game”, this is a mass sexual assault originating from the Middle East. It became famous in Europe following the events during Cologne New’s eve. This event was not experienced by the interviewed subjects; it was mentioned as a possible threat to consider.

E. OTHERS

12. Reporting of security threats. Regarding the reporting of potential security threats, the following categories of behaviour have been reported by the interviewed staff:

   i. *People failing to report a security threat* (e.g. unattended baggage). This may occur because of ignorance of the threat; because of fear of being watched out; and because of inability to express themselves in the local language.

   ii. *People reporting improperly security threats*. For instance, interviewed Italian railways police officers reported that sometimes passengers who found an item unattended, pick it up and bring it to the railways police office, instead of just reporting it.

   iii. *People over-reporting potential security threats* (i.e. false alarm):

      o People reporting insignificant items, such as empty plastic bag, letter envelops, etc. This behaviour is usually observed in the aftermath of terroristic attacks.

      o People reporting unattended items that in fact are temporarily unattended or lost items. Sometimes railways passengers report items as unattended, while in fact the owner of the baggage is in the immediate proximity, although perhaps not immediately visible. This situation happens for instance when a passenger with several heavy bags brings them on board the train one at the time. The bags left on the platform may trigger an alert by other passengers. In other instances, the train may depart while the bags are left on the platform and the owner on board.

13. Misuse of safety equipment. In normal situations: people opening doors (trains and airplanes); triggering the safety brake (train); crossing platform because they do not understand the significance of what they are doing (they are ignorant about travelling norms and risks). During emergency operations: people not knowing how to use safety equipment: e.g. fire extinguisher are there only to escape, not for firefighting (this is a fire fighters task only).

14. Passengers intentionally entering forbidden/restricted areas. This issue has been reported especially in relation to the railways domain, where commuters and passengers often cross rail tracks. Sometimes the involved individuals come from poor countries where crossing tracks is an accepted habit. They may also be thieves or people that after being stopped by police officers try to escape.
15. **Cultural variations in queue management.** One study participant noted that cultural differences can be observed also in relation to the queue management measures. For instance, northern countries, a symbolic barrier, i.e. the yellow line, is often a sufficient measure to create an ordered line. In South European countries, a physical barrier—i.e. a band—is usually preferred.

16. **Refusal to receive medical care, treatment.** People may have religious beliefs that prevent them to accept medical treatment, such as Jehovah witnesses refusing blood transfusion, or Muslim women refusing interaction with a male doctor.

### 3.2.3 Current training areas that need to be improved

All the operators reported that they receive a periodic training that generally cover theoretical framework, regulatory aspects and emergency simulations.

Practical simulations and emergency drills seem to be well covered by the current training courses. For example, a train manager from NTV reported that generally the emergency situations simulated for training personnel are fire in a gallery and train transfer. In one of these simulations, NTV employed 100 professional actors that simulated potential passenger behaviours such as unauthorised evacuation during an emergency.

Although front-end operators receive regular training about standard procedures during ordinary as well as emergency situations, these procedures and regulations do not rely on real and specific situations. So far, most of the transport hub operators perceive a mismatch between the theoretical content of the mandatory trainings and the real situations they have to deal with. Often they have to handle critical situations in which time pressure plays a key role and often the events do not flow as expected.

Also, the interviewed personnel confirmed that they rarely receive training about soft and non-technical skills during training courses.

### 3.3 Summary of findings from data collection analysis

This section presents a translation of the main findings from empirical data collection into training requirements, in order to settle the basis for the development of the IMPACT training package.

For the purpose of this document it should be noted that the data collection activities are still ongoing. Therefore, the initial findings collected to steer the training requirements could be further refined when the analysis of the results from data collection activities will be concluded.

These results constitute a first consolidated pull of outcomes that need to be enriched and refined with the final achievements from WP1 activities.

### 3.3.1 Main Findings from 1st ESG meeting

The results from the 1st ESG meeting and the related training requirements have been summarised in the table below.
<table>
<thead>
<tr>
<th>Topic of the questionnaire</th>
<th>Key Findings from the 1st ESG meeting</th>
<th>Training requirement from 1st ESG meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training format provided to the front-end operators</td>
<td>The classroom training, on the job training and emergency drills seem to be the training format often used, followed by e-learning training modules and simulator based training.</td>
<td>Training should consider the current format of the training courses available and select the method that better fit the needs of front-end operators and the types of contents that should be trained. (e.g. practical exercises, simulations of emergency situations)</td>
</tr>
<tr>
<td>Contents covered by safety/security training for front-end operators in the different domains</td>
<td>Results from the questionnaire are in line with the analysis of the literature review conducted in section 2. The experts reported that the main areas of content covered by the current training packages are often related to procedural, regulations, legislations, risk management and security management.</td>
<td>—</td>
</tr>
<tr>
<td>Limitations of the current safety/security training courses</td>
<td>Limited financial budget, inability to keep up with the regulatory changes, lack of emergency drills are the most critical limitations that came out from the questionnaire</td>
<td>Format and duration of the training course focusing on multicultural aspects in emergencies need to account for the limited resources that the relevant transport organisations can allocate to it.</td>
</tr>
<tr>
<td>Considerations of multicultural factors in current security/safety training</td>
<td>The majority of the experts (70%) reported that the training courses available in their organisations not cover the cultural factors. Only three experts indicated that personnel is recommended to respect cultural differences and to use an appropriate language when interacting with people from other cultures. Also this finding confirmed what emerged from the review of the training packages where multicultural factors seem to be rarely covered</td>
<td>Training should allow trainee to get a general understanding of cultural characteristics, differences and their impact on individual and crowd behaviour</td>
</tr>
</tbody>
</table>

Table 12: Mapping between key findings from 1st ESG meeting and related training requirements
3.3.2 Main Findings from qualitative interviews

In general front-end operators seem to be well trained for standard daily situations, as reported in section 2.4, front-end operators receive a recurrent training on theoretical and technical aspects referred to procedures, standards, regulations, emergency plans, etc. However, most of the time these trainings offer a high level knowledge of procedures and standards that often are difficult to apply to context-specific situations that operators have to deal with. Usually front-end operators have to manage unexpected situations or cope with unruly passengers, but each situation is different from the others and the operator has to adapt his or her behaviour taking into account the particular circumstances of a given event.

Front-end operators stated also that misunderstandings during standard procedures are often related with cultural barriers. Thus a deeper knowledge on different communication styles, body languages and international gestures, could be useful to improve communication skills towards visitors and passengers from different countries.

Therefore, as emerged from the interviews, an improvement of particular employee’s skills could be advantageous in the following areas:

- Task Management/Decision making;
- Interpersonal skills;
- Communications skills;
- Intercultural competences;
- Management of critical passengers and groups of passengers.

Taking into account the major findings and needs from the interviews with front-end operators, some initial training requirements could be defined.

<table>
<thead>
<tr>
<th>Focus areas</th>
<th>Key Findings and needs from Interviews</th>
<th>Training Requirements from interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Management/Decision Making</td>
<td>Operators should adapt their behaviours taking into account context, passengers, environments, number of colleagues available, time pressure. They often take decision based on their past experiences.</td>
<td>The training should focus on multiple actors’ situations taking into account relevant aspects that can occur in real situations (e.g. time pressure, passenger behaviours and attitudes, internal state of the front-end operators, stress, cooperation with colleagues), in order to improve the preparedness to respond to emergency situations.</td>
</tr>
<tr>
<td>Interpersonal skills</td>
<td>When operators have to deal with unruly or aggressive passengers they generally use strategies based on past experiences.</td>
<td>IMPACT cultural- based security training package should consider relevant aspects that can occur when managing unruly passengers or unusual situations, providing example from real experiences.</td>
</tr>
</tbody>
</table>
**Communication Skills**

Misunderstanding situations often occurred for problems related to language and cultural barriers. The most common communication failures are generally related to a failure to follow instructions and messages; lack of understanding of foreign languages.

The training package should present key advices to foster an effective communication in real operative situations. It should also provide trainees with practical examples of common misunderstandings and strategies to avoid communication bias.

**Intercultural Competences**

So far mandatory trainings do not provide trainees with specific instructions or procedures for dealing with a specific cultural group. They only receive standard information on the management of specific cultural/religious groups that require a special treatment. This aspect is also in line with evidences from the review of the training packages and the findings from the first ESG meeting.

Training should allow trainees to get a general understanding of cultural characteristics, differences and their impact on individual and crowd behaviour.

**Management of Critical Passengers and Groups of Passengers**

Several example of real critical behaviours and situations have been reported (e.g. passengers refusing to take unfamiliar paths during emergencies, fighting for safety equipment during emergency operations, passengers refusing to take unfamiliar paths during emergencies).

The training should present examples of passengers' critical behaviours based on real situations and experiences. It should also provide trainees with examples and strategies to manage multicultural groups.

**Training Format**

Practical simulations and emergency drills seem to be well covered by the current training courses. Although front-end operators receive a regular training about standard procedures during ordinary as well as emergency situations, these procedures and regulations do not rely on real and specific situations.

Training should present practical activities such as simulations, group exercises, gaming based on real situations, where trainees are allowed to practice their skills.

### Table 13: Mapping between key findings from interviews and related training requirements
4 Literature review on crowd behaviour

This section aims to summarise some of the most relevant findings come out from the literature review on cross-cultural and crowd behaviours that could be used as useful input to identify potential contents on multicultural and crowd behaviour for the development of the training course.

The “Review and Critical Analysis of Multi-Cultural Crowd Behaviour in Emergencies” provides a report of the literature and a critical analysis of multi-cultural crowd behaviour during emergencies, as well as key lessons which summarize the most significant findings. The literature analysis covered different research areas such as: 1) social psychological theories of crowd behaviour, 2) individual differences and crowd behaviour, 3) collective movement in crowds and 4) navigation and movement of people in urban environments. This enables the adoption of an inter-disciplinary approach to crowd behaviour in order to establish a wider vision to differentiate groups from different countries, and identify, whether possible, recurrent pattern of cultural behaviour that could be used as a useful input for the other activities of the project (for further information see D1.1 [15]).

4.1 Findings from literature review on crowd behaviour

The key lessons identified in D1.1 represent a useful input to take into account social aspects and characteristics of crowds, individual differences, characteristics of collective movements and key aspects of navigation movements. On the whole, for the development of a training package which aims to foster knowledge on the management of multicultural factors in emergency situations; the key lessons represent a precious theoretical framework and training material on cross-cultural and crowd behaviour. The table below reports the key lessons came out from D1.1 and the related new contents for the training.

In this section only the key lessons considered relevant for the development of the training package were reported (for a complete list of the key lessons see D1.1).

<table>
<thead>
<tr>
<th>Research area</th>
<th>Key Lessons</th>
<th>New training contents from Literature review</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCIAL PSYCHOLOGICAL THEORIES OF CROWD BEHAVIOUR</td>
<td>In emergencies, people generally try to find their friends and relatives, and are drawn towards familiar places.</td>
<td>Security personnel should be trained to take into account the main needs that can drive passengers during emergency situations. In particular, they should be trained to help passengers of different nationalities to find the relatives and friends they were training with.</td>
</tr>
<tr>
<td>SOCIAL PSYCHOLOGICAL THEORIES OF CROWD BEHAVIOUR</td>
<td>Social identities are powerful influences on passengers’ behavior. People act favorably towards those they perceive to be in their own in-group, and less favorably towards those seen as members of out-groups.</td>
<td>Security personnel/ Front-end operators should be trained about the importance of considering passengers’ perceived identities: People act favorably towards those they perceive to be in their own in-group, and less favorably towards those seen as members of out-groups.</td>
</tr>
</tbody>
</table>

2 In sociology and social psychology, an in-group is a social group to which a person psychologically identifies as being a member. By contrast, an out-group is a social group with which an individual does not identify.
<table>
<thead>
<tr>
<th>When managing crowds, aggressive or confrontational approaches are ineffective and often escalate trouble</th>
<th>Security personnel, front-end operators, police should be trained to communicate with crowd members in order to encourage them to moderate their behaviour and work together to stop the trouble-makers in the crowd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>People from the same country share and perceived the same views and perceptions of the world.</td>
<td>Front-end operators, security personnel should be trained to take into account and to be aware about cultural and social differences of passengers. (e.g. people in richer countries are more likely to organize themselves for collective action. In poor societies, collective action occurs mostly within in-groups (Welzel, 2010))</td>
</tr>
</tbody>
</table>
| Although crowds can behave in powerful collective ways, authorities should not forget that crowd members have their own personal characteristics, which also influence their behaviour. | Crowd management professionals should be trained to be aware that people in a crowd still retain their individual characteristics to some extent; and these may influence the way crowd members behave. Some example of individual characteristics that should be taken into account are:  
- male crowd members and intoxicated crowd members are both more likely to behave aggressively (gender)  
- the more their existing social identity aligns with the crowd’s social identity, such as being a supporter of a particular football team among other such supporters, the more powerful the crowd’s social identity effects will be (social identity).  
- the more familiar some people are with the physical environment, the more likely they are to deviate from the movement of other crowd members if necessary (familiarity with the environment).  
- drunken people are more likely to be aggressive towards passengers and personnel (intoxication) |
<p>| The political, social, and economic development of countries is a powerful indicator of the behaviours of their citizens. People from more developed nations are more likely to: (a) apply laws consistently and expect equivalent treatment in return, (b) believe circumstances to be within their | Security personnel and crowd managers should be trained to take into account social, political and economic differences of crowd members such as those indicated in point 6. |</p>
<table>
<thead>
<tr>
<th>COLLECTIVE MOVEMENT IN CROWDS</th>
<th>IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COLLECTIVE MOVEMENT IN CROWDS</strong></td>
<td>IMPACT</td>
</tr>
<tr>
<td>personal control, (c) challenge and question information from authority figures, and (d) take fewer risks.</td>
<td>Front-end operators and security personnel should be aware about cultural differences and their implication on behavior.</td>
</tr>
</tbody>
</table>
| Power distance refers to the extent to which less powerful citizens accept that power in society is distributed unequally. Member of different groups can be treated differently based on their group membership e.g. powerful individuals get special treatment and various privileges that less powerful people are denied. | Some examples from literature review are:  
  - in cultures with a high power distance, subordinates are much more reluctant to challenge their superiors when they believe they are making an error;  
  - people from some countries, such as Korea, may be more reluctant to challenge the correctness of instructions given to them by crowd management professionals (especially those in senior roles). |
| Many crowd simulation models have assumed that people travel alone, as isolated individuals, ignoring the reality that people frequently travel in sub-groups (e.g., families, couples, or groups of friends).  
  Data suggested that up to 70% of crowd members move in small groups of 2-5 people. Furthermore, when walking in such groups, they found that people often position themselves in a reverse-V formation while moving forward (i.e., in the opposite direction to the arrow-like V-formation of a flock of birds), particularly in higher density crowds | During training courses, simulation model should be used to simulate these types of behaviours in order to allow front-end operators to be aware about crowd member movements, configurations and potential consequences. |
| High crowd density, particularly in larger crowds, is a major risk factor for crowd disasters involving crushing. | Security operator needs to receive training about the importance of monitoring and managing people in transport terminals. |
| Fast evacuations are critical for survival in emergencies such as fires. A large proportion of people's evacuation time is accounted for by responding to situations or alarms. However, when a fire alarm sounds, where many people are accustomed to fire drills or false alarms, the evacuation time response will be delayed | Authorities, front-end operators should be trained about how to warn/inform readily a multicultural crowd about the occurrence of an emergency, and how to instruct them to evacuate if needed. This may include, for instance, accompanying verbal instruction in the local language and standard English. These verbal instructions should also be accompanied with hand gestures or signs (understandable by a multicultural crowd) indicating which direction to evacuate in, so that people who do not |
People from less developed countries leave less space between themselves and others in crowds, leading to higher crowd densities and greater accident risks.

Train security personnel about how proximity varies across the members of different cultures, and the risk it may bring (i.e. risk of quarrel, discussions in normal situations, as well as increased risk of injury during emergency ones).

People are heavily reliant on identifiable landmarks when navigating around urban environments such as transport terminals, particularly when in unfamiliar environments.

Physical features of transport terminals should be distinct and identifiable to assist the efficient navigation of people in crowds.

In familiar environment people internalise cognitive maps and use them to help them navigate.

Security and Crowd management personnel should be aware that people in familiar environment will have the tendency to behave and move automatically, rather that consciously, and that this tendency is very persistent, even in emergencies. So, for instance people will take the familiar route in order to escape, even if this is not the safest one (e.g. King’s Cross fire). Thus, in emergencies, security personnel should not take for granted that passengers will move as instructed, especially when instructed to take unfamiliar paths.

Signs and maps in transport terminals should be designed carefully to ensure that they are quickly and clearly understood by crowd members. Signs should use everyday language and/or intuitive symbols (for foreign language speakers), avoid excessive information, and be placed repeatedly along routes.

**Table 14: Key Lessons and new content on cross-cultural and crowd behaviour**

Some of these new contents on individual cultural differences, cross-culture and crowd behaviour contributed to the definition of the initial list of training goals as reported in sections 6. Furthermore, these contents from the literature review will be used to detail the content and develop the material for the training package that will be presented in D5.2.
5 Key Scenarios of application

Transport hubs can be defined as dynamic and complex environments. Front-end operators, first responders, police, safety and security operators from all transport modes are struggling in highly complex environments and they need effective methods for minimizing the risk of a crisis and managing crisis situations. Furthermore, the behaviours and skills required to solve an operative situation are always multi-dimensional. Most of the time, as reported in section 3.3.2, operators perceive a mismatch between the real world and the theoretical aspects covered by the mandatory trainings. In this sense, scenarios might represent a useful means to fill the gap.

Scenario Based Training (SBT) is a training method that provides a context in which individuals and groups can experience and interact with a possible future ([16], [17]). In this perspective, integrating relevant scenarios into a training program puts the learner in the role of a problem solver responding to realistic workplace problems or situations. SBT immerse learners into situations where they are allowed to practice their skill sets. SBT presents learners with an interactive story and places them in a specific environment that enable them to understand better their environments in order to avoid critical events and to put in place efficient and effective strategies for coping with different types of challenges.

Relative to the IMPACT project, the following preliminary set of training scenarios has been identified:

1. Evacuation due to a high-risk emergency event: Fire in Train Station
2. Emergency Medical Provision: Unknown disease with severe symptoms spreading very fast
3. Management of large group of people in an unfamiliar environment: Hundreds of passengers stranded in the terminal building
4. Changes to official security procedures: “Terrorist threat on board the ship”
5. Passenger misbehavior: A person under the influence of alcohol creates chaos by misbehaving

Such a list includes the possible scenarios that could be used as real case to lead the construction of the training practical activities. Note that the scenarios should be further refined based on the consolidated outcomes from data collection.

5.1 Scenarios development process

The following phases were followed in order to define the initial version of the IMPACT scenarios:

1. Collection of scenarios proposed by IMPACT project partners. During the IMPACT KOM (Rome) a scenario elicitation exercise was launched. IMPACT partners were invited to come up in the first months of the project with a list of proposed emergency scenarios that contain some multicultural issues and that could be relevant for the project. This phase of the work resulted in the collection of about 20 emergency scenarios over the period June-July 2015.
2. Refinement with internal and external end-users. In this phase the scenario list was revised based on initial feedback collected from the stakeholders, both internal and external to the project. As a results of this work some new potentially relevant scenarios were added to the list;
3. **Consolidation of selected scenarios by means of a group exercise.** The scenario list was further consolidated during a group exercise that took place in the context of IMPACT progress meeting no. 2 (Sofia, 15-16 Sept 2015). The group exercise was needed because some of the scenarios developed in the previous phase partly overlapped each other; some others were developed at a different level of abstraction. Therefore, the exercise allowed to define a more robust scenario classification scheme that comprehended the scenarios developed in the previous phase. The final part of the work consisted of mapping of the scenarios to the domains for which each scenario is most relevant.

4. **Initial corroboration of scenarios with security and safety experts.** This phase of the work took place during the 1rst ESG meeting in Amsterdam in November 2015. One slot of that meeting was dedicated to presenting the IMPACT security and safety scenarios to the participating experts. A subsequent slot collected their feedback by means of a questionnaire and a structured group discussion (for further detail on this phase the reader is referenced to the full 1rst ESG report, which is part of IMPACT deliverable D1.2).

From phase 1 to 3 the following requirements drove the scenario creation and selection process:

- **Likelihood that multicultural factors may occur in the scenario.** IMPACT focuses on multi-cultural aspects in emergency prevention and management; therefore, it has to focus on situations where such aspects may actually emerge;
- **Interest for the project stakeholders.** IMPACT results need to be used by end-user organisations. Therefore, it is important to focus IMPACT on scenarios that are relevant or challenging for these organisations;
- **Coverage of different emergency situations, not just evacuation.** The final scenario list was intended to cover not just evacuation situations. These are just one type of emergencies faced by transport operators, but other types of situations may occur which include multi-cultural factors and that are considered as emergencies from end-user organisations;
- **Coverage of both safety and security aspects.** IMPACT focuses on the management of the public in emergency situations, regardless of whether they originate from a security event (e.g., terroristic or criminal attack) or a safety event (e.g. accident);
- **Coverage of both prevention and management.**
- **Feasibility.** The focus was on scenarios that can be modelled and for which relevant data could be collected in the scope of the IMPACT project.

### 5.2 Scenario description

The following tables describe the five relevant IMPACT scenarios. A first attempt of mapping the scenarios to the focus areas\(^3\) for which each scenario is most relevant has been provided.

\(^3\) The training focus areas included in the table below correspond to those arisen from the interviews (see section 3.3.2).
### Evacuation due to a high-risk emergency event: Fire in Train Station

#### Domain
Railways- underground multi-layer multi-modal railway station of a European capital at peak hour.

#### Narrative description
Fair hosts an international high-tech business event involving participants from all over the world but with predominance of visitors from Far East and Arabic countries.

The train no. T001 of line A, arriving from the fair full of participants to the event, due to unknown reasons, has fire on board and when it stops at the platform (on level -2) and doors are open, a dense black eye-irritating smoke start to diffuse in the platform. At the same time, the train no. T002 coming from the opposite direction (the international airport) arrives at the platform full of foreign families with children and luggage.

The traffic control system, alerted by the smoke sensors, stops the traffic and orders the evacuation of the station.

#### Trigger event
Fire on board

#### Multicultural / Critical factors involved
Management of multi-cultural crowd:
- mix of business highly-educated passengers with nationalities from all over the world.
- mix of European low- to middle-class families with children and luggage.
- mix of passengers evacuating the train starts the interaction with the ordinary passengers using the hub at peak hours

Management potential panic situations of a multi-cultural crowd:
- difficulties in reading signs and understanding orders due to differences in language and symbols understanding
- inability to move fast due to children and luggage
- Priorities may change according to cultural characteristics (families may try to save their children, business men may decide that being VIPs they should have the right to go first ...)
- Convince the crowd to follow a non-obvious path.

Smoke inhalation may cause severe health problems to be treated outside the hub

#### Agents involved
- Safety and security staff
- Traffic controllers
- First responders (ambulance)
- Police
- Civil protection
- Ministry of Interior and transport

<table>
<thead>
<tr>
<th><strong>Table 15</strong>: Scenario 1 - Evacuation due to a high-risk emergency event</th>
<th><strong>Training focus areas</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Multicultural crowd management</td>
<td>Communication skills</td>
</tr>
<tr>
<td>Decision Making</td>
<td></td>
</tr>
</tbody>
</table>
### Emergency Medical Provision: Unknown disease with severe symptoms spreading very fast

<table>
<thead>
<tr>
<th>Domain</th>
<th>Airport</th>
</tr>
</thead>
</table>
| **Narrative description** | Highly contagious disease spread at the Airport. The number of affected people cannot be estimated correctly because of the panic and quick diffusion of the virus.  
Crisis Management Board of AA takes the decision to isolate all infected and/or potentially infected people including passengers and operational personnel related to flight and terminal building.  
The crisis spreads to air traffic operations and other flights. Because of the huge crowd and many people in the terminals, the other flights are delayed or cancelled. |
| **Communication skills** | |
| **Intercultural competences** | |
| **Multicultural crowd management** | |
| **Trainig focus areas** | |

### Trigger event
- Spread of an unknown disease

### Multicultural/Critical factors involved
- Management of different demographic and cultural groups in the same environment (e.g. hajj passengers, elderly).
- Management of individual reaction to critical and emergency situations (e.g. panic, aggressive behaviour).
- Difficulty providing passengers with punctual and detailed information about the situation and the timing.

### Agents involved
- Airport management, Police, Private Security Forces, Governor, National Civil Aviation Authority, national Air Navigation Service Provider (ANSP)

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### Table 16: Scenario 2 - Emergency Medical Provision

---

### Management of large group of people in an unfamiliar environment: Hundreds of passengers stranded in the terminal building

<table>
<thead>
<tr>
<th>Domain</th>
<th>Large European airport</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Narrative description</strong></td>
<td>Passengers start to go to information and airlines’ desks to ask information about the delay, some start complying. Circulation area is reduced as there are long queues everywhere, not just at information desks and gates, but also at toilets, bars and restaurants; it is difficult for many passengers to find a comfortable place to sit: all benches and chairs are occupied, so that many people are sitting or resting on the floor. Passengers of different ethnic groups, from western and eastern business travelers, to families, as well as Muslim pilgrims</td>
</tr>
<tr>
<td><strong>Communication skills</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Intercultural competences</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Trainig focus areas</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Trigger event
- Bad weather conditions the airport authority and airlines
declare that all flights will be delayed

Multicultural/Critical factors involved
- Forced proximity (i.e. contiguity);
- Long queues;
- Scarcity of food and beverages;
- Lack of information;
- Uncontrolled reactions;
- Anxiety, panic;
- Riots against personnel;
- Refusal to follow instructions;
- Verbal/physical aggression between stranded passengers (triggered for instance by “fights” for scarce resources such as chair, food and water);
- Self-organisation, i.e. group of passengers acting based on their own initiative (positive or negative)

Agents involved
Airport management, Police, Private Security Forces, Governor, National Civil Aviation Authority, other international airports, related Military ATC Units, Ministry of Interior, Ministry of Transportation, and Presidency of Religious Affairs, Local Health Administration, Media, Terminal Staff.

Table 17: Scenario 3- Management of large group of people in an unfamiliar environment

<table>
<thead>
<tr>
<th>Changes to official security procedures: “Terrorist threat on board the ship”</th>
<th>Training focus areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain</td>
<td>Maritime</td>
</tr>
<tr>
<td>Narrative description</td>
<td>A cruise ship with passengers on board rescue migrants at sea. After being taken on board, some refugees express their dissatisfaction with the fact that they could be escorted to the neighbouring country from which they came from. Therefore, they exert pressure on the Captain to change the ship’s course. The captain is informed that among refugees there may also be some terrorists. After being informed by the Captain, the Ship-owner asks for assistance from the Navy.</td>
</tr>
<tr>
<td>Trigger event</td>
<td>Terrorist threat on board the ship causes security alert in seaports</td>
</tr>
</tbody>
</table>
| Multicultural/Critical factors involved | - Some of the migrants are in a very bad health condition and it increases the panic beyond the passengers and the crew.  
  - All the people on ship are under stress due to the terrorist threat. It makes people mutually suspicious, and can lead to arguments and fights.  
  - Those who do not understand the language do not follow the instructions of the crew. |
Agents involved
Captain and the ship’s crew, Port Authorities, Police, Governor, Maritime Administration, Ministry of Interior, Ministry of Health, Ministry of Transportation, Ministry of Defence, Navy, Local Health Administration, Border Guards, and SAR.

Table 18: Scenario 4- Changes to official security procedures

<table>
<thead>
<tr>
<th>Passenger Misbehaviour: “A person under the influence of alcohol creates chaos by misbehaving”</th>
<th>Training focus areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Domain</strong></td>
<td><strong>Interpersonal skills</strong></td>
</tr>
<tr>
<td><strong>Narrative description</strong></td>
<td><strong>Intercultural skills</strong></td>
</tr>
<tr>
<td>The general alarm is sounded on a cruise ship, and the passengers are invited by the crew to reach the relevant station, and to wear the lifejackets. Some passengers are under the influence of alcohol, and neither understand the seriousness of the situation nor follow the crew instructions. A problem occurs also between some nationalities (Russia-Ukraine) based on political issues. Religious differences are also a source of antagonisms. This causes embarrassment and fear among other passengers and crew personnel. The crew is trying to separate drunken passengers from Russia and Ukraine who obstruct the efficient rescue operation.</td>
<td></td>
</tr>
<tr>
<td><strong>Trigger event</strong></td>
<td><strong>Interpersonal skills</strong></td>
</tr>
<tr>
<td>A person under the influence of alcohol creates chaos by misbehaving.</td>
<td></td>
</tr>
<tr>
<td><strong>Multicultural/Critical factors involved</strong></td>
<td><strong>Intercultural skills</strong></td>
</tr>
</tbody>
</table>
| Some of drunken passengers become aggressive toward immigrants. Part of the crew is engaged in solving and mitigating conflicts among drunken passengers.  
  - The crisis starts with the severely intoxicated passenger’s misbehavior.  
  - Some immigrants, especially women with children do not understand the commands issued by the crew due to language problems.  
  - Furthermore, some passengers who have already boarded the lifeboats try to move back to their cabins for things they left behind. | |
### 6 Final list of training requirements and mapping of training requirements

Based on the findings gathered from the data collection activities (see section 3.3.1 and 3.3.2) the list of requirements to be considered in the implementation of the IMPACT training package is here summarised. The training requirements resulted from the interpretation of the findings achieved from the 1st ESG meeting and from the interviews with front-end operators. This list will be further enriched with findings from WP1 “data collection”.

<table>
<thead>
<tr>
<th>Training requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- The training should focus on multiple actors situations taking into account relevant aspects that can occur in real situations (e.g. time pressure, passenger behaviours and attitudes, internal state of the front-end operators, stress, cooperation with colleagues), in order to improve the preparedness to respond to emergency situations (see Table 13).</td>
</tr>
<tr>
<td>2- Provide trainees a methodology to assess and manage risks related to cultural aspects (see Section 2.4)</td>
</tr>
<tr>
<td>3- IMPACT cultural-based security training package should consider relevant aspects that can occur when managing unruly passengers or unusual situations, providing example from real experiences (see Table 13).</td>
</tr>
<tr>
<td>4- The training package should present key advices to foster an effective communication in real operative situations. It should also provide trainees with practical examples of common misunderstandings and strategies to avoid communication bias (see Table 13).</td>
</tr>
<tr>
<td>5- Training should allow trainees to get a general understanding of cultural characteristics, differences and their impact on individual and crowd behaviour (see Table 12 and Table 13).</td>
</tr>
<tr>
<td>6- The training should present examples of passengers’ critical behaviours based on real situations and experiences. It should also provide trainees with examples and strategies to manage multicultural groups (see Table 13).</td>
</tr>
<tr>
<td>7- Training should present practical activities such as simulations, group exercises, gaming based on real situations, where trainees are allowed to practice their skills (see Table 13).</td>
</tr>
<tr>
<td>8- Format and duration of the training package focusing on multicultural aspects in emergencies need to account for the limited resources that the relevant transport organisations can allocate to it (see Table 12).</td>
</tr>
</tbody>
</table>

Furthermore, based on sections 2, 3, 4 and 5 the following table presents a first attempt to relate the training requirements with the following aspects:

- **Focus areas**: These include critical skills and necessary competences highlighted by the interviews (see section 3.3.2).
- **List of potential training goals**: Includes broad competencies related to a specific focus area. This initial potential list is based on an analysis of the interviews and a preliminary brainstorming session with trainer experts in order to draw up a list of training goals associated to the focus areas arisen from the empirical activities.

The new contents from the literature review (see section 4.1) have been used to identify the potential training goals for the focus area on multicultural crowd management and interpersonal skills. In addition, these materials will be used as a first starting point to detail the training contents in D5.2.
- **Scenarios** generated in the first phases of the project and validated during the 1st ESG meeting. Table 21 reported a possible match between the 5 scenarios generated and the focus areas they could cover as shown in section 5;

- **Target audience** of the IMPACT cultural-based security training package. The target audience is mainly composed by: national and local authorities, Safety and security managers of the Transport Hubs, Security Personnel of the Transport Hubs and first responders;

- **Training format** - based on training requirements 7 and 8 (see table above) an initial suggestion for the training format have been presented. This represents a first attempt to define the training format that will be further defined in D5.2 where the most appropriate educational format for the delivery of the course material will be selected. The rationale behind this suggestion is the following:
  - *Simulation environments* - simulations of virtual environments will be used to allow trainees to practice their competences through practical activities. The simulations have been suggested for the two scenarios that will be modelled by WP2 (Evacuation due to a high-risk emergency event: Fire in Train Station and Management of large group of people in an unfamiliar environment: Hundreds of passengers stranded in the terminal building);
  - *E-learning* could be used as a useful training format that can reduce costs (see training requirement n.7) and it also allows trainees to follow the modules whatever they want;
  - *Group exercises and Gaming* could be used as training methods to foster active participation among trainees.

This table represents a starting point for the design and development of the cultural-based security training package that will be detailed and further defined in D5.2 based on the main results coming from WP1, WP2 and WP4.

<table>
<thead>
<tr>
<th>Training requirements</th>
<th>Training Focus areas</th>
<th>Potential list of training goals</th>
<th>Key scenarios</th>
<th>Target Audience</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>The training should focus on multiple actors situations taking into account relevant aspects that can occur in real situations (e.g. time pressure, passenger behaviours and attitudes, internal state of the front-end operators, stress, cooperation with colleagues).</td>
<td><strong>Decision making/task management</strong></td>
<td>Understand the ability to: Setting priorities Delegating Task allocation and scheduling Deal with uncertain situations Coordinate with colleagues/other organisations Assess and manage potential risky situations Develop a sense of</td>
<td>Evacuation due to a high-risk emergency event: Fire in Train Station</td>
<td>National and Local Authorities Safety and security managers of Transport Hubs Security Personnel of Transport Hubs First Responders</td>
<td>Simulations environments e-learning</td>
</tr>
</tbody>
</table>

4 The target audience is referred to the generic training requirements and to the high level training focus area, while the specific training goals may apply just to some of the targets identified.
<table>
<thead>
<tr>
<th>IMPACT cultural-based security training package should consider relevant aspects that can occur when managing unruly passengers or unusual situations, providing example from real experiences.</th>
<th>Interpersonal skills</th>
<th>Understand the ability to:</th>
<th>Changes to official security procedures: “Terrorist threat on board the ship”</th>
<th>Security Personnel of Transport Hubs First Responders</th>
<th>Group exercises Gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>The training package should present key advice to foster an effective communication in real operative situations. It should also provide trainees with practical examples of common misunderstandings and strategies to avoid communication bias.</td>
<td>Communicating skills</td>
<td>Learn how to:</td>
<td>Evacuation due to a high-risk emergency event: Fire in Train Station Emergency Medical Provision: Unknown disease with severe symptoms spreading very fast Management of large group of people in an unfamiliar environment: Hundreds of passengers stranded in the terminal building Changes to official security procedures: “Terrorist threat on board the ship”</td>
<td>Security Personnel of Transport Hubs First Responders</td>
<td>Simulatio n environments Group exercises Gaming</td>
</tr>
<tr>
<td>Training should allow trainees to get a general understanding of cultural characteristics, differences and their impact on individual and crowd behaviour</td>
<td>Intercultural competences</td>
<td>Learn how to:</td>
<td>Emergency Medical Provision: Unknown disease with severe symptoms spreading very fast Management of large group of people in an unfamiliar environment: Hundreds of passengers stranded in the terminal building Changes to official security procedures: “Terrorist threat on board the ship”</td>
<td>National and Local Authorities Safety and security managers of Transport Hubs Security Personnel of</td>
<td>Simulatio n environments Group exercises Gaming</td>
</tr>
<tr>
<td>typicality (develop patterns and experiences into prototypes in order to judge trigger events as ‘typical’ or ‘emergency’)</td>
<td>Privacy and security training package should consider relevant aspects that can occur when managing unruly passengers or unusual situations, providing example from real experiences.</td>
<td>Typicality (develop patterns and experiences into prototypes in order to judge trigger events as ‘typical’ or ‘emergency’)</td>
<td>Typicality (develop patterns and experiences into prototypes in order to judge trigger events as ‘typical’ or ‘emergency’)</td>
<td>Typicality (develop patterns and experiences into prototypes in order to judge trigger events as ‘typical’ or ‘emergency’)</td>
<td>Typicality (develop patterns and experiences into prototypes in order to judge trigger events as ‘typical’ or ‘emergency’)</td>
</tr>
</tbody>
</table>

**Interpersonal skills**

- Understand the ability to:
  - deal with people (understand the reason why a person is aggressive and start from this to solve the situation)
  - be assertive
  - manage different Cognitive capacities, Stress and Panic
  - develop Self-confidence knowledge of one’s own desires, strengths, weaknesses, and emotional stability

**Communicating skills**

- Learn how to:
  - Develop knowledge of basic words in different languages.
  - Recognise and use hand-gesture/non verbal communication
  - Improve information sharing, effective communication with co-workers from different culture/age/sex
  - Improve effective standard communication strategies in emergency and evacuation

**Intercultural competences**

- Learn how to:
  - Deal with people of different culture/age/sex
  - Gain knowledge about other cultures and other people’s behaviours (social, political, economical differences, attitudes, habits,
<table>
<thead>
<tr>
<th>Multicultural crowd management</th>
<th>Improve the management and coordination with staff team with different culture/age/sex</th>
<th>Improve the management and coordination with staff team with different culture/age/sex</th>
<th>Improve the management and coordination with staff team with different culture/age/sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>The training should present examples of passengers’ critical behaviours based on real situations and experiences. It should also provide trainees with examples and strategies to manage multicultural groups.</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
</tr>
<tr>
<td>Learn how to:</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
</tr>
<tr>
<td>understand the main needs that can draw multicultural crowd during emergency</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
</tr>
<tr>
<td>manage and monitor collective movements of multicultural crowd (be aware about social dynamics, individual characteristics that may influence the way crowd members behave)</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
</tr>
<tr>
<td>manage collective movements and composition of crowd (e.g., density, group formation, direction, speed)</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
<td>Improve the management and coordination with staff team with different culture/age/sex</td>
</tr>
<tr>
<td>Evacuation due to a high-risk emergency event: Fire in Train Station</td>
<td>Evacuation due to a high-risk emergency event: Fire in Train Station</td>
<td>Evacuation due to a high-risk emergency event: Fire in Train Station</td>
<td>Evacuation due to a high-risk emergency event: Fire in Train Station</td>
</tr>
<tr>
<td>Transport Hubs First Responders</td>
<td>Transport Hubs First Responders</td>
<td>Transport Hubs First Responders</td>
<td>Transport Hubs First Responders</td>
</tr>
<tr>
<td>National and Local Authorities</td>
<td>National and Local Authorities</td>
<td>National and Local Authorities</td>
<td>National and Local Authorities</td>
</tr>
<tr>
<td>Safety and security managers of Transport Hubs</td>
<td>Safety and security managers of Transport Hubs</td>
<td>Safety and security managers of Transport Hubs</td>
<td>Safety and security managers of Transport Hubs</td>
</tr>
<tr>
<td>First Responders</td>
<td>First Responders</td>
<td>First Responders</td>
<td>First Responders</td>
</tr>
</tbody>
</table>

Table 21: Mapping of training requirements with training focus areas, training goals, key scenarios of application, target audience and format.
7 Concluding comments and future steps

This document presents the initial training requirements for the IMPACT cultural-based security training package that will be developed in D5.2. The document was conceived to meet the following objectives:

1. Based on the review of the mandatory trainings in the different transport modes, identify the training gaps, the main training areas that are still not well covered by the current training packages (see section 2);
2. Based on the data collection activities, identify the currents training needs from the operational perspective such as the key training areas and skills that transport hubs operators need to improve (see section 3).

The review of the current training packages in the three transport modes and the various data collection activities contributed to the definition of the initial training requirements that will inform the development of the IMPACT training package. On the whole, as reported in section 6, eight training requirements emerged from the comparison between the review of the training courses and the analysis of the empirical findings (see Table 20).

Moreover, to better support the design of the training package in D5.2 a mapping of the training requirements has been included in section 6. This mapping will be the starting point for the definition of the training structure, contents, material, format and target.

In particular, as presented in Table 21 this mapping is a preliminary attempt to merge the following focus areas with a potential list of training goals:

- **Decision making/task management:**
  - Setting priorities
  - Delegating
  - Improve task allocation and scheduling
  - Deal with uncertain situations
  - Coordinate with colleagues/other organisations
  - Assess and manage potential risky situations
  - Develop a sense of typicality (develop patterns and experiences into prototypes in order to judge trigger events as ‘typical’ or ‘emergency’)

- **Interpersonal skills:**
  - Deal with people (understand the reason why a person is aggressive and start from this to solve the situation)
  - Be assertive
  - Manage different Cognitive capacities, Stress and Panic
  - Develop Self-confidence knowledge of one’s own desires, strengths, weaknesses, and emotional stability

- **Communication skills:**
  - Develop knowledge of basic words in different languages
  - Recognise and use hand-gesture/non-verbal communication
  - Improve information sharing, effective communication with co-workers from different culture/age/sex
  - Improve effective standard communication strategies in emergency and evacuation
• **Intercultural competences:**
  o Deal with people of different culture/age/sex
  o Gain knowledge about other cultures and other people’s behaviours (social, political economical differences, attitudes, habits, believes)
  o Improve the management and coordination with staff team with different culture/age/sex

• **Multicultural crowd management:**
  o Understand the main needs that can draw multicultural crowd during emergency
  o Manage and monitor collective movements of multicultural crowd (be aware about social dynamics, individual characteristics that may influence the way crowd members behave)
  o Manage collective movements and composition of crowd (e.g. density, group formation, direction, speed)

Based on the assessment of the existing training programmes and procedures, the work conducted in task 5.1 and the identified requirements emerged, the training design process will be carried out aiming at designing training activities, paying particular attention to the definition of the most appropriate educational formats to the delivery of the course material.

The figure below summarises the process will be followed in the next task of WP5. Task 5.2 will assemble the mapping of training requirements from D5.1 and the additional findings from:

- WP1- Task 1.2 “Empirical Data Collection in Transport Hubs” and Task 1.3 “IMPACT theoretical framework for cross cultural risk prevention and emergency management in the transport sector”.
- WP2 – Task 2.1 “Translation and integration of theoretical framework into conceptual model” and Task 2.2 “Development of a computational agent based model of crowd behaviour”.
- WP3- Task 3.3 “Design of the Cultural Risk Computer Based Training”.
- WP4- Task 4.1 “Cross-cultural emergency communication framework requirements definition”.

These findings will be used to develop the modules, lessons and target group exercises of the scenario-based Training Package. Furthermore, the design phase will follow an iterative process with the involvements of external stakeholders and operators to guarantee that the operators’ needs will be taken into account (see Figure 4).
Moreover, the final task of WP5 (Task 5.4) aims to implement the training programme developed in Task 5.2 and 5.3. In particular task 5.4 will deliver the training programme by means of at least three pilot courses to validate its effectiveness.

It is important to remark at this point that the actual adoption of the IMPACT training programme requires the IMPACT project to actively interact with policy makers and regulators, in order to foster the inclusion of the IMPACT cultural based training package in current mandatory training. This is needed because the transport domains addressed by IMPACT are fairly standardised, and the training is strongly regulated at both national and European level. Thus paying attention to the interaction with the relevant stakeholders since this phase of the project can guarantee that the IMPACT training will have a life after the termination of the project—i.e. it will enter the target field of practice, thus ensuring a positive transfer of the knowledge gathered in the project to the to the relevant (security) stakeholder organisations.

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**Figure 4: Process in Task 5.2**

<table>
<thead>
<tr>
<th>Inputs from previous activities</th>
<th>Design the educational format</th>
<th>Develop IMPACT Cultural based training course</th>
</tr>
</thead>
</table>
| Map of the training requirements (D5.1) | A set of group of training activities and materials (e.g. modules, lessons, contents and format) will be defined | Module 1:  
- Lesson 1  
- Learning objective  
- Exercise ... |
| Findings from WP1, WP2 WP3, WP4 | | Iterative validation with external stakeholders and safety/security operators |
8 References

### Appendix A  
**Training Course in the aviation domain**

#### IATA security training package:

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Description</th>
<th>Objectives</th>
<th>Contents</th>
<th>Target audience</th>
</tr>
</thead>
</table>
| **Airport Security Operations Optimization** | This course teaches the basics of operational aviation security (AVSEC), providing an overview of the latest security issues, threats, and technological developments. With a focus on ICAO and IATA documentation, gain tools to implement international security procedures | • Learn the structure and roles of major aviation security organisations | • International aviation security laws and legal obligations  
• Current threats and risks to the aviation industry  
• Control of access to airport security restricted areas  
• Screening of passenger and cabin baggage  
• Risk assessment and contingency planning  
• Emerging technologies and equipment  
• Command and control of response to major incidents | • Representatives from civil aviation authorities  
• Airline and airport-based and government personnel with AVSEC responsibilities  
• Law enforcement personnel responsible for the overview of security measures |
| **Aviation Security Awareness** | Security is a concern for everyone in the industry, affecting virtually all areas of operation. Whether you work with passengers, cargo or at a security checkpoint, you have a role in keeping the industry safe. This course introduces you to the security measures and regulations you need to know to work | • The types of threats to consider in a security risk assessment  
• Steps for enforcing security in your work areas  
• The role of human factors in maintaining security | • Current threats to the aviation industry  
• Aviation security regulations and the international organizations behind them  
• Airport access control for people and vehicles | • Entry-level security staff  
• Industry personnel working with passengers or cargo |
responsibly in the industry. It also provides examples of practices you can apply in your workplace to identify and prevent potential security threats.

| **Aviation Security Management Advanced** | **skills to:** | **implementing international and national security legislation (EU, TSA)**  
- Applying Annex 17, ICAO and IATA security manuals  
- Contract management and Service Level Agreements (SLA)  
- In-house versus outsourced aviation security  
- Controlling the flow of passenger and baggage  
- Evaluating facilitation and Security Management Systems (SeMS)  
- Ensuring the security of cargo, catering and stores  
- Vulnerability assessments of airport facilities  
- Guaranteeing asset protection  
- Preventing fraud and smuggling  
- Responding to major security emergencies | **Managers from airports, airlines or civil aviation authorities**  
- Police and border control authorities  
- Transport administration representatives |
### Aviation Security Management

Learn essential management and administration techniques to run business while complying with national and international legislation. Through daily classroom simulations, test your ability to work under pressure in crisis situations and respond to common problems you may face in your daily operations.

- Align the organization’s procedures with civil aviation security legislation
- Improve how you utilize personnel, equipment and budget
- Apply industry best practices for recruitment, training and people management
- Develop the ability to respond to crisis situations

### Predictive Passenger Screening

Discovering the most recent screening methods and learn how they can enhance current airport operations. Learning to detect suspicious signs and behaviour before even making contact with a passenger to increase efficiency and reduce waiting time.

- Identify, anticipate security and terror threats
- Assess a passenger’s level risk using a variety of information obtaining tools
- Create a culture of awareness within

### Ensuring continued compliance with aviation security standards

- Preparing organizations for a security audit by third parties
- Assessing threats and protecting equipment, locations and other assets
- Identifying and managing security risks
- Integrating human factors into your organization
- Building a security culture in non-security personnel
- Communicating with stakeholders in counter security entities in emergency situations

**This interactive course involves multiple simulation exercises:**

- Security threat assessment
- Security operations planning
- Management and problem solving

### Experienced airport and airline managers

- Passenger and cargo operations providers
- Police and border control authorities
- Civil aviation authority representatives

### Security Threats and Terrorism

- Threats to civil aviation
- Current terror threats
- Modus operandi of terror group

### Screening Technologies

- Security Managers
- Security Screening supervisors
- Screening Security Personnel
| Recurrent Aviation Security Training | In light of the growing number of security incidents and legislation, both global and national aviation security authorities require recurrent training for security staff, trainers and management. This course covers the recurrent training requirements recommended by ICAO, EU, TSA, and other major security programs to help keep your organization compliant. | Keep current with the most current security threats and legislation. Review the lessons learned from past recent incidents. Design a risk assessment model based on your workplace. Discover upcoming screening technology and its detection capabilities. | Passenger security processes and best practice. Cargo security processes and best practice. Lessons learned from recent incidents: the vulnerabilities, gaps and solutions. Applying the latest initiatives and procedures in your workplace. Recent and upcoming regulations and/or legislation - global and national programs. Technology developments in response to the latest threats: x-ray screening, access control, surveillance, biometric systems and more. New requirements for the training of aviation security staff and management. Update on IATA’s... | All aviation staff involved in implementing security measures as part of their operational tasks: screeners, management, trainers, flight crews. |
| Security Checkpoint Management | Evaluate the capabilities and limitations of your technology and team against the IATA-ACI Security and Egress Project criteria to increase efficiency in your screening operations. This course provides you with the latest assessment techniques for identifying weaknesses in your operations. Develop your staff by implementing stringent recruitment processes and recurrent training programs. Improve the use of your screening technology with the most current information on industry threats, new technologies and x-ray screening techniques. | Identify X-ray Screener job requirements Establish a training program for security screening staff Optimize passenger flow at security checkpoint Manage screening staff in day-to-day operations Establish and maintain threat recognition systems Know the screening technologies available on the market | Background and regulations Current trends in aviation security Legislative aspects of aviation security Customer service vs. securing the flight Threats and detection technology Explosives and Improvised Explosive Devices (IEDs) Detection technology categories Health and safety using detection technologies Weapon recognition IATA-ACI Security Access and Egress project Passenger process flow How to measure performance Screening management Recruiting screeners Building a training program Testing and | Security managers and security screening supervisors from all areas of the aviation industry, law enforcement agencies and governments. |
| Security Management System (SeMS) | designing drills  
Checkpoint designs | This course provides a structured approach to security process implementation in accordance with IATA Operational Safety Audit (IOSA) requirements. In daily classroom exercises, begin building a performance-based SeMS that produces measurable and auditable results. | Understand the structure and components of the SeMS  
Plan an organizational structure in terms of security responsibilities  
Integrate SeMS procedures into your operations  
Build awareness and a security-oriented culture throughout your organization | SeMS Management systems overview  
IATA’s SeMS initiative  
Core elements of SeMS Management  
Building a security structure within your organization  
Contingency planning  
Security threat assessment  
Risk management  
Human factors  
**Quality**  
Quality control  
Quality assurance of SeMS | Experienced screening staff  
Civil aviation authority representatives  
Airline Managers  
Airport Managers  
Law enforcement and other government personnel |
| Security Risk and Crisis Management | This course helps you to address security vulnerabilities in your organization and handle the aftermath of a crisis. Improve your understanding of risk management and understand how to prepare a risk assessment of your organization by correctly assessing and quantifying threat. Learn how to minimize risk by reviewing current threats to the aviation industry. When the unexpected does happen, it is important to be prepared. | Analyze emerging trends in attacks against civil aviation  
Identify areas of vulnerability within your organization  
Prepare a risk assessment for your organization  
Report and recommend countermeasure(s)  
Develop a crisis management | **Risk management**  
Intelligence analysis: Restrictive or open-sourced intelligence gathering  
Developing a risk assessment plan  
**Reporting risk assessment findings**  
Standardizing reports  
Internal and external communication  
Evaluating aviation security | Airline, airport and civil aviation  
Legislation and administration  
Insurance and aviation security consultation |
| Explore the causal factors that lead to a crisis and gain the skills you need to respond quickly and effectively. Equip your facility and staff by developing a crisis plan, gathering an emergency response team, and preparing a crisis center. Improve your communication skills when faced with external parties, such as the media. | plan for your organization Improve your communication skills both internally and externally during a crisis | countermeasures Quality control Event analysis Awareness training **Identifying areas of vulnerability** Personnel and equipment Quality control Assessing the vulnerability of facilities Applying and integrating risk management (ISO 31000-2009) **Crisis Management** Crisis management planning Incident investigation and reporting Crisis control areas Developing communication skills Negotiating Public speaking Applying resource management Understanding the role of human error Analyzing threats to civil aviation before and after 9/11 |
| Security X-ray Screening Operations | This course provides a solid foundation for new recruits to complement on-the-job training. Using our continuously updated simulation system, participants can practice their x-ray screening and threat detection skills in the safety of the classroom. Course materials comply with EC 185/2010 and EC 300/2008 and are taught by experienced IATA instructors. | Certify staff to perform x-ray screening | Background and Regulations | Aviation security history and current trends | Aviation security legislation | Explosives and Improvised Explosive Devices (IEDs) | X-ray Screening Skills | X-ray screening equipment and methods | Inner workings of screening equipment | Cargo and mail screening techniques | Health and safety using detection technology | Identifying weapons and IEDs in an x-ray | Screening packed luggage and cargo packages | Airports | Cargo companies | Security service providers | Law enforcement agencies using screening equipment | Mail and courier companies |
|------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Unruly Passengers preventions      | Unruly passengers are a continuing concern for air carriers. Though incidents are rare, an unruly passenger can pose a real threat to the safety of staff and other travelers and, in extreme cases, cause an airline costly penalties and delays. This course provides practical, methodical training to help you deal with incidents objectively and with confidence. You will learn how to identify and calm unruly behavior in its early stages, and have multiple opportunities to develop your skills with role-play exercises | Understand what can trigger a passenger’s aggression and the forms it can take | Unravel these concepts and how to apply them in your operations: legislation and regulations | effective communication skills | -escalation techniques | Restraint techniques | self-defense response | Air crew and ground staff | Check-in and passenger services staff | Security and customs officers working directly with passengers | |
|                                    | Determine the severity of an incident | Know the legislation and regulations that govern the handling of unruly | | | | | | | | | | | | | | | |
carried out throughout the course.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Objectives</th>
<th>High level outline</th>
<th>Target audience</th>
</tr>
</thead>
</table>
| ICAO 1 Basic security training | Train base or entry-level airport security personnel to enforce, monitor and apply airport security measures in accordance with approved programmes, and to communicate and cooperate with other airport agencies. | • Work in and move about an airport safely  
• Communication and cooperation with other airport agencies  
• Controlling the movement of people and vehicles by means of access control techniques and systems  
• Recognizing weapons and explosive/incendiary devices  
• Inspecting/screening/searching passengers and baggage  
• Response to airport emergency situations  
• Escorting people and consignments | • The target population are new entrants, existing personnel. |
| ICAO 3 Management     | Course designed to train aviation security personnel at managerial level to plan, coordinate, and implement the application of airport security preventive measures in accordance | • Basic concepts of management to aviation security  
• Human and material resources  
• Financial budget  
• Standard Operating Procedures (SOPs)  
• Aviation security programmes  
• Personnel competency verification | • Personnel at the supervisory level with the potential for promotion to the managerial level, and existing personnel at that level employed by the authority or |
<table>
<thead>
<tr>
<th>ICAO 4</th>
<th>Exercise</th>
<th>Course for security middle and senior management who have been assigned to organize, plan, conduct and assess aviation security crisis management exercises</th>
</tr>
</thead>
</table>
|        |          | • System testing mechanism  
• Preventive measures and crisis management plans and procedures  
• Elements related to the organization and planning of security exercises  
• Roles and functions of all security exercise participants  
• Security exercise evaluation process |
|        |          | • Mid to senior management level with responsibility under the State’s National Civil Aviation Security Programme to evaluate and maintain the effectiveness of the crisis management portion of the response to acts of unlawful interference |

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<thead>
<tr>
<th>ICAO 5</th>
<th>Crisis Management</th>
<th>Train to organise, plan, conduct and assess aviation security crisis exercises and to determine the effectiveness of crisis management plans and procedures</th>
</tr>
</thead>
</table>
|        |                    | • Crisis management plan to respond to major security emergencies occurring at airports  
• Essential components of a crisis management team  
• Composition and function of a crisis management team  
• Facilities necessary in support of a planned response to crises  
• List the system testing feature necessary to ensure currency in crisis management plans |
|        |                    | • Mid to senior management level with responsibility under the State’s National Civil Aviation Security Programme to evaluate and maintain the effectiveness of the crisis management portion of the response to acts of unlawful interference |

<table>
<thead>
<tr>
<th>ICAO 6</th>
<th>Cargo</th>
<th>Provides information on the purpose and intent of existing security measures, the implementation of appropriate security controls for cargo consignments, and the appropriate emergency response procedures in the event of a cargo security incident</th>
</tr>
</thead>
</table>
|        |       | • The origin and purpose of security measures and procedures for the protection of cargo, courier/express parcels, mail and operators’ supplies  
• The nature of the threat posed to aircraft by explosives and other dangerous substances  
• Security controls of cargo consignments  
• Security controls of cargo facilities, vehicles, containers |
|        |       | • Course intended for personnel involved in over site responsibility for the handling of cargo and mail  
• Persons having over sight responsibility for the implementation of security |
and equipment

- Airline security emergency related to suspect cargo

measures related to the accepting, documenting and handling of cargo, courier/express parcels, mail and operators supplies

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Description</th>
<th>Objectives</th>
<th>Contents</th>
<th>Target audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACI 1 Airport Security</td>
<td>Course makes participants aware of TSA United States regulations and its counterpart ICAO Annex 17 international guidance for the oversight and compliance standards for aviation security. The course is targeted at existing airport executives, supervisory airport managers involved with establishing the direction, mutual aide agreement, and general security of the airport facility and operations.</td>
<td>• Develop an outline for an Airport Security Program • Review the recommended airport practices and the regulatory requirements • Review emergency and contingency response plans and practice scenarios • Review the law enforcement requirements and duties at all sized airports • Understanding review functions and methodologies for conducting audits</td>
<td>• Historical Overview Airport Security; • Case Study of Aviation Security Incidences • International Security Regulation; • Pan Am Flight 103 • 9/11 Attacks • Austin GA Incident • Other • National AVSEC Requirements; • Airport Security Activities and Awareness Training; • Access Control Measures; • Passenger/Cabin Crew Security; • Security Equipment; • Ground Security Measures; • Cargo And Catering &amp; Mail Security; • Prohibited Articles and Weapons used by Airport Personnel • Case Study of Practical Crisis Management Exercises; • Methodology And Processes of Law Enforcement Personnel in Airport</td>
<td>• Airport Executives for Category IV-II • Security Managers for Category I-X • Experienced and New Airport Security Coordinators • Contracted Airport Security Guards • Law Enforcement Personnel with Airport assignments</td>
</tr>
<tr>
<td>ACI 2</td>
<td>Baggage Screening: Operational and Image Analysis</td>
<td></td>
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<td>--------------------------------------------------</td>
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</table>
| This course blends classroom instruction and computer based training and is designed to enhance participants image analysis expertise for both cargo and airport scanners. It provides operators of baggage screening equipment with a detailed understanding of the operational and safety functions of the equipment so they can analyse images to the highest standard and better detect prohibited or dangerous items. | - Explain what are X-rays and their use via X-ray machines.  
- Describe the procedures to operate a baggage X-ray system.  
- Discuss health and safety regulations, and radiation protection basics.  
- Detect a wider range threats and prohibited objects using X-ray machines.  
- Detect threats and prohibited items in more complex and difficult positions.  
- The nature of X-rays  
- The principles of X-ray images  
- The X-ray machine features  
- Procedures for the operation of baggage X-ray systems  
- Health and safety regulations  
- Radiation protection basics  
- Security clearance with X-ray machines  
- Threat detection training – explosives, weapons, prohibited items  
- Extensive Computer Based Training using a scanner simulator (SIMFOX)  
- Those with responsibility for the operation of baggage screening equipment and the analysis of baggage screening images. |

<table>
<thead>
<tr>
<th>ACI 3</th>
<th>Security and Facilitation</th>
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</table>
| This course provides participants with the principles upon which security and facilitation are built, their global structure, the need to have them working in a coordinated effort and airport industry best practices and | - Understand the various aspects of aviation facilitation and security and enhance their knowledge of the legal foundation upon airport programmes are established.  
- Analyse the security and facilitation global structure and its importance on aircraft, crews, passenger, cargo and mail.  
- ICAO and its role in security and facilitation  
- Security and facilitation global structure  
- Cargo Security and Facilitation Biometrics and its application in facilitation and security  
- Machine Readable Travel Documents (MRTD)  
- Challenges and common goals of security and facilitation  
- Airport managers and personnel with security and facilitation responsibilities  
- Airline Officials  
- Civil Aviation Regulators  
- Governmental agency staff responsible for access and border controls (e.g. Immigration, Customs, etc.) |
<table>
<thead>
<tr>
<th>tools to accomplish tasks related to Security and Facilitation in their workplaces.</th>
<th>• Review security and facilitation common challenges, goals and operational activities.</th>
<th>• Common operational activities between security and facilitation.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Critique case studies (anonym) and review best practices for facilitation and security working towards a common goal in a coordinated effort.</td>
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<tr>
<td></td>
<td>• Learn about the wide range of new tools and resources required to accomplish tasks related to security and facilitation.</td>
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### Appendix B  Training Course in the maritime domain

#### Basic Training

Training or instruction in safety and emergency has be undertaken by seafarers with designated safety or pollution prevention duties in the operation of the ship. The required training includes:

**Training in Advanced Fire Fighting**

- **Basic Safety Training in Personal Survival Techniques** – ITR – training in accordance with the provisions of Reg. VI/1 of the STCW Convention. The training will take place both in the classroom and at our pool facility, where attendees are required to be fit enough to undertake the in-water practical drills, similar to those undertaken on the original PST course. Seafarers know how to correct use of survival equipment and proper use of survival craft.

- **Basic Safety Training in Personal Safety and Social Responsibilities** – The Personal Safety and Social Responsibilities (PSSR) syllabus covers the mandatory requirements of the 1995 STCW Convention and Code Chapter VI, sections A-VI/1, A-VI/2, A-VI/3, and A-VI/4. On meeting the minimum standard of competence in Elementary First Aid, Personal Survival Techniques, Personal Safety and Social Responsibilities, and Basic Fire Fighting a trainee will be able to perform under a wide range of conditions. Upon completion of Section A-VI/1-4, Personal Safety and Social Responsibilities (PSSR), the trainee will be able to:
  - Understand types of Emergencies and actions to take
  - Recognize emergency signals in station bill and use of safety equipment
- Know the values of drills and training
- Understand importance of working safe
- Use appropriate escape routes
- Understand effective communication
- Understand importance of precautions prior to entering a confined space
- Recognize when to use Lock-Out/Tag-Out
- Recognize duties regarding pollution prevention
- Understand policies regarding drug and alcohol abuse
- Know the importance of maintaining appropriate employee relations.

**Basic Safety Training in Fire Prevention and Fire Fighting** - training accordance with the provisions of Reg. VI/1 of the STCW Convention. The aim of the course is to give seafarers the essential education and training in fire fighting and fire prevention, particularly focusing on: safety culture, understanding the risk of fire on board and how to minimise those risks, learning how to fight and extinguish fires as well as search for and recover casualties, learning how to wear fire fighting equipment including personal breathing apparatus and safe use of fire extinguishers.

**Advanced Training**

- **Training in Advanced Fire Fighting** - training accordance with the provisions of Reg. VI/3 of the STCW Convention and seafarer can be assigned to control fire fighting operation on board. This course is part of the training for deck and engineering officers who wish to qualify for a Certificate of Competency and crew who are designated to control fire fighting operations. It covers fire fighting procedures at sea and in port with particular emphasis on organisation, tactics and effective command including liaison with shore-based firefighters.

**Security Training (ISPS CODE)**

New trainings introduce new security familiarisation and training requirements for other grades on shipboard personnel. Essentially there are four levels of security training, and depended on their designated duties, seafarers will need to be qualified at the appropriate level. All seafarers must receive security training related enabling them to know the procedures to follow when they recognise a security threat, take part in security related emergency and security contingency procedures.

- **Proficiency in Security – awareness** – after this training seafarer has been duty trained in security – awareness in accordance with the provisions of Reg. VI/6.1 of the STCW Convention. All seafarers, regardless of their role on board, need to demonstrate an understanding of security awareness. This requirement extends to all hotel staff and concessionaires on cruise vessels. The aim of the course is to provide Officers and Crew with a better understanding of: the importance of ship security and the roles of those involved in its provision, the requirements and measures to maintain ship security, able to recognise and report a security threat.

- **Proficiency for Seafarers with Designated Security Duties** - after this training seafarer has been duty trained in security – awareness in acc. with the provisions of Reg. VI/6.4 of the STCW Convention and may be designated to security duties. The aim of the course is to provide seafarers with a better understanding of: ship security importance and know the roles and responsibilities of the organisations and individuals involved, what constitutes security risks, threat and vulnerability to the ship, its personnel, cargo and operations, the capabilities and limitations of security methods, equipment and systems, how to maintain the measures in ship
security plan and related requirements, how to maintain the effectiveness of security arrangements, procedures and equipment at the three security levels, taking into account their limitations.

- **Proficiency for Ship Security Officer** - after this training seafarer has been qualified trained in security in acc. with the provisions of Reg. VI/5 of the STCW Convention may perform ship security officer duties. The aim of the course will provide SSO's with a better understanding of how to: maintain and supervise the implementation of a ship security plan, assess security risks, threat and vulnerability, ensure that security and systems, if any, are properly operated, tested and calibrated, encourage security awareness and vigilance. It includes an introduction to the background of the International Ship and Port Facility Security Code (ISPS), the roles of the company security officer (CSO) and ship security officer (SSO), security requirements and security administration. The programme covers security drills, security exercises, **crowd management techniques**, security protection and emergency preparedness. Students will become proficient in:
  
  - Ship security assessments and audits
  - Creating ship security plans
  - Ship and port facility security measures
  - Recognition of behavioural patterns of people likely to threaten security
  - Detection of weapons
  - Testing and calibration of security equipment and systems.

- **Port Facility Security Officer** - after this training seafarer has been qualified trained in security in acc. with the provisions of Section A-VI/5 of Code of the STCW Convention the course covers: maritime security threats, maritime security levels, The Port Facility Security assessment, suspicious persons, behaviour and circumvention of security, weapons and explosives, practical protective measures and contingency planning.

**Special Training for Personnel on Passenger Ship:**

The STCW Convention requires that personnel serving on passenger ship, including many personnel not directly connected with the operation of the ship, must undergo additional ship specific training.

- **Crisis Management and Human Behaviour Training** – that training involving some knowledge of psychology witch must be applied to any personal with responsibility for safety of passenger in an emergency. Seafarer has been duly trained in accordance with the provisions of Reg. V/2.6 of the STCW Convention and may perform shipboard duties on board passenger ship. Objectives of the course: to control the response to an emergency, to optimise the use of resources in an emergency, to control passengers and other personnel during emergency situations, to establish and maintain effective communications, to know the importance of shipboard emergency organisational procedures and drills.

- **Safety Training for Personnel Providing Direct Service to Passenger** – that training is for personnel witch be able to communicate with passengers in accordance with more extensive criteria than those required for all personnel on other ship types. Seafarer has been duly trained in accordance with the provisions of Reg. V/2.5 of the STCW Convention and may perform shipboard duties in passenger space on board passenger ship. Contents: communication skills and embarkation procedures.
Crowd Management and Safety – that training is for personnel who is designated to assist passengers in emergency situations. It including awareness of life saving and control plans, ability to assist passengers to muster and embarkation stations. Seafarer has been duly trained in acc. with the provisions of Reg. V/2.4 of the STCW Convention and may perform shipboard duties on board passenger ship.

Passenger Safety, Cargo Safety and Hull Integrity on ro-ro passenger ship Training – that training is for all personnel with immediate responsibility for embarking passengers or loading cargo. It is appropriate to their duties, to ensure they can apply special procedures that are relevant to ro-ro and conventional passengers ship. Seafarer has been duly trained in acc. with the provisions of Reg. V/2.7 of the STCW Convention and may perform shipboard duties on board ro-ro passenger ship.

Additional Training and Certification Requirements – Rescue Boats

Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats - training accordance with the provisions of Reg. VI/2.1 of the STCW Convention and seafarer has been found proficient in survival craft and rescue boats other than fast rescue boats. It’s for personnel who are required to launch and take charge of fast rescue boats in emergency situations.

Proficiency in Fast Rescue Boats - training accordance with the provisions of VI/2.2 of the STCW Convention and seafarer has been found proficient in fast rescue boats. Course content: communication and signalling equipment between FRB and simulated helicopter or ship, search crew responsibilities, rescue crew briefing, recovery of victims, explain actions to take in order to recover the operational capability of crew and craft.

Leadership and Management

Training in Bridge Recourse Management - training accordance with the provisions of Section A-II/1 and A-II/2 of the Code of STCW Convention. This course will benefit all members of the deck department and is suitable for personnel serving on all types of vessels including large yachts. Delegates attending the course will have the opportunity to consider their role in the working environment and benefit from a range of tools and techniques aimed at ensuring effective performance. Important for IMPACT subject areas include situational awareness, communication and culture elements. First tells how to acquire and maintain situational awareness and understand the factors that can result in its decline and its central role in reducing accidents and increasing safety margins. Communication concerning to recognise and apply best practice in communication and be aware of barriers to communication and how these may adversely affect situational awareness. Recognition of interpersonal style and the appropriate development of assertiveness in a bridge environment. Culture elements concerning to recognise and respond to cultural issues, covering cultural awareness and bias including national, organisational, departmental and personal cultural approaches.

Training in Engine Room Recourse Management – training accordance with the provisions of Section A-III/1. and A-III/2 of the Code of STCW Convention. The main tenets of resource management relate to the non-technical skills associated with the social interaction between team members, situation awareness and decision-making. This is a high fidelity, complex, simulated working environment. Important for IMPACT subject the course covers: safety of operations, situational awareness
management, human factors and human error, crisis management and human behaviour, risk assessment and risk management, communications, methodical and logical approach to fault diagnosis and problem solving, emergency preparedness and contingency planning.

- **Human Element, Leadership and Management (Operational Level)** - This course is designed to meet the mandatory requirements for training in the human element, leadership and management at the operational level as set out in Regulations II and III of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW). It provides students with awareness and understanding of the key human factors influencing effective resource management. Seafarers have acquire and develop tools and practical skills to enhance their maritime resource management capability. This training is a prerequisite for a first Certificate of Competency (CoC) issued by the MCA meeting the requirements of Regulation II/1, III/1 and III/6. The course develop knowledge and skills: situation and risk assessment: to understand the influence of a situation and risk assessment in the principles and practice of decision making at an operational level; situational awareness: how to acquire and maintain situational awareness and accidents and increasing safety margins; communication: how to recognise and apply best practice in communication, and be aware of barriers to communication and how these may adversely affect situational awareness and culture: how to recognise and respond to cultural issues including cultural awareness and bias including national, organisational, departmental and personal cultural approaches.

- **Human Element, Leadership and Management (Management Level)** - The course meets the latest mandatory requirements for approved training in the human element, leadership and management at the management level and the standards of competence to be achieved. It's normally for technical officers following an approved education and training programme leading to MCA certification as: chief mate or master on ships of 500GT or more and second engineer officer or chief engineer officer on ships powered by main propulsion machinery of 750 kW propulsion power or more. It meets the obligatory requirements relevant to bridge resource management, engine-room resource management and application of leadership and teamworking skills as set out in Tables A-II/1, A-III/1 and A-III/6 of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) incorporating the Manila amendments. This training is a prerequisite for a management level Certificate of Competency (CoC) issued by the MCA upon meeting the requirements of Regulation II/2 and III/2. Seafarers can control the operation of the ship and care for persons on board at the management level through the use leadership and managerial skills in clear communication, effective leadership behaviours are demonstrated and are most effective decision for very different situation.

SAR IN COOPERATION

- **Training in Co-operation between Passenger Ship on Fixed Routes and Search and Rescue Service** - Seafarer has been duly trained in accordance with the requirements of Chapter V Reg. 7.3 of the STCW Convention. Includes knowledge about ship systems for search and rescue purposes.

**International Safety Management (ISM) CODE**

- **Training in International Management Code for the Safety Operation of Ship and for Pollution Prevention Familiarization (ISM Code)** – Seafarer
has been duly trained in acc. with the requirements of Chapter IX of SOLAS Convention in the scope of the International Management Code for the Safety Operation of Ships and for Pollution Prevention. The Safety Management System should provide for measures ensuring that the Company's organization can respond at any time to hazards, accidents and emergency situations involving its ships. The very important ISM area contains emergency preparedness to establish procedures to identify, describe and respond to potential emergency shipboard situations and establish programmes for drills and exercises to prepare for emergency actions. In events leading up to during emergencies, the ability of the crew to communicate among themselves and with passengers has proved to be a crucial factor in the outcome of many shipping incidents. Effective communication should be maintained at all times in the enhancement of safety and pollution prevention.

- **Safety Culture** - This unit explores the concept of a safety culture within the context of maritime sector requirements and develops a safety culture and safety management.

**IALA**

The IALA World Wide Academy (WWA) is an integral part of the International Association of Marine Aids to Navigation and Lighthouse Authorities. The Competent Authorities of IALA Member States can accredit training organisations to deliver IALA approved model courses on the provision of Vessel Traffic Services.

- **Training and Certification of Vessel Traffic Services Personnel, VTS Operator Training** - VTS Operator training follows the IALA Model Course V-103/1 and covers the few Important for IMPACT subject area: modules: traffic management, emergency situations, communication. VTS personnel have established their role as maritime.

## Appendix C

1st ESG meeting: contents covered by safety and security training in different domain

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>CONTENTS</th>
</tr>
</thead>
</table>
| Airport   | - Italian/European laws and regulations, SOPS, risk management, past events of accidents/Incidents, Human Factors, Communication;  
            - Security Management System Maintenance and Training for the developed systems and software;  
            - Security checkpoints, screening equipment, airport perimeter, legislation with European Commission;  
            - Manufacturer relations with airports, benchmarking between different airports in Europe in terms of security issues;  
            - Health and Safety, emergency, regulation. |
| Maritime  | Investigations: how to address an accident/incident in order to collect information, how to report them;  
            Standards of Training, Certification, and Watch keeping for Seafarers (STCW);  
            ISPS code; Military procedures; |
Data collection railways and maritime accident. Investigation: rule and report; Safety and security of port and port facilities, bomb alarm, terrorists alarm.

<table>
<thead>
<tr>
<th>Railways</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to manage security situations in different environments (surface, underground). Vandalism, antisocial behaviour, no ticket, graffiti. How to inform passengers in emergency situations using gesture/ posture;</td>
</tr>
<tr>
<td>Behaviour in specific safety security related situations; emergency training;</td>
</tr>
<tr>
<td>Emergency training for security agents; emergency training for the railways operators;</td>
</tr>
<tr>
<td>Safety management training, Safety culture training, European safety directives/ Norms training, Risk management or a part of safety management training, emergency management actions training, explosive material training and crisis management training;</td>
</tr>
<tr>
<td>Special policing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Security &amp; Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigation on railway accidents; dangerous goods materials; public order;</td>
</tr>
<tr>
<td>Internal security, epidemics, disease, natural disaster, manmade disasters, food safety and security, water borne disease;</td>
</tr>
<tr>
<td>Emergency situations related to risk;</td>
</tr>
<tr>
<td>Different types of training: 1) Security agents: shooting, profiling, emergency response; 2) Front end employees: handling of security situations, emergencies, reporting.</td>
</tr>
</tbody>
</table>

**Appendix D**

**1st ESG meeting: table of strengths and limitations**

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>Strengths</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport</td>
<td>Focus on resource management/ teamwork and education.</td>
<td>Limited financial resources and availability of staff to be trained; Security equipment improvement. Issues with the screening of LAGs, development of equipment capable of screening with low false alarm rates. Financing- Security provision is expensive and in most countries security costs are handled by airport; Regulation changes (inability to keep up with regulatory changes); Relationship with police department not covered;</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
<td>Issues</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Maritime</td>
<td>No cross cultural training;</td>
<td></td>
</tr>
</tbody>
</table>
| Railways          | Regular safety procedures, first aid, special powers to address misbehaviours and aggression to deal with and use of force. | Limited Human Resources and budget resources;  
\* Front operators that are not security guards receive classroom training and some year also an emergency drill.  
\* Front operators that are security guards have every three months a training that includes emergency drills simulations. |
| Security & Health | All employees receive a regular training each year.                                             | Lack of emergency drills;  
\* Too focused on certain scenarios, usually not comprehensive, mainly safety and less security oriented. |