



FP7-313161

A holistic, scenario-independent, situation-awareness and guidance system for sustaining the Active Evacuation Route for large crowds

QUALITY MANAGEMENT PLAN

Deliverable Identifier:	D.1.1
Delivery Date:	July 1st, 2013
Classification:	Public
Editors:	Dimitris Petrantonakis, EXODUS S.A. Dimitris Vassiliadis, EXODUS S.A.
Document version:	v1.0 - 2013
Contract Start Date:	April 1 st , 2013
Duration:	48 months
Project coordinator:	EXODUS S.A. (Greece)
Partners:	EXO (GR), IT INNOVATION (UK), ICCS (GR), HKV (NL), TEL (GR), TEK (ES), AIA (GR), VITRO (IT), CDI (UK), INDRA (ES), KUL (BE), DXT (FR), POLITO (IT), STX-FR (FR), TUD (DE), TUC (DE), ASRS (ES), METB (ES), TIM (IT)

Project co-funded by the
European Commission under the
7th Framework Programme



Document Control Page

Title	Quality Management Plan	
Editors	Dimitris Petrantonakis	EXO
	Dimitris Vassiliadis	EXO
Contributors	Zoheir Sabeur	ITINNOV
	Alexandre Ahmad	DXT
	Athanasia Tsertou	ICCS
	Kostas Loupos	ICCS
	Hanneke Vreugdenhil	HKV
	Diana Dimitrova	KUL
	Marco Cosentino	VITRO
	Lorenzo Rossi	VITRO
	Elisabet Terrades	INDRA
	Raji Sasidharan	TUD
	Jon Mabe	TEK
	Joseba Izaguirre	TEK
Peer Reviewers	Manthos Bimpas	ICCS
	Pedro Garibi	INDRA
Format	Text - Ms Word	
Language	en-UK	
Work-Package	WP1	
Deliverable number	D1.1	
Due Date of Delivery	1 st of July, 2013	
Actual Date of Delivery	1 st of July, 2013	
Dissemination Level	Public	
Rights	eVACUATE Consortium	
Audience	<input checked="" type="checkbox"/> public <input type="checkbox"/> restricted <input type="checkbox"/> internal	
Date	01/07/2013	
Revision	None	
Version	1.0	
Edited by	Dimitris Petrantonakis, Dimitris Vassiliadis (EXODUS S.A.)	
Status	<input type="checkbox"/> draft <input checked="" type="checkbox"/> Consortium reviewed <input checked="" type="checkbox"/> WP leader accepted <input checked="" type="checkbox"/> Project coordinator accepted	

Version History

Version	Date	Description and comments	Edited by
0.1	21/06/2013	First Draft Version	EXO
0.2	25/06/2013	Reviewed Version	EXO, DXT, ICCS, KUL, INDRA, TUD, HKV, VITRO, TEK, ITINNOV
1.0	01/07/2013	Final Version	EXO

Executive Summary

This document describes the quality management procedures that apply to eVACUATE design, implementation and trial stages. The close following and coherence to the Quality Management Plan is a joint responsibility of all project partners until the complete discharge of all obligations under the EC Grant Contract in order to ensure the quality of all project deliverables and the following of coordination guidelines among partners during project's tasks execution. The plan presented hereafter, consists of planned and systematic processes and steps to determine and ensure achievement of the eVACUATE quality objectives. Moreover it is going to be used to monitor the corrective actions employed to verify that agreed procedures are in place and are being adequately implemented. To this end, this document identifies a list of Key Performance Indicators (KPIs) that will be used and continuously updated throughout the life of eVACUATE, in order to monitor the progress and also the quality of the work performed in the various executed tasks. Moreover, a list of the major identified risks related to the project operation has been created (and will be maintained and updated throughout the project life), accompanied with adequate mitigation strategies.

Contents

Executive Summary.....	4
Table of Figures	7
Table of Tables.....	8
1 Purpose and Structure of the Document.....	9
1.1 Purpose of the Document.....	9
1.2 Structure of the Document.....	9
2 Project Organisation	11
2.1 eVACUATE Management Structure	11
2.3 Project Bodies and Main Roles.....	12
2.3.1 The Project Coordination Team.....	12
2.3.2 The Technical Committee.....	13
2.3.3 Plenary Board.....	13
2.3.4 Advisory Board	13
2.3.5 Other Project Roles	14
3 Collaboration among Partners	15
3.1 Decision Process	15
3.2 Conflict Resolution.....	15
3.3 Communication among Partners.....	16
3.3.1 Information flow	16
3.3.2 Meetings.....	17
3.3.3 Measurement of Project Progress.....	18
4 Quality review within eVACUATE project.....	19
4.1 Reviews for Hardware/Software	19
4.2 Reviews for Documentation-Project Deliverables.....	19
4.3 List of Deliverables and relevant Reviewers.....	21
5 Configuration Management.....	24
5.1 Document Configuration Management.....	24
5.1.1 Deliverables	24
5.1.2 Reviewed Documents / Forms.....	24
5.1.3 Meeting Minutes.....	25
5.1.4 Tests	25
5.1.5 Software Configuration.....	25
6 Quality Attributes and Key Performance Indicators - Risk Management.....	26
6.1 Quality Attributes.....	26
6.2 Key Performance Indicators.....	26

6.3	Risk Management.....	34
6.3.1	Consortium Risk Management	34
6.3.2	Integration Risks	34
6.3.3	EVACUATE Risk Registry	36
Annex A	References & Relevant Readings	42
Annex B	List of Acronyms.....	43
Annex C	Template: Deliverables Document	44
Annex D	Template: eVACUATE Review Protocol	50
Annex E	Template: eVACUATE Meeting Agenda	51
Annex F	Template: eVACUATE Meeting Minutes.....	55
Annex G	Template: eVACUATE Project Presentations	57

Table of Figures

Figure 2.1.1: eVACUATE Management Structure.....	11
Figure 4.2.1: eVACUATE Deliverable Preparation and Review Procedure	20
Figure 4.2.2: Indicative Timetable for Internal Review Procedure	20

Table of Tables

Table 3.3.1: Timetable of project's meeting.....	17
Table 5.1.1: Deliverables Naming Conventions.....	24
Table 5.1.2: Reviewed Document Naming Conventions.....	24
Table 5.1.3: Meeting Minutes Naming Conventions	25
Table 5.1.4: Test Scenarios Naming Conventions	25
Table 5.1.5: Test Case Naming Conventions.....	25
Table 6.1.1: eVACUATE Key Performance indicators per WP	27

1 Purpose and Structure of the Document

1.1 Purpose of the Document

The purpose of this document is the description of the quality procedures that will apply along the project implementation stages. The coherence to the Quality Management Plan is a joint responsibility of all project partners until complete discharge of all obligations under the EC Grant.

The Quality Management Plan ensures the quality of all project deliverables and the proper Quality assuring coordination activities among partners during the tasks execution. In more detail, the Quality Management Plan objectives are:

- Ensuring smooth project execution and progress
- Developing documentation of the project progress in line with quality metrics, ethical, and technical standards
- Discovering deviations from project planning in an early stage
- Initiating remedial actions (if necessary) as soon as possible

Practices defined in this Quality Management Plan will ensure that quality is built within eVACUATE working processes. Therefore, the Quality Management Plan consists of planned and systematic activities to determine and ensure achievements of eVACUATE quality objectives.

The Quality Manager serves as the point of contact for the project coordinator and all eVACUATE partners on all eVACUATE quality matters.

Quality Management tasks are divided into *phase-specific* and *non-phase specific tasks*. Phase-specific tasks are related to the life cycle phase of the project while non-phase-specific tasks are remaining the same throughout the project regardless of the specific phase (e.g. deliverable handling) as presented in the following list:

- Project Decision Structure
- Submission of Deliverables
- Project Monitoring
- Corrective Actions
- Software and Hardware life-cycle
- Contracts
- Internal Communication

The eVACUATE project will administer a non-conformance and corrective action program that will verify early detection and correction of deviations from the project plan. Non-conformance will be documented and corrective actions applied. The Quality Management Plan will monitor the corrective actions employed to verify that agreed procedures are in place and are being adequately implemented.

1.2 Structure of the Document

The structure of this document is as follows:

- **Section 2** presents the management structure of the eVACUATE together with the project bodies, the main roles and the responsible persons. The Quality Management Plan will be based on this structure.
- **Section 3** describes the eVACUATE quality management activities that will ensure the proper implementation of the project plan.
- **Section 4** discusses the quality reviewing activities that have been designed for the quality assurance of the project deliverables.
- **Section 5** describes the configuration management activities that will take place within eVACUATE for every deliverable.

- **Section 6**, arguably the most important section of the present document, presents in detail the *Quality Attributes* and the *Key Performance Indicators* that were set for the eVACUATE project in order to assess the quality of the project results. At the same time, it introduces an early but detailed account of the major risks foreseen for the project operation, together with the proposed mitigation strategies.

In the Annexes of the present document, not only the list of references (Annex A) and used Acronyms used within the document (Annex B) may be found, but also all the templates developed for all eVACUATE documents (Annex C – Annex G).

2 Project Organisation

2.1 eVACUATE Management Structure

General project management in eVACUATE is based on and characterized by three major principles:

- **Principle of an integrated Project Structure:** Create an integrated project structure that incorporates technical, scientific and partner coordination as well as issues of commonplace business operation.
- **Principle of leading edge Project Management Instruments:** Apply international operated and state of the art management instruments and establish a strong research commitment of the entire team. The applied project methodology will be based on the methodology of the Project Management Institute (PMI) [2].
- **Principle of binding decision provisions and agreements upon all partners:** Arrange spot of decision making close to responsible level of execution, elevate if necessary. Provide reliable and trusted agreements to protect intellectual properties of all partners.

Based on these three major principles the project management approach guarantees transparency and commitment to all engaged partners and thus facilitates an unobstructed and successful project evolution. It assures that eVACUATE meets its entire objectives on time, on budget, and with best quality results.

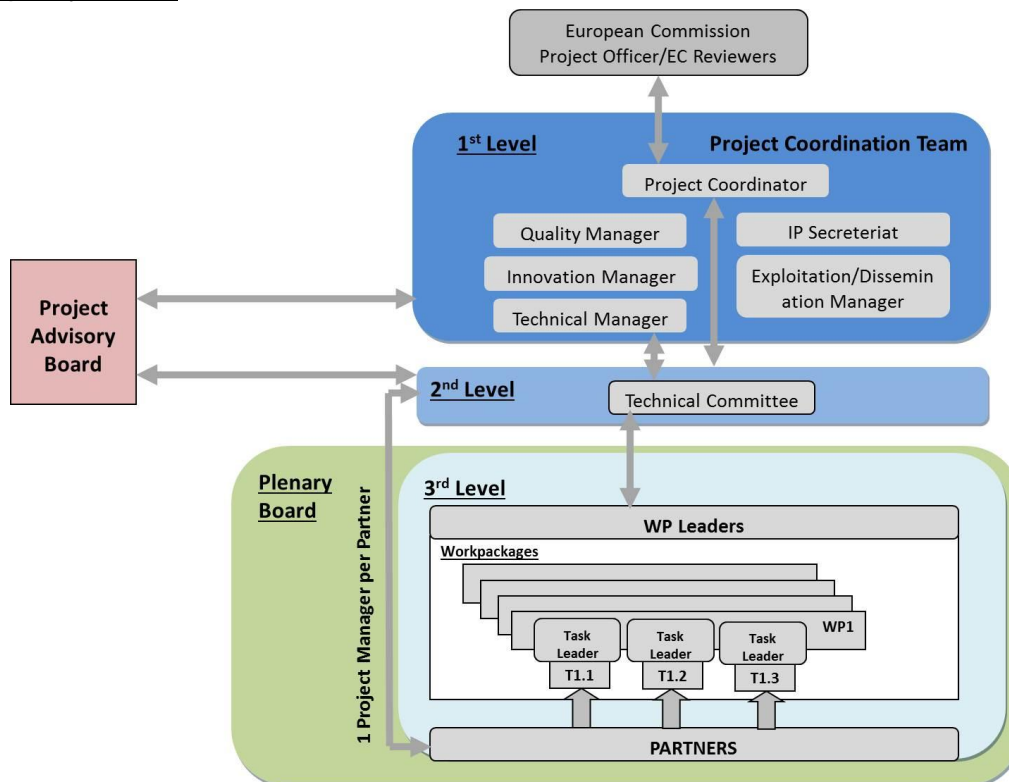


Figure 2.1.1: eVACUATE Management Structure

2.3 Project Bodies and Main Roles

2.3.1 The Project Coordination Team

The *Project Coordination Team* is the ultimate body of the Consortium responsible for the planning, execution and controlling of the project. It consists of the following roles: *Project Coordinator*, *Technical Manager*, *Exploitation/Dissemination Manager* and *Quality Manager*. More specifically the Project Coordination Team encompasses the following activities:

- ✱ Administration and scientific coordination activities
- ✱ Implementation of all action plans
- ✱ Establishing a budget and schedule-controlling system
- ✱ Implementation of a quality assurance system
- ✱ Providing clear guidance on Intellectual Property issues.
- ✱ Developing and maintaining a communication and reporting attitude
- ✱ Creation of efficient team structures to minimize the number of meetings while being flexible

The following key project persons constitute the *Project Coordination Team* that will be controlled by the Project Coordinator:

- **The Project Coordinator:** The Project Coordinator is responsible for the overall management, communication, and coordination of the entire research project. A special emphasis within its responsibilities is to assure in accordance with *WP Leaders* the overall integration of the single work packages and also to chair the two main project bodies, the *Technical Committee* and the *Plenary Board*. The Project Coordinator controls the *Project Coordination Team*. The Project Coordinator of the eVACUATE project is: **Dimitris Vassiliadis**, Head of Business Development and Delivery, EXODUS.
Dimitris Vassiliadis is the person named in the grant agreement as the coordinator and also the consortium-EC contact point
- **Technical Manager:** This role will ensure that the scientific and technological objectives of the project are met. The *Technical Manager* (or *Scientific Manager*) will cooperate closely with *Work Package Leaders* and deliver a really significant contribution to the scientific and technology coordination of the project. The Technical Manager will be also responsible for the tracking and monitoring of eVACUATE KPIs. **Pedro Garibi** (INDRA Sistemas S.A) is the *Technical Manager* of eVACUATE.
- **Innovation Manager:** The *Innovation Manager* is responsible to manage the knowledge produced during the project lifecycle and to assess the opportunity for applying for patents or declaring copyrights. **Jon Mabe** (TEKNIKER-Ik4) is the *Innovation Manager* of eVACUATE.
- **Exploitation Manager:** The *Exploitation Manager* manages the execution of the overall exploitation plan of the project and supports the partners in setting up their individual business plans, in order to exploit the results of eVACUATE and providing guidance on Intellectual Property issues. **Marco Cosentino** (VITROCISET) is the *Exploitation Manager* of eVACUATE.
- **Quality Manager:** The *Quality Manager* is responsible for the implementation of the quality procedures determined in the Quality Management Plan and the verification of the project results. Main responsibilities are: the monitoring of the implementation of the quality procedures along the project duration, the review of the project deliverables and the initiation of actions, reporting to the project coordinator, when needed. **Manthos Bimpas** (Institute of Communication and Computer Systems) is the *Quality Manager* of eVACUATE.

The Project Coordinator is the only official channel that interacts with the European Commission, especially with regards to the submission of deliverables, aspects related to third parties and eVACUATE consortium.

In the following sections, the eVACUATE project bodies are described together with the project roles.

2.3.2 The Technical Committee

The *Technical Committee* is expected to be the project's driving force and is led by the *Coordinator* and consists of the coordination team and the *WP Leaders*. *Technical Committee* members are permanent for the project duration, except if they wish to leave the Technical Committee themselves or because of EU intervention. The Technical Committee shall be in charge of supervising the project progress and deciding upon all relevant technical and administrative issues, such as: redirection of work in an Activity or WP, major transfer of resources across WPs or Partners (over 20%), technological choices, changes in time plans, inclusion of a new Partner, substitution or exclusion of an existing Partner, resolution of conflict between different WPs or Activities.

All Technical Committee Members will have a single vote. In case of equal votes, the vote of the Coordinator shall be the decisive one. This Group will meet if needed every six month unless there are any issues that requisite for earlier TCMs' assembly.

2.3.3 Plenary Board

The Plenary Board consists of the representatives of all Partners, each having one vote. It is led by the Coordinator, who has the decisive vote in case of equal votes. This Board will meet twice per year (plenary meetings) to review and plan project work. Any partner may raise issues. Non-technical issues (according to the Article 6.3.1.2.2. of the CA) will be discussed and decided within this Board. Major technical issues will be transferred to the Technical Committee level.

2.3.4 Advisory Board

Adequate consideration of the needs and requirements of end users will play a key role in the project. The eVACUATE *Advisory Board* is set up in order to feed user-related domain knowledge and expertise into the project throughout its entire lifecycle. It will in particular provide a sounding board for ideas and approaches to be developed by the core consortium. By critically accompanying its tasks and activities, the *Advisory Board* will provide valuable guidance to the overall project from a user-oriented perspective by creating an interface with organisations understanding all aspects of first responder requirements. *Advisory Board* members will act both as advisors and quality assurance to the project and as liaison to the European and national level through their organisation, their networks and beyond.

Through its composition, the *Advisory Board* will enable the project to adequately consider not only the specific requirements different end-user groups will have on the eVACUATE system, but also the circumstances in practical service provision to these. In particular, feedback from the *Advisory Board* will be required for each design and development cycle. In addition to this, through the various institutional networks the individual *Advisory Board* members have access to internal eVACUATE information¹. Thus the board constitutes a valuable channel for disseminating and exploiting project outcomes in a target-oriented manner to relevant constituencies respectively.

After the inauguration of the *Advisory Board*, its members will receive regular summarized updates by the project coordinator and project technical manager on project results and will be invited to give their comments and advice or peer review major deliverables (under the advice of the Project Quality Manager), throughout the project duration.

¹ This means access to information that is in principle public but has not been published yet. By no means does this refer to private information that should not be published.

2.3.5 Other Project Roles

Work-package Leaders: Work Package Leaders are responsible for managing their WP as a self-contained entity. The scope of their responsibilities includes, among other things, coordinating, monitoring, and assessing the progress of the WP, successful and on-time delivery of their respective deliverables, and achievement of relevant milestones while also ensuring that output performance including deliverables, KPIs, costs, and timelines are met. In addition, they are responsible for the integration of their results into succeeding work packages or tasks.

The project's partners that undertake the main project roles are as follows:

Table 2.2.1: EVACUATE consortium management team members

PROJECT ROLE	PARTNER	PERSON
COORDINATION TEAM		
Project Coordinator	EXODUS S.A.	Dimitris Vassiliadis
Technical Manager	INDRA	Pedro Garibi
Innovation Manager	Tekniker-Ik4	Jon Mabe
Exploitation Manager	VITROCISET	Marco Cosentino
Quality Manager	ICCS	Manthos Bimpas
WP LEADERS		
WP1	EXODUS S.A.	Dimitris Vassiliadis
WP2	HKV	Hanneke Vreugdenhil
WP3	IT Innovation Centre	Zoheir Sabeur
WP4	Crowd Dynamics International	Paul Townsend
WP5	DIGINEXT	Alexandre Ahmad
WP6	Institute of Communication and Computer Systems	Athanasia Tsertou
WP7	Tekniker-Ik4	Jon Mabe
WP8	VITROCISET	Marco Cosentino
WP9	INDRA	Pedro Garibi
WP10	HKV	Hanneke Vreugdenhil
WP11	KU Leuven	Jos Dumortier
WP12	VITROCISET	Marco Cosentino

3 Collaboration among Partners

Project and quality management activities will ensure the proper implementation of the project plan and the satisfaction of its objectives. The following paragraphs describe the plans and activities needed for the smooth and effective evolution of the project across its lifecycle.

3.1 Decision Process

Decisions will normally be taken by the responsible team members, and organization bodies based on the description of work to be performed, as stated in the Contract, the Description of Work (DoW), the Consortium Agreement (CA), and the Quality Management Plan, as communicated regularly, and the individual Work Package or Task plans. In case there is a dispute between two or more team members, an escalation procedure must be followed, as presented below in the Conflict Resolution section.

3.2 Conflict Resolution

In the course of the project, the eVACUATE consortium will have to agree on and develop technical, scientific and commercial ideas and specifications. Usually, agreement will be reached by informal contact, followed by official confirmation via electronic mail, letter or agreed written minutes. For important issues, the agreement may take the form of a short report that needs to be signed by those responsible for decision-making purposes. Non-technical factors such as resource allocation and contractual terms will also need to be agreed and documented in writing. Technical issues/conflicts within given contractual commitments that do not involve a change of contract, a change of budget and/or a change of resources/ overall focus will be discussed/solved on the WP level. If the decision being taken is unacceptable to partners found in the minority positions, the resolution of the conflict will be escalated according to the path as specified in Figure 3. The escalation procedure is summarised in the following steps:

1. First, the implementation team will inform the WP leader and the project Coordination team for the conflict occurred.
2. The WP leader will organise a WP team meeting and the issue will be discussed. In either case of agreement or disagreement, the team will inform the Coordination team.
3. In case of disagreement or not reaching solution to the problem, the coordination team will meet with the relevant parties in order to discuss the conflict. If no agreement occurs the issue will go to the Technical Committee which will have the authority for the final decision.
4. The final decision must be accepted by all parties.
5. In all the above cases, if voting is required, the voting rules per management group will apply.

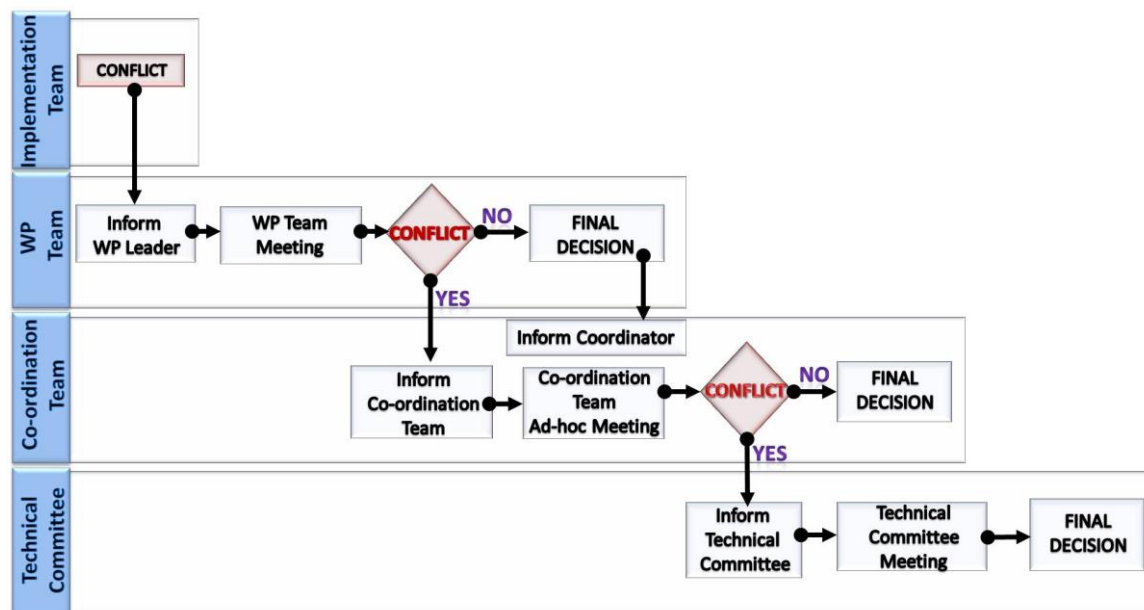


Figure 3.2.1: eVACUATE Technical Conflict Resolution Procedure

3.3 Communication among Partners

3.3.1 Information flow

Information flow within the Project will be ensured by:

- The exchange of internal technical and business documents (through the document server, email exchanges etc.).
- Notification of relevant new publications in the literature, or by the standard bodies.
- Reports from external meetings.
- Meeting minutes.
- Project physical or virtual (audio-conf.) meetings.
- Project website.

All technical documentation generated by the project should be exchangeable in electronic format, according to a set of guidelines to be agreed and will be described in section 4.2 (Reviews for Documentation-Project Deliverables). The Quality Manager will enforce adherence to these guidelines.

Exchange of information will mainly occur by file transfer over Internet and e-mail. The basis of the project communication lay upon the usage of the eVACUATE secure collaborative working space (intranet site), where all partners will have secure and author rights to create/edit/review documents/news etc. Additionally, EC officials (project officer etc.) will have reading rights to specific folders. This collaborative space includes:

- **Libraries** with all baseline documents (DoW, Legal documents, CA, contract with EC, etc.), deliverables, WP documents, meeting minutes, multimedia files, presentations, reports, dissemination materials, etc.
- **Contacts:** This domain includes all emailing lists required for efficient quick and in general optimum communication between the consortium members. Additional contact details e.g. Project Officer contact details will be also available.
- **Calendar** for important events/ meetings/ dates / milestones / deadlines.
- **Project Announcements**
- **Team discussions:** list of open discussions between the members of eVACUATE project.

- **Tasks:** Users are able to check the most important tasks and the corresponding persons who are responsible to undertake them in order to keep themselves always updated regarding the progress of the work obtained within the project.
- **Links:** Useful links relevant to eVACUATE objectives

The Project Coordinator will be responsible for the structure and maintenance of the private website².

Urgent correspondence over e-mail will be sent with a request for explicit acknowledge. Ordinary mail will be used for strictly formal correspondence, i.e. when executive signatures are required. Adherence to the agreed communications standards will be enforced by the Project Manager and the Quality Manager.

3.3.2 Meetings

Plenary Board and Technical Committee meetings will take place twice a year. WP meetings will also be realised whenever required. All meeting arrangements will be communicated to the Project Coordinator, which will undertake to optimise the timing and location of meetings, by organising more-than-one meetings in parallel, thus minimising travel costs.

The following table summarises the plan of the various project meetings.

Table 3.3.1: Timetable of project's meeting

PROJECT BODY	PARTICIPANTS	POSSIBLE OBJECTIVES	MEETING FREQUENCY
Technical Committee	Project Coordinator Technical Manager Innovation Manager Exploitation Manager Quality Manager WP Leaders	<ul style="list-style-type: none"> ➤ Supervision of the project progress and time plans. ➤ Deciding upon all relevant technical and administrative issues. ➤ Conflict Resolution ➤ Inclusion of a new Partner, substitution or exclusion of an existing Partner 	Every three months (if required), otherwise will be combined with plenary meetings
Plenary Board	Representatives from all the partners	<ul style="list-style-type: none"> ➤ Review and plan project work ➤ Discuss progress ➤ Present results/outcomes ➤ Resolve minor issues 	Every 6 Months
Coordination Team	Coordination Team & other parties where necessary	<ul style="list-style-type: none"> ➤ Review and plan project work ➤ Conflict Resolution issues 	Ad-Hoc
WP Technical Meetings	WP Leader Representatives from the partners' technical teams	<ul style="list-style-type: none"> ➤ Monitoring WP progress ➤ Specific technical scopes and transfer of knowledge 	Whenever required

NOTE:

For the efficient management of partners' resources (travel budget, personnel, etc.) regarding the meetings that are already scheduled within the frames of eVACUATE, the partners should update the Calendar of the SharePoint Collaborative Tool in a regular basis.

² Collaborative Space Environment and its corresponding functionalities are presented in details in the document **eVACUATE SharePoint Collaborative Tool Tutorial v1.0.pdf** stored in eVACUATE private Area.

by entering the forthcoming meetings that they intent to organize/initiate at least 1 month before the due date of the specific meeting. Within this context, the rest of the consortium will always have a clear view of the forthcoming meetings that have been already arranged inside the project while being able to merge meetings with similar topics or express their interest to participate or not, based on their level of involvement and their availability.

3.3.3 Measurement of Project Progress

A. Quarterly Management Reports

Quarterly management reports should be submitted by each partner to the Coordinator, by the 1st week of each sixth month. The purpose of this report is to regularly inform the Coordinator regarding the progress of the project. They are brief consolidated reports based on the internal reports provided by the WP Leaders including:

- Work and achievements of the project per WP
- Dissemination actions during that period
- Resources
- Plans for next quarter

B. Interim Progress Reports

Interim progress reports should be submitted by each partner to the Coordinator, to be forwarded to the commission every eight months. The project coordinator will prepare the templates and circulate them to the consortium while also gather and consolidate all partners' inputs in the report to be sent to the EC. The purpose of this report is to regularly inform the EC project officers regarding the progress of the project. They are brief consolidated reports based on the internal reports provided by the WP Leaders including:

- Technical progress of the project per WP
- Problems encountered during the project
- Risk management
- Key Performance Indicators (KPIs) status

C. Annual report to Commission

Annual reports are extended reports that will form the basis for the editing of the annual periodic progress reports to be forwarded to the Commission reporting the progress of the project during each period of the project (16 Months). The whole project management activity and information flow will be also supported by applications already developed by the project partners. The Annual reports templates will be provided by the EC. They are extended reports including the following:

- Official Costs statements including all expenses in the period (including financial audit certificates)³
- Detailed technical progress of the project per WP
- Reports on the problems encountered during the project
- Risk management results
- KPIs etc.

The annual report will be based on the template provided by the EC for IP Projects in FP7 [1].

³ See ftp://ftp.cordis.europa.eu/pub/fp7/docs/guidelines-audit-certification_en.pdf & ftp://ftp.cordis.europa.eu/pub/fp7/docs/financialguide_en.pdf

4 Quality review within eVACUATE project

Within the frames of the eVACUATE project the review of the project deliverables will take the following type of actions:

4.1 Reviews for Hardware/Software

Hardware/Software review will be conducted during the testing procedures. The Technical Manager will be responsible to evaluate it, in close collaboration with the Quality Manager, in order to verify and validate the testing results. Technical aspects of the hardware/software will be reviewed by the Technical Committee according to the technical, infrastructure and design specifications decided to be included.

4.2 Reviews for Documentation-Project Deliverables

Each project deliverable is assigned to one leading responsible partner. This partner takes the responsibility that the deliverable is of high quality and timely delivered. The responsible partner assures that the content of a deliverable is consistent with the team-workings of the deliverable and that the particular objectives related to the goals of the project are met. Any issues related to deliverables, endangering the success of the work package or the project, have to be reported by the WP leader immediately to the project management and discussed within the Coordination team.

Project documentation will be reviewed against the following criteria:

- Format of the document according to the document templates (see Annexes).
- Consistency with previous relevant documentation (for example, technical specifications combined with the requirements definition).
- Identification and correction of typing mistakes, etc.
- Technical aspects of the documentation will be reviewed from the Technical Committee in order to ensure that the document meets the technical goals of the project, and that all technical information is advancing the current state-of-the-art and the recent technological research level.

The procedure and timeline for the review project documentation is illustrated in the following figures and described in the following paragraphs.

The partner responsible for preparing the deliverable, drafts a Table of Contents (ToC), assigns tasks to all involved partners and sets the respective deadlines. Involved partners provide their feedback within the deadlines and the responsible partner prepares the first draft of the document. This draft is sent to the entire consortium for comments and improvements / additions. The feedback period for project partners lasts at least five working days. Feedback is sent directly to the responsible partner who revises the document and prepares the semi-final version.

The Quality Control Process begins based on the semi-final version of the deliverable. At least two Internal Reviewers, who are not members of the authoring team but have expertise in relation to the deliverable, have been assigned in advance. The Internal Reviewers send their comments to the Quality Manager who consolidates and checks the reports and sends them to the partner responsible based on the eVACUATE DoW. This partner then improves the document based on their comments. In case the comments / suggestions cannot be realised, the reasons for this must be documented. If necessary (i.e. if there are too many comments on the first round), another round of comments from the Internal Reviewers takes place.

The version that is prepared is then submitted for a final round of comments by the entire consortium. If there are comments, the partner responsible addresses them appropriately and prepares the final version of the document, which is sent to the coordinator.

The coordinator then submits the document to the EC. The process described above is depicted with the following figures:

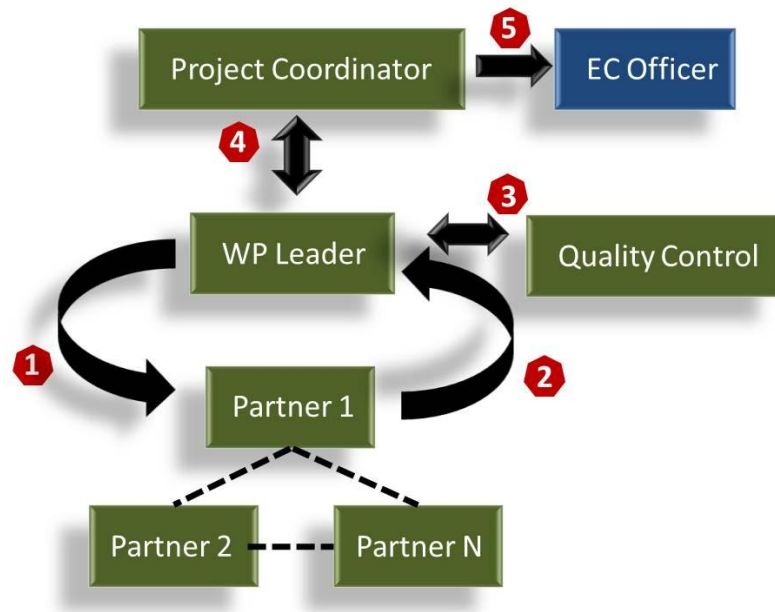


Figure 4.2.1: eVACUATE Deliverable Preparation and Review Procedure

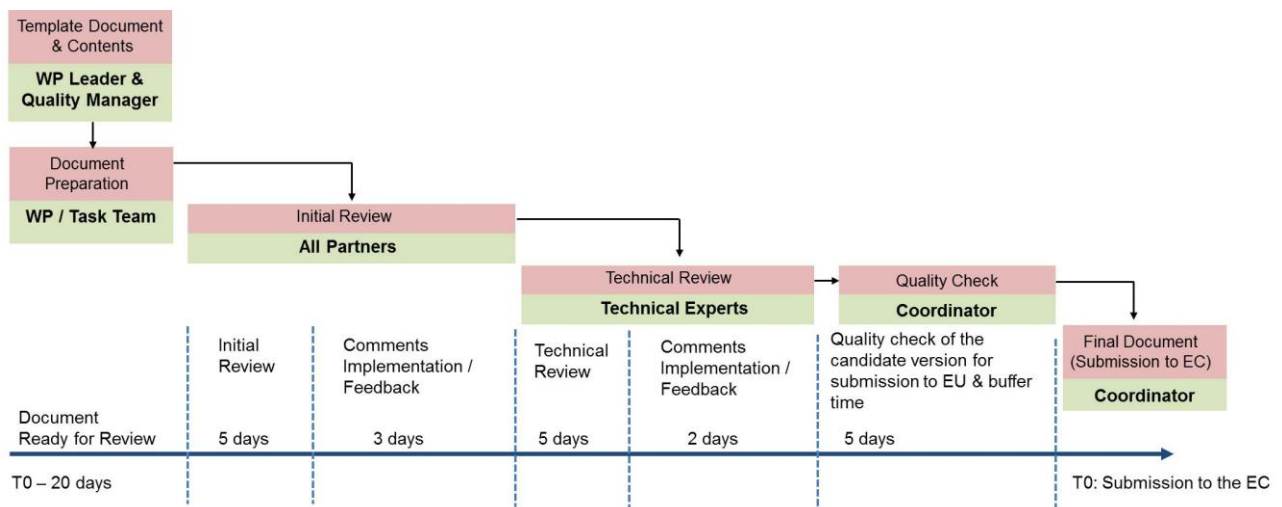


Figure 4.2.2: Indicative Timetable for Internal Review Procedure

4.3 List of Deliverables and relevant Reviewers

The list below includes the list of eVACUATE deliverables and the relevant reviewers for each deliverable:

No.	Title	Responsible	Due	Reviewer 1	Reviewer 2
D.1.1	Quality Management Plan	EXO	M03	ICCS	INDRA
D.1.2	Internal website	EXO	M04	VITRO	INDRA
D.2.1	User requirements – First Version	HKV	M09	INDRA	ICCS
D.2.2	System requirements	HKV	M09	INDRA	ICCS
D.2.3	Evaluation Criteria and scenario definitions	HKV	M12	INDRA	ICCS
D.2.4	User requirements – Final Version	HKV	M24	INDRA	ICCS
D.3.1, D.3.2	Crowd psychology and typology classification with semantic enrichment (v1.0, 2.0)	ITINNOV	M13, M24	INDRA	POLITO
D.3.3, D.3.4	Multi-scale crowd behaviour recognition technical specification (v 1.0, 2.0)	ITINNOV	M12, M24	POLITO	ICCS
D.3.5	Multi-scale crowd behaviour Recognition models validations (Final Report)	ICCS	M36	POLITO	IT INNOV
D.3.6, D.3.7	Multi-scale crowd behaviour recognition module (software, version 1.0; 2.0)	ICCS	M18, M32	POLITO	IT INNOV
D.4.1	Technical Note detailing Optimum Evacuation Route work	CDI	M18	ITINNOV	POLITO
D.4.2	Alpha version of predictive component	CDI	M24	ITINNOV	POLITO
D.4.3	Beta version of predictive component	CDI	M30	ITINNON	POLITO
D.4.4	Technical Report on validation of predictive component and associated crowd modeling techniques	POLITO	M30	CDI	VITRO
D.5.1	COPSI initial specification and design report	DXT	M11	CDI	ITINNOV
D.5.2	COPSI databases for beta	INDRA	M11	DXT	ITINNOV

	release validation				
D.5.3	COPSI beta release	DXT	M20	INDRA	CDI
D.5.4	COPSI revised specification and design report	DXT	M26	INDRA	VITRO
D.5.5	COPSI databases for final release validation	INDRA	M32	DXT	ITINNOV
D.5.6	COPSI final release	DXT	M38	INDRA	CDI
D.6.1	Communication System Architecture & Specifications	ICCS	M16	INDRA	IT INNOV
D.6.2	Communication Implementation & Connectivity	ICCS	M26	TEK	POLITO
D.6.3	Seamless Interoperability & Security Issues	TIM	M32	VITRO	DXT
D.7.1	Optimization of roll-to-roll Printing technology for RFIDs	TUD	M18	TUC	INDRA
D.7.2	Architecture of Smart Spaces	INDRA	M19	TEK	VITRO
D.7.3	First design of roll-to-roll RFIDs	TUD	M22	TUC	INDRA
D.7.4	Description of all the relevant agents for being integrated in the Smart Spaces	TEK	M25	TEL	INDRA
D.7.5	Rule Set Tool	VITRO	M25	TEK	TEL
D.7.6	Smart Space Information Model: Data Models and ontologies	TEL	M30	TEK	INDRA
D.7.7	Optimized roll-to-roll printing and RFID tags	TUC	M30	TUD	INDRA
D.8.1	System Specifications and Data Fusion System Architecture	VITRO	M12	INDRA	ITINNOV
D.8.2	ICD Report	VITRO	M12	CDI	INDRA
D.8.3	Scenario Analysis and Reasoning Engine Development	VITRO	M26	ITINNOV	INDRA
D.8.4	The eVACUATE Emergency Operations Centre	EXO	M30	VITRO	INDRA
D.9.1	The eVACUATE Integrated System release 1	INDRA	M18	TEL	VITRO
D.9.2	Integration Protocol	INDRA	M34	ICCS	ITINNOV
D.9.3	The eVACUATE Integrated System release 2 - ready for	INDRA	M38	ICCS	TUD

	Pilot Testing				
D.9.4	Quality Assurance –System Reliability – Traceability Document	EXO	M42	INDRA	ICCS
D.10.1	Interim Pilot Testing report from the perspective of end users and their needs	HKV	M24	INDRA	AIA
D.10.2	Training report (per case study)	HKV	M41	TEL	DXT
D.10.3	Exercise report (per case study)	STX-FR	M48	HKV	INDRA
D.11.1	High level ethical and legal framework, formulating ethical and legal requirements for eVACUATE	KUL	M06	STX	INDRA
D.11.2, D.11.3	Ethical & legal requirements Analysis (specifications, proportionality, implementation & evaluation)	KUL	M24, M36	INDRA	HKV
D.11.4, D.11.5	Ethical and legal evaluation report and recommendations	KUL	M24, M36	HKV	INDRA
D.11.6	Recommendations for standards	INDRA	M48	KUL	VITRO
D.12.1	eVACUATE project website	VITRO	M03	EXO	INDRA
D.12.2	Dissemination strategy and plan	VITRO	M24	INDRA	ITINNOV
D.12.3	eVACUATE Exploitation plan	VITRO	M40	INDRA	STX-FR
D.12.4	eVACUATE user manuals	VITRO	M48	INDRA	TIM

5 Configuration Management

Configuration Management deals with the overall project consistency, identification and tracking of changes related to all project results including the deliverables, documents, testing procedures and any other related activity. The *Quality Manager* will be responsible for the overall monitoring of all configuration management activities described in this section.

5.1 Document Configuration Management

Document configuration management will be ensured through the tracking of the versions and history of changes of the various project documents:

- Deliverables (as stated in the deliverables list in the eVACUATE Contract)
- Meeting minutes
- Reviewed documents

Document history will be tracked in each deliverable in a separate table describing the different versions of the document and the reasons of change/updates on it (see Annex C – eVACUATE Deliverable Document Template). Each deliverable main author will be responsible for updating this.

Document versioning will be tracked through the monitoring of the Configuration Matrix in which all versions of each document will be tracked. Also this table will be updated by each document author.

In the following subsections the document naming conventions to be followed in eVACUATE are analysed.

5.1.1 Deliverables

Table 5.1.1 presents the convention followed for naming the project's deliverable documents.

Table 5.1.1: Deliverables Naming Conventions

Coding:	eVACUATE [Deliverable Code] vA.B
A:	S/n for major release of the deliverable (Submission to Commission)
B:	S/n for updates during the preparation phase
Example	eVACUATE D.12.1 v1.0 (for submission to the Commission) eVACUATE D.12.1 v0.9 (for internal updates and submission for internal review)

5.1.2 Reviewed Documents / Forms

The below naming convention will be used for the reviewed deliverable document (comments & track changes on the existing document) or the Review Form (Please refer to Annexes).

Table 5.1.2: Reviewed Document Naming Conventions

Coding:	eVACUATE [Deliverable Code] vA.B -TR-[Company] vA.B eVACUATE [Deliverable Code]vA.B -QR-[Company] vA.B
A:	S/n for major release of the deliverable (Submission to Commission)
B:	S/n for updates during the preparation phase
TR:	Technical Reviewed document
QR:	Quality Reviewed document

Example	eVACUATE D.1.1 v0.3-TR-INDRA v0.5 (Technical Reviewed Document from INDRA) eVACUATE D.1.1v0.4 -QR-EXO v0.6 (Quality Reviewed Document from EXODUS)
---------	---

5.1.3 Meeting Minutes

Table 5.1.3 presents the naming convention followed for a meeting minutes document.

Table 5.1.3: Meeting Minutes Naming Conventions

Coding:	eVACUATE [Type of Meeting] Minutes Date(s) @Place vA.B
A:	S/n for major release of the document
B:	S/n for updates during the preparation phase
Date:	Date(s) that meeting was held
Place:	Place where meeting was held
Example	eVACUATE Kick-Off Meeting Minutes 22-24 April 2013 @Athens v1.0

5.1.4 Tests

Specific testing methodology will be provided during the specific tasks allocated to this. However, the following types of tests are already scheduled within the DoW:

- **Basic tests:** Basic tests are used to technically test elementary items. These tests are under the responsibility of the developer of each individual HW or SW component.
- **Integration tests:** These tests are under the responsibility of the integrator. These tests are used to ensure that different items are compatible (especially for interfaces) and their synthesis provides the overall functionality.
- **Field trials & Pilot demonstration:** These are the large scale field trial and pilot demonstration activities that are going to be executed in the course of WP10.

These tests will be implemented following specific test scenarios and test cases. It is the responsibility of the testing organisation (depending on the type of test) to provide test scenarios and test cases to be included in the testing, integration and field trials respectively.

Table 5.1.4: Test Scenarios Naming Conventions

Coding:	TS-SN
TS:	Test Scenario
SN:	Serial Number

Table 5.1.5: Test Case Naming Conventions

Coding:	TC-SN
TC:	Test Case
SN:	Serial Number

5.1.5 Software Configuration

The software components monitoring, will be done using a software version configuration tool (CVS, SVN etc.), which will be installed on a central Server. This will ensure that all necessary components of the eVACUATE system will be available for the distributed development teams.

6 Quality Attributes and Key Performance Indicators - Risk Management

6.1 Quality Attributes

In order to assess the quality of the project results, in the general terms, several qualitative attributes will be used based on the nature of the eVACUATE project and the characteristics of its end-users as well as the “context of use” of project results.

On the other hand, quality is addressed also by ensuring the compliance of all the project activities to the *development process*. The main attributes that address this need are:

- Planning accuracy
- Rework occurrence
- Conformity to methodologies
- Redundancy

All these attributes will play an important role in the measurement of the project Key Performance Indicators (KPIs) described in the following section.

6.2 Key Performance Indicators

Monitoring of the progress of the project objectives will be done by the Technical Manager (INDRA) through Key Performance Indicators (KPIs). KPIs will be monitored bi-annually and will be presented in the project's Interim Report and in the Periodic Management Report. The following metrics will be used as the starting point:

Table 6.1.1: eVACUATE Key Performance indicators per WP

WP – Activities	Performance Indicator	Framework for Metrics	Target values
WP1 - Project Management Activities	1-1: On time submission of deliverables	1-1-1: In time project progress: No. of deliverables submitted on time (M16,32,48)	> 80%
	1-2: Quality of deliverables	1-2-1: Percentage of rework requests (over total no. of deliverables) (M16,32,48)	< 20%
WP2 – User Requirements	2-1: Analysis of the end user requirements and needs	2-1-1: Determination of what can be offered to potential users by partners	>=80%
		2-1-2: Creation of a questionnaire to determine the requirements of the end user (M03)	>=30 questions
		2-1-3: Interviewing end users (M06)	>=1 per user
		2-1-4: Redaction of a report on mission and functional requirements (M24)	= 1
	2-2: Analysis of the state of the art of current evacuation ICT support systems	2-2-1: Redaction of a report about currently used ICT support systems (Task 2.2) (M09)	= 1
	2-4: Identification of Needs in training and knowledge transfer	2-4-1: Written report end-user requirements (M24)	=1
WP3- Crowd Behaviour Detection and Recognition in crisis situation	2-5: Identification of User Scenarios	2-5-1: Written report on identification and evaluation of four user scenarios (M12)	=1
	3-1: Multi-scale crowd behaviour recognition Analysis	3-1-1: Release of Multi-scale crowd behaviour recognition software (M24)	=1
	3-2: Unusual event Detection	3-2-1: Unsupervised detection of unusual behaviours through computer vision and deep learning methodologies (M36)	False positive detection ratio under 70% False negative detection ratio under 75% >80% performance of good behaviour classifications

WP – Activities	Performance Indicator	Framework for Metrics	Target values
		3-2-2: Learning Methods for probabilistically learned abnormal behaviours in near real time (M30)	<10sec
WP4- Advanced Strategic Spatial Evacuations	4-1: Real-time Prediction of crowd congestion and spatial constraints	4-1-1: Create document (D.4.4) that describe the design and development of a predictive component based on real-time crowd modelling software and algorithms (M30)	=1
WP5- 3D Interactive Common Operational Pictures and Simulation	5-1: Visualization of a clear and complete Common Operational Picture of the crisis situation	5-1-1: Number of frames/sec displayed (incl. Indoor & surroundings) (M38)	>15 FPS
		5-1-2: Time to correctly localize the displayed situation and synthesis the major elements (incidents, potential risks) (M38)	<5 sec
		5-1-3: Create specification document describing the hardware and software architecture in order to implement the 3D COPSI system (M38)	=1
	5-2: Interactive Simulation	5-2-1: Level of credibility assessed by experts (M38)	>4 on a 6 mark scale
		5-2-2: Impact on the frame rate of the COP (M38)	FPS decrease < 10%
		5-2-3: Impact on the legibility of the COP (M38)	Decrease <10%
	5-3: User friendly interface	5-3-1: Number of innovative technologies (M38)	>3
WP6 – Resilient Communications and Adaptive Interfaces	6-1: Communication Security and Interoperability	6-1-1: Create document that defines communication security and interoperability between all involved parties (M32)	=1

WP – Activities	Performance Indicator	Framework for Metrics	Target values
	6-2: Availability of Communication infrastructure	6-2-1: Number of data sources integrated at EOC (M32)	>3
WP7- Smart Spaces	7-1: Design of R2R printed RFIDs on paper (M30)	7-1-1: Cost for printing of the RFID tag	~0,01 € per 30 cm ²
		7-1-2: Life Time	~3 months
		7-1-3: Coverage range	~1 meter
		7-1-4: DC power consumption	Zero, since passive concept
		7-1-5: Number of bits	>=3bits
	7-2: Design of R2R printed RFIDs on paper	7-2-1: Detect crowd density using visual cues; Agent detection in low density conditions; crowd flow estimation in crowded conditions (M30)	>70%accuracy
	7-3: Tracking of salient obj./events	7-3-1: Installation of Cluster of cameras operating either under an overlapping or non-overlapping approach (M30)	=100%
	7-4: Local control of smart spaces	7-4-1: Design and development of a Rule set Tool to allow local control of the elements within the smart Space (M30)	=100%
	7-5: Real-time positioning and localization precision (M30)	7-5-1: Number of possible sensor nodes	~10
		7-5-2: Indoor coverage range per sensor node	>50m/node (can be scaled up-array of sensor nodes)
		7-5-3: 3D indoor positioning accuracy	<0,5 m @ 50m coverage, <20 cm @ 10 m coverage
		7-5-4 Indoor measurement time for 3-D position (RT)	<0,5 sec
WP8 – Decision Making and Optimal “Situation Aware” evacuation Strategy	8-1: SAES system Interface Definitions	8-1-1: Create system architecture document that defines how DFMS and Smart Spaces will interact including interface definitions which will be used by WP9 for the integration of the overall	=99%

WP – Activities	Performance Indicator	Framework for Metrics	Target values
		system (M12)	
	8-2: Design and development of the SAES system	8-2-1: Create specification document describing the hardware and software architecture in order to implement the SAES (M30)	=100%
	8-3: Design and development of EOC	8-3-1: Create specification document describing the hardware and software architecture in order to implement the EOC (M30)	=100%
	8-4: Effective data fusion	8-4-1: Database synchronization between different sources (M30)	< 1 min
		8-4-2: Percentage of data collected and processed in a given period of time (M30)	90% of data in 1 min
	8-5: EOC integrated System Dimensioning and application performance	8-5-1: Percentage of User Requirements items mapped into EOC detailed design (M30)	95%
		8-5-2: Number of data sources the system can support (M30)	> 2
		8-5-3: Number of new data updates per unit of time (M30)	80% of data < 1 min
		8-5-4: Percentage of User Requirements fulfilled in integrated system (M30)	>90%
WP9 – SAES Framework design and system Integration	9-1: Design of the eVACUATE framework	9-1-1: Create specification document describing the hardware and software architecture in order to implement the eVACUATE framework in WP9 (M34)	=100%
	9-2: Integrated System Architecture and Interface Definitions	9-2-1: Create system architecture document that defines how SAES and EOC will interact incl. interface definitions which will be used by WP9 for the integration of the overall system (M34)	=100%

WP – Activities	Performance Indicator	Framework for Metrics	Target values
	9-3: User friendly Interface	9-3-1: Percentage of User Requirements fulfilled in integrated system (M42)	>90%
	9-4: User Requirements traceable at integrated system	9-4-1: Percentage of System features available at integrated system (M42)	>95%
	9-5: System features traceability at integrated system	9-5-1: Percentage of System Verification/Validation tests passed (M42)	>95%
WP10 – Pilot Demonstrations and Validation	10-1: Design of training and knowledge transfer	10-1-1: Compilation of number of written and electronic manuals for end-users (M24)	>=2
		10-1-2: Design and production of one online tutorial (M41)	=1
	10-2: Training and knowledge transfer activities	10-2-1: One online briefing for administrative representatives and potential users (to be used multiple times) (M41)	=1
		10-2-2: One online training in preparation of the scenarios (M41)	=1
		10-2-3: Four scenario demonstrations for experienced operators and commanders (M41)	=4
	10-3: Training reports and lessons learned	10-3-1: A written report after each training (M41)	=4
		10-3-2: One written report on Lessons learned from Training activities (M41)	=1
	10-4: Pilot scenarios revision and set up	10-4-1: Number of scenarios (M48)	=4
		10-4-2: One test user group (task definition, selection and training) (M48)	=1
		10-4-3: online briefings for all participants (M41)	>=1
		10-4-4: Online trainings for all	>=1

WP – Activities	Performance Indicator	Framework for Metrics	Target values
		participants (M41) 10-4-5: One computer simulated training for all participants (M43)	=1
	10-5: Testing and validation of the system with scenario “Football Stadium evacuation”	10-5-1: Field tests of the system with scenario “Football Stadium evacuation” (M48)	>=1
	10-6: Testing and validation of the system with scenario “Airport”	10-6-1: Field test of the system with scenario “Airport evacuation” (M48)	>=1
	10-7: Testing and validation of the system with scenario “Cruise Ship evacuation”	10-4-1: Field test of the system with scenario “Cruise Ship evacuation” (M48)	>=1
	10-8: Testing and validation of the system with scenario “Metro Station evacuation”	10-8-1: Field test of the system with scenario “Metro Station evacuation” (M48)	>=1
	10-9: Results technical details and system evaluation	10-9-1: One written report about the organization of the field tests, summarizing results and feedback of users. (M48)	1
WP11 – Regulatory framework, Legal Aspects, Definition of Standards	11-1: Contacts with CEN / CENELEC and ETSI to develop a joint approach to standardization and regulation of eVACUATE related activities	11-1-1: Select the standardization scenario (CEN/CENELEC, ETSI, others) to develop standardization work item or standardization work plan	At least one contact every 6 months, but definition of standardization work plan or work item defined at each deadline
	11-2: Contacts with all relevant stakeholders with specific consideration to end-users (National Security Authorities and Citizens) for the Analysis of Security in a Free democratic society; Security Architecture and Security Culture)	11-2-1: Number of contacts with National Security Authorities and organizations representing Citizens and authorities dealing with public procurement and early-procurement in the security domain	At least one contact every 6 months
WP12 - Dissemination	12-1: Effectiveness and Impact of	12-1-1: Visibility public website of eVACUATE project (number of page	Approximately 1000 visitors per year

WP – Activities	Performance Indicator	Framework for Metrics	Target values
Activities	Dissemination activities	impressions)	
		12-1-2: Number of written and electronic publications (in academic and technical media) (M48)	>=10 (total)
		12-1-3: Number of presentations (in symposiums, meetings, congresses) (M48)	>=12 (total)
		12-1-4: Organization of specific eVACUATE workshops (M48)	=3(total)
WP12 - Exploitation Activities	12-2: Exploitation of overall system or specific system parts (if applicable)	12-2-1: Participation to workshops and fields demonstrations of other R&D projects about Security issues (M48)	>=4 (total)
		12-2-2: Redaction of a business plan and a market analysis about each specific component and the whole system (M48)	=1
		12-2-3: Redaction of the guidelines for operational use of the system (M48)	=1
		12-2-4: Redaction of the exploitation plan, containing a dissemination and use plan and a technology implementation plan (M48)	=1
	12-3: Impact of the eVACUATE system on end-users	12-3-1: Evaluation of users' feedback after the eVACUATE demonstrations (M48)	>80% satisfaction from the usage of the system/platform

NOTE: All Target values are indicative; it will be determined after the user requirements analysis procedure is finalized (WP2) (end-user responses to user questionnaire).

6.3 Risk Management

The Project Management Team will apply the PMI [2] Risk Management Methodology for the project risks and the Software Risk Evaluation (SRE) Methodology [4] from the Software Engineering Institute of Carnegie Mellon University (SEI) for the Software Risks. The former will be responsibility of the Project Coordination Team while the latter will be responsibility of the Project Technical Manager to execute and follow. They are both considered essential in such a complex project as eVACUATE, aiming to assure the success of the project. The central idea of both methodologies is the continuous discovery, analysis and setting of mitigation strategies for every element of potential project risk.

Following these methodologies in the eVACUATE project, a systematic and continuous process will be implemented in order to identify risks, analyse their data and estimate probability and impact, consolidate risk into areas for management action, and creation of mitigation strategy plans.

The Project Coordinator will ensure the communication of the risks to the project teams and develop project staff awareness of risk management. Risks and risk strategy plans along all types of project risks will be continuously reported in the Interim and Periodic Activity Reports.

6.3.1 Consortium Risk Management

The eVACUATE consortium has considered consortium related risks that deal with (1) underestimation of some tasks, (2) low productivity and (3) low quality of work. These risks are already minimised during the selection of partners, which most of them have been selected following specific criteria:

- They are leaders in their areas of expertise;
- They are selected after previous successful cooperation, with coordinator or with other trusted members of the consortium;
- They all have evidence of long history of successful completion of research projects.

However, these risks will be minimized and managed by using established methodologies for hardware/software cost estimation, continuous project planning, monitoring and control. Such methodologies are standard practice in the professional work of the consortium partners. To this end, timely awareness of and reaction to potential problems will be crucial to effective risk management.

6.3.2 Integration Risks

eVACUATE acknowledges that the complexity of its systems, the fact that the technologies are the current state of research or entirely new and the big number of hardware/software components introduces a significant concern regarding integration risks. The integration risks will be tackled in detail in WP9, in what relates to the integration of the Situation Awareness and Evacuation System (SAES) components, towards the development of the eVACUATE overall framework. This significant concern is minimised due to the risk avoidance strategy that is already applied and will continue to be applied during the project execution:

- eVACUATE consortium composition provides significant integration experience from a number of partners such as EXODUS, INDRA, Tekniker-Ik4, Telesto, VITRO, DXT, POLITO, TUD, TUC and TIM which is evidenced in the DoW document.
- Development of different modules and integration points are based on open and established frameworks and existing integration technologies (OSGi, web services). This is already specified and agreed at the consortium and besides the project will continuously monitor for any significant new standard around its fields of interest and will adopt them accordingly.

- The eVACUATE architecture and plan envisages the definition of interfaces between hardware and software components at specification level in order to minimise the potential risks. Furthermore, it already foresees revision of it at later stage to accommodate development changes.
- The project foresees the development of integration protocol within WP9 before any integration really takes place.
- Last but not least, the project coordinator EXODUS is a well-established software and system integrator and has a lot of experience in working with empty-shell approach, which especially focuses on the integration levels of complex systems and may consider following this approach in eVACUATE.

In any case, beyond this risk avoidance strategy, eVACUATE will continuously monitor project risks.

6.3.3 EVACUATE Risk Registry

As a first measure, the following table provides an early account of the major risks of project operation, and the proposed mitigation strategies. This Risk Registry will be updated bi-annually and will be presented in the Interim Reports and in the Periodic Management Reports. The following table will be used as the starting point.

Table 6.3.1: EVACUATE Risk Registry

WP	Risk	Probability of Risk (Low-Medium-High)	Severity of Impact (Minor-Medium-Severe)	Mitigation strategies	Responsible
Technological Risks					
WP7	Local Positioning System: Ultrasonic approach, which is favourable concerning costs and circuit complexity, may show problems in harsh environments, e.g. dust in a forest fire, and may provide not enough coverage range	High	Severe	Change to more complex approaches, which are favourable regarding harsh environments based on microwaves e.g. FMCW or UWB radar, optimum solution will be chosen considering specific requirements of the target eVACUATE applications	TEK
WP6,	Local Positioning System: Degradation of indoor positioning accuracy in scenarios with strong multipath propagation	High	Medium	Use of e.g. redundancy, improved algorithms using averaging methods and more bandwidth making LPS less sensitive regarding strong multipath propagation	TEK

WP	Risk	Probability of Risk (Low-Medium-High)	Severity of Impact (Minor-Medium-Severe)	Mitigation strategies	Responsible
WP7	Roll to roll printed passive chip-less RFIDs on foil/paper. The detection range and the number of bits may be limited. Simultaneous reading of multi-tags is not supported by the system.	Medium	High	Even one meter coverage range is sufficient if people pass a gate/door which is available in many locations. Even 3 bits (8 objects can be distinguished) are valuable e.g. to get information about group affiliation (child, disabled, or security force person, etc.) is needed. Major advantageous of our approach is the extremely low cost and the general info if somebody passes, e.g. for counting of humans and crowd monitoring. Research from the early stage of the project in WP7 in view of developing new techniques and algorithms that will serve reading of multi-tags simultaneously will be obtained.	TUD
WP6	Interconnection: Failure to ensure system wireless interconnection for different devices	Low	Minor	Use flexible and low-power protocols, and foresee Bluetooth, Wi-Fi or other wireless technology as baseline for interoperability	ICCS
WP6	Communication with control center: Loss of communication link	Medium	Severe	Implement several standards (GSM, GPRS, EDGE, UMTS, Wi-Fi) to communicate with control center Foresee an open architecture allowing other standards as well.	ICCS, TIM
WP9	Integration: Integrated system does not perform as expected	High	Severe	Perform component tests and characterization before integration to minimize the risk and quickly identify a problem if occurs	INDRA
WP2	Gender, Age, Nationality, Temperament: The system does not address all potential mentalities	Medium	Medium	Take the differentiation issues due to different factors (Age, Gender, Nationality etc.) into consideration when designing the eVACUATE platform to produce a universal system at the end of the project	HKV, INDRA

WP	Risk	Probability of Risk (Low-Medium-High)	Severity of Impact (Minor-Medium-Severe)	Mitigation strategies	Responsible
WP2	User acceptance: The system is not accepted by the users	Low	Severe	Involve the users from the beginning (project partners) and for, to provide the requirements Users will participate during the whole project and perform the system tests and validation	HKV, INDRA
WP2	Not enough data from end-users. End-users are not able to provide enough feedback as they are considered sensitive data.	High	Medium	Identify from the beginning of the project all public available sources, apart from those deriving directly from end-users, including internet, youtube videos, literature, media, etc. in order to be exploited from the technical partners in case of lack of info. Involve end-users from the beginning of the project to identify information availability and propose alternative sources.	HKV, end-users
WP6, WP8	Communication Interoperability: Inability to provide a continuous communication service to and from a crisis scene.	Medium	Severe	An integrated communication platform will be developed both for the sensors and the people/crowd; which is versatile, extensible and robust; that can be readily configured for a wide variety of sensing and crisis scenarios; providing inter and intra crisis communication facilities for the sensors and people/crowd; transparently accessed remotely from the control centre as well as locally by the first responders	ICCS, TEL, TIM
WP7, WP9	Indoor positioning: Inability to define with accuracy the movement of the entrapped citizens within any given infrastructure	Medium	Medium	RFID Roll-to-Roll technology printed on metro tickets, to be able to monitor, movement of people through predefined checkpoints (emergency exits).	TUD, INDRA

WP	Risk	Probability of Risk (Low-Medium-High)	Severity of Impact (Minor-Medium-Severe)	Mitigation strategies	Responsible
WP6	Communication and Information Security with crises sites: Communications and IT breaches in crises occurring in Critical Infrastructures due to malicious attacks (e.g. terrorist attacks).	Low	Minor	eVACUATE imposes a secure communication overlay network covering the communication and IT needs of the system. Therefore, potential infiltration to the system will be blocked, thus increasing the security level of the foreseen first responder operations.	TIM, ICCS
WP6, WP7, WP8, WP9	Interdependencies: Difficulty to establish justified probabilities for some of the interdependency failures. Some of the problem is that the events can be rare and others are that they are complex.	Low	Minor	eVACUATE will derive risks for typical events in different infrastructure sectors by collecting and analyzing records of previous failures using statistical tools.	INDRA, TEK, ICCS, TEL, TIM
WP6, WP11	Variety of Telecommunication media: Variety of Telecommunication standards and media which are not compliant among different countries	Low	Minor	eVACUATE will identify an open extensible architecture, capable of integrating differentiations through interworking adaptations and accommodating emerging standards and media.	ICCS, TEL, TIM, INDRA

WP	Risk	Probability of Risk (Low-Medium-High)	Severity of Impact (Minor-Medium-Severe)	Mitigation strategies	Responsible
WP8	Data fusion and mediation system: Low number of ground-truth samples for verification, high false detection and recognition rates. Harmonization and virtualization of the physical sensors data using standard frameworks	Low	Severe	Proper data organization and selection of standard and portable formats for sensory data presentation to DFMS shall be accurately defined. Data Structures and Data Flows of sensors shall be provided by sensor providers.	VITRO, INDRA, CDI
WP8	Data fusion and mediation system: High false recognition rate in case of inappropriate vocabulary and ground-truth definition	Low	Severe	Detection rate will be continuously verified /estimated during the project and a strategy plan will be built for data-base building and validation	VITRO, INDRA, CDI, IT INNOV
WP5	The visualisation system /user is overloaded with infomation	Low	Medium	A filtering of information technology will minimize this risk. In addition, iterative demonstrations of the visualization results to end users will tailor the level of information to their needs. Moreover, focus will be made on optimization to enable an interactive visualization of the evacuation strategies.	DXT
Integration Risks					
WP9	Integration: Integrated system does not perform as expected	Low	Severe	Perform component tests and characterization before integration to minimize the risk and quickly identify possible problems	INDRA, All
WP9	Due to system complexity, the integration reduces overall system performance	Medium	Medium	Predict and continuously measure module and system performance throughout design, development and integration activities.	INDRA, All

WP	Risk	Probability of Risk (Low-Medium-High)	Severity of Impact (Minor-Medium-Severe)	Mitigation strategies	Responsible
WP2, WP6-WP9	Objectives/requirements of any/one module are not met	Medium	Medium	Early-stage: redesign module functionality and development strategy (early communication with end-users) Later-stage: search in the market or search in the research community similar functionality to extend and integrate (with different expectations)	All
WP8, WP6-WP9	Data fusion complexity of integrated platform	Low	Medium	Review and extend the specifications between the different system elements to achieve smooth data flow among them.	All
Training/Demonstration Risks					
WP2, WP10	Information on status quo of current evacuation plans and end-users needs cannot be found	Medium	Medium	Start research for information in an early stage and enquire information and contacts from all eVACUATE partners.	HKV
Other					
WP11	The standardization entities center of EVACUATE themes, do not show interest, in accordance with their rules of procedures, to develop the required standardization work item	Medium	Medium	Instead of pursuing formal standardization work item, the project will promote the originally targeted WORKSHOP AGREEMENT, where interested stakeholders would agree on a “de facto” recommended standard or guidelines for implementation of security processes and interfaces.	INDRA

Annex A References & Relevant Readings

- [1] Project reporting in FP7
- [2] Project Management Institute (PMI) – www.pmi.org (date of last visit: 28/06/2010)
- [3] Daniel Galin, Software Quality Assurance, from theory to implementation, Pearson Addison Wesley, 2004.
- [4] Ray C. Williams, George J. Pandelios, Sandra G. Behrens, Software Risk Evaluation (SRE) Method Description (Version 2.0), Carnegie Mellon University (SEI), 1999

Annex B List of Acronyms

Acronym	Meaning
CA	Consortium Agreement
CI	Critical Infrastructures
DoW	Description of Work
EC	European Commission
KPIs	Key Performance Indicators
PM	Project Manager
PMI	Project Management Institute
SN	Serial Number
TC	Test Case
TS	Test Scenario
WP	Work Package
SAES	Situation Awareness Evacuation System
AER	Active Evacuation Route
SRE	Software Risk Evaluation
SEI	Software Engineering Institute of Carnegie Mellon University
TR	Technical Reviewed
TCM	Technical Committee Members
ToC	Table of Contents
QR	Quality Reviewed
OSGi	Open Service Gateway initiative
FMCW	Frequency-Modulated Continuous-Wave
UWB	Ultra WideBand

Annex C Template: Deliverables Document

The eVACUATE deliverables template document starts from the next page.



FP7-313161

A holistic approach towards the development of the first responder of the future

TITLE OF DELIVERABLE

Deliverable Identifier: D.X.Y
Delivery Date: MMM DD, YYYY
Classification: Restricted
Editor(s): Editor's(') name(s) (Company)
Document version: 1.0 - 2013

Contract Start Date: April 1st, 2013
Duration: 48 months
Project coordinator: EXODUS S.A. (Greece)
Partners: EXO (GR), IT INNOVATION (UK), ICCS (GR), HKV (NL), TEL (GR), TEK (ES), AIA (GR), VITRO (IT), CDI (UK), INDRA (ES), KUL (BE), DXT (FR), POLITICO (IT), STX-FR (FR), TUD (DE), TUC (DE), ASRS (ES), METB (ES), TIM (IT)

Project co-funded by the
European Commission under the
7th Framework Programme



Document Control Page

Title	Title of Deliverable	
Editors	Name	Partner
Contributors	Name	Partner
Peer Reviewers	Name	Partner
Format	Text - Ms Word	
Language	en-UK	
Work-Package	WPX	
Deliverable number	D.X.Y	
Due Date of Delivery	DD/MM/YYYY	
Actual Date of Delivery	DD/MM/YYYY	
Dissemination Level	One of the following: Public Restricted to other programme participants (including the Commission Services) Restricted to a group specified by the consortium (including the Commission Services) Confidential, only for members of the consortium (including the Commission Services)	
Rights	eVACUATE Consortium	
Audience	<input type="checkbox"/> public <input checked="" type="checkbox"/> restricted <input type="checkbox"/> internal	
Date	DD/MM/YYYY	
Revision	none	
Version	0.1	
Edited by	XXX	
Status	<input checked="" type="checkbox"/> draft <input type="checkbox"/> Consortium reviewed <input type="checkbox"/> WP leader accepted <input type="checkbox"/> Project coordinator accepted	

Revision History

Version	Date	Description and comments	Edited by
0.1	DD/MM/YYYY	XXX	
0.2			
0.3			
0.4			
0.5			
0.6			
0.7			
1.0			

Table of Contents**Table of Figures**

1. Executive summary

This document deals with

2. Introduction

2.1 Scope



Figure 2.1.X: EVACUATE logo

3. New Chapter

3.1 New section

Normal Text

3.2 New section

Normal Text

3.2.1 New subsection

Normal Text

Table 3.2.X: Table template

Column X	Column Y
Row X,X	Row X,Y
Row Y,X	Row Y,Y
etc.	

Annex A – List of Acronyms

Acronym	Meaning

Annex D Template: eVACUATE Review Protocol

eVACUATE Review Protocol





Deliverable/Document Name		Version	
Review Start Date		Review End Date	
Authors/Contributors		Assigned Internal Reviewers	

REVIEW COMMENTS

Comment Number	Page Section	COMMENT	RESPONSE	Reviewer Name/ Company

Annex E Template: eVACUATE Meeting Agenda

Agenda		
TITLE OF THE MEETING (E.G. EVACUATE PLENARY MEETING)		
PROJECT:	<p>eVACUATE: A holistic, scenario-independent, situation-awareness and guidance system for sustaining the Active Evacuation Route for large crowds</p> <div> eVACUATE</div>	
CONTRACT:	Grant Agreement №: 313161	
	Start: 01.04.2013 End: 31.03.2017	
THEMATIC PRIORITY:	FP7 - SEC-2012.4.2.2 – Situation awareness guidance and evacuation systems for large crowds, including crowds' unpredictable behaviour	
CONSORTIUM:	<div>⇒ EXODUS S.A. (EXO)</div> <div>⇒ University of Southampton IT Innovation Centre (ITINNOV)</div> <div>⇒ Institute of Communications and Computer Systems (ICCS)</div> <div>⇒ HKV (HKV)</div> <div>⇒ Telesto Technologies (TEL)</div> <div>⇒ TEKNIKER-Ik4 (TEK)</div> <div>⇒ Athens International Airport (AIA)</div> <div>⇒ Vitrociset (VITRO)</div> <div>⇒ Crowd Dynamics International (CDI)</div> <div>⇒ INDRA (INDRA)</div> <div>⇒ KU-Leuven (KUL)</div> <div>⇒ DIGINEXT (DXT)</div> <div>⇒ Politecnico Di Torino- Dipartimento di Mathematico (POLITO)</div> <div>⇒ STX France S.A (STX-FR)</div> <div>⇒ Technische Universität Dresden (TUD)</div> <div>⇒ Technische Universität Chemnitz (TUC)</div> <div>⇒ Real Sociedad De Futbol S.A.D (ASRS)</div> <div>⇒ Metro Bilbao S.A (METB)</div> <div>⇒ Telecom Italia (TIM)</div>	
MEETING:	<p>Venue: Athens, Greece, Central Library of NTUA, Ground Floor</p>	<p>Date: April 22nd -24th 2013</p>

Agenda

Day 1 (e.g. Monday, April 22nd):

The aim of the first day is to ...

Start time – end time (e.g. 14:00 – 14:25)	Arrival & Coffee	
e.g. 14:25– 14:30	Welcome and Greetings	Host
e.g. 14:30– 15:00	Name of Session 1 (time e.g. 30') A short description of the objectives and the contents of the presentation Presenter(s)	Responsible Organisation (short Name)
e.g. 15:00 – 16:00	Name of Session 2 (time e.g. 30') A short description of the objectives and the contents of the presentation Presenter(s)	Responsible Organisation (short Name)
e.g. 16:00 – 16:15	Coffee Break	
e.g. 16:15 – 17:00	Name of Session 3 (time e.g. 30') A short description of the objectives and the contents of the presentation Presenter(s)	Responsible Organisation (short Name)
	...	
	...	
	...	
e.g. 18:30	End of day 1	

Day 2 (e.g. Tuesday, April 23rd):

The aim of the second day is to ...

<i>Start time – end time (e.g. 09:00 – 09:25)</i>	<i>Arrival & Coffee</i>	
e.g. 09:30–10:00	Name of Session 1 (time e.g. 30') A short description of the objectives and the contents of the presentation Presenter(s)	Responsible Organisation (short Name)
e.g. 10:00 – 11:00	Name of Session 2 (time e.g. 30') A short description of the objectives and the contents of the presentation Presenter(s)	Responsible Organisation (short Name)
e.g. 11:00 – 11:15	<i>Coffee Break</i>	
e.g. 11:15 – 12:00	Name of Session 3 (time e.g. 30') A short description of the objectives and the contents of the presentation Presenter(s)	Responsible Organisation (short Name)
	...	
	...	
	...	
e.g. 17:30	End of day 2 END OF MEETING	

Participants list

Partner, Participant name		
EXODUS	e.g. Dimitris Petrantonakis	Dimitris Vassiliadis
	Christos Katsigiannis	
IT INNOV		
ICCS		
HKV		
TEL		
TEK		
AIA		
VITRO		
CDI		
INDRA		
KUL		
DXT		
POLITO		
STX-FR		
TUD		
TUC		
ASRS		
METB		
TIM		

Annex F Template: EVACUATE Meeting Minutes

DATE	
PROJECT	eVACUATE
PLACE/VENUE	
EDITOR	

SUBJECT:	
-----------------	--

[illegible]

TOPICS DISCUSSED	
<u>DAY 1</u>	
<u>Title of Session (responsible organisation and presenter)</u>	

Issues discussed:

- ...

Conclusions:

- ...

DAY 2

Title of Session (responsible organisation and presenter)

Issues discussed:

- ...

Conclusions:

- ...

Action Points					
A/A	WP	DATE	DESCRIPTION	PARTNER IN CHARGE	DEADLINE

Open Issues					
A/A	WP	DATE	DESCRIPTION	PARTNER IN CHARGE	DEADLINE

Annex G Template: eVACUATE Project Presentations

