

The 1st workshop of the eVACUATE Project was held in Athens on November 14th 2014, hosted by Athens International Airport. During the meeting the eVACUATE consortium presented their corresponding work while demonstrating their first prototype to Stakeholders across different domains.



eVACUATE

1st

Workshop

Minutes of Meeting

eVACUATE Consortium

General Information about the Meeting

The 1st workshop of the eVACUATE Project was held in Athens on November 14th 2014. The meeting lasted one day and was hosted in Athens International Airport headquarters.

The eVACUATE workshop meeting proved to be very productive for the project. During the meeting the eVACUATE consortium presented their corresponding work while demonstrating their first prototype to the audience.

In particular, the Coordinator of the eVACUATE project, after welcoming all attendees, started with the presentation of the eVACUATE concept, objectives, technologies and vision, according to the meeting agenda (Annex A). The WP2 Leader continued with a presentation of the most important User and System requirements that were defined in the early beginning of the project and of the procedures that were followed in view of collecting all necessary information. In addition to the aforementioned presentation of the diverse 4 pilots was also performed by the WP2 Leader informing the audience about the specific requirements and recommendations of each end-user and how eVACUATE should address them in order to be operative in their premises.

After the end of User/System requirements and scenarios presentation, the workshop continued with the demonstration of the eVACUATE prototype. All Attendees had the chance to see in real the following systems:

1. Smart Space Demo

Use case description: Based on reading from Smart Space (light sensors and people count, rules are enforced, activating active exit signs and ventilation fans.

Demonstration functionality

- WP7 – Smart Spaces: Sensors for light, RFID, other sensor

2. Chipless RFID Demo

Use case description: Chipless RFID system provides information about the type and number of persons crossing through a gate where the system is implemented

Demonstration functionality

- WP7 – Smart Spaces: Chipless RFID as part of the Smart Space

3. Smart Space – Digital Signage

Use case description: The LCD Display shows actively an exit direction to the users.

Demonstration Functionality

- WP7-Smart Space: Digital Signage as part of the Smart Space

4. SOFIA Demo

Use case description: A cloud-based SOFIA platform (laptop enables the dedicated network for the demo)

Demonstration Functionality

- WP9 – Integration

5. COP with embedded simulations for predicting future congestions Demo

Use case description: The common Operational Picture displays current situation of the Metro Station and displays prediction of near Future Situation (possible development of cloud densities and movements within one minute)

Demonstration Functionality

- WP5 – 3D Interactive Common Operational Picture & Simulation
- WP7 – Smart Space
- WP4 – Advanced Strategic spatial evacuation

6. Smartphone Application Demo

Use case description: User is shown important location related safety information on his (mobile) smartphone

Demonstration Functionality

- WP5 – 3D Interactive Common Operational Picture updates current status to the user
- WP7 – Smart Space: Smartphones as a sensor platform

After the end of the demonstration session, a lunch break followed according to the workshop agenda and all people gathered after an hour to continue with the presentation of End-Users experiences based on their active involvement in eVACUATE project as members of the consortium. All four end-users presented themselves and shared with the audience their vision on how eVACUATE will facilitate their actual needs in the future. More details in the following sections.

Last but not least, an open discussion was initiated between the consortium and the relevant stakeholders where everyone had the chance to express his impression about the current status of the project and his opinion on how the system will be more appealing/advanced in the future, while increasing its chances to enter the market in a smoothly way.

The main outcomes of this open discussion are summarized below:

- Crowd behaviour should be fully justified before applied in eVACUATE system in order to gain the trust of End-Users. **High accuracy of the developed models** should be achieved and performed by the system. In general, it was suggested that all assumptions that are made within the simulations should be substantiated and explicitly justified to persuade potential customers of the validity of the predictions.
- **Colors in the Simulation tool** (red, yellow, green) indicating the density levels within confined spaces **were accepted** in a positive way by the end-users since as they said the specific colors refer to traffic light colors and can be therefore understandable from all persons (decision Makers) operating eVACUATE. No alternative display options were proposed, however DXT mentioned that even in that case, they will consider alternatives as an optional feature of our system.
- End users were **focused on eVACUATE scenarios** and in particular their interest was concentrated on how (and if supported) **our system provides predictions of an evolved incident**. WP4 Leader answered with more details on the simulations developed within WP4 for these specific reasons.
- **Different crowd behaviors habits**, derived from different cultures, **should be taken into account from our system**, according to end-users. E.g. What if someone return back to the incident location to help another civilian that is in danger? Is it considered as an abnormal behaviour or a common pattern for the specific location and the specific group of people? WP3 Leader commented that this is an issue that should and will be taken into account during development and characterized the specific question as a very interesting one.
- **How the system responds** when dealing with **special situations**, like **CBRN cases** where special procedures should be followed (decontamination of people evacuating a location where an incident happened). All agreed that even eVACUATE stops at that point that evacuation is completed (visitors/passengers reached a safe location); it would be interested to create synergies with other FP7 / H2020 project that deal with CBRN issues and create an even more advanced system of systems that will join complementary systems. It was also mentioned by the consortium that in order to address special cases like CBRN the Decision Makers will be able to enrich our system with the manual addition of other parameters (relevant to the procedures followed in CBRN cases).

- Following this discussion one of the stakeholders mentioned the inherent question of defining an evacuation as 'finished'. Will the **system be equipped for communicating this final status** and support decision makers, crew and crowd in steps to be taken to finish the evacuation?
- End-users also highlighted the **importance of security**. In particular they asked about the mechanisms eVACUATE is having to confront cyber-attacks, eavesdropping, etc. WP6 Leader gave a complete answer on how eVACUATE is dealing with security aspects.
- **Dynamic monitoring** instead of the current static monitoring has been recognized by the participants as an innovative aspect of the eVACUATE development. This might prodigious improve the quality of decision making for large buildings anywhere, although it might need a different mentality at the decision making unit. At the other hand crowd and crew will be better equipped by eVACUATE for **self-handling** because of specific communication on evacuation issues.
- For the exploitation part, most of the participants were keen to know **how the system will be exploited in a commercial way** and if there is any **regulation organization** that will help towards the creation of those baselines which will oblige end-users to adopt systems like eVACUATE as a prerequisite in their infrastructures. The eVACUATE consortium agreed to move towards that direction by contacting regulation authorities from different domains and invite them to participate in our stakeholders community.
- **Chipless RFIDs** were also part of the discussion performed during the workshop. Especially end-users were interested to know **how we ensure all legal and ethical issues** deriving from the exploitation of that technology. Explanations were given with respect to the procedures that should be followed when dealing with private data. E.g. Chipless RFIDs will not store any personal data since all information included will be anonymous indicating only the position of the specific person and not his/her ID.
- It was expressed from the stakeholders the need of creating a **system** that will be **modular** and **cost efficient** based on their actual needs. The motivation for spending money on a system like this should be evident for end users. In some cases may not all technologies be required (like Museums where people are calm and feel safe and maybe a system like eVACUATE would not be fully operational and important in their day to day activities) and therefore the system should be able to operate with only some individual components installed and not the whole system itself. This will definitely lead to a reduction of cost.

- End users highlighted that when eVACUATE would be put into the regulation itself (making it mandatory), it changes the system from 'nice to have' to 'need to have'.
- Last but not least they recommended seeing in the future a scenario implemented following **two different cases. One with eVACUATE installed and one without eVACUATE operating in order to gain a clear picture of the valuable benefits** eVACUATE is bringing on table as well as the overall improvements obtained through out evacuate. A suggestion could be to analyze a real incident and try to perform some simulations comparing the outcome of the event with and without eVACUATE system onboard. This has already been intended and planned within the eVACUATE project during the life exercises and **demonstration at end user venues in 2016/2017**.
- One of the participants wanted to know how much effort has already been spent and will be spent to let others share in the knowledge and project developments. **Dissemination is one of the main project goals**. Interested stakeholders can find information on the website (www.evacuate.eu) and in our existing publications. Stakeholders will have the possibility to participate also in the 2nd eVACUATE workshop that will be organized within the next two years (Date, location and agenda will be announced via website and social media), while having the chance to become aware of our even more advanced eVACUATE platform and its subsystems. Training in the new technologies that are under development within eVACUATE in order Stakeholders to become more familiar with them will be also one of the main topics of this workshop.

The consortium agreed, that all the aforementioned comments, recommendations and remarks will be assessed and taken into account where possible during the rest of the development phase within eVACUATE.

In addition a questionnaire was prepared and distributed to the attendees while will be distributed as well to those not attended the meeting but are members of our stakeholder community, requesting from all stakeholders to answer a few questions that will be used as feedback for strengthening our system functionalities while increasing its potentials to be exploited from a wide range of "customers" in the future. (check Annex B)

End-Users presentations and sharing of their experiences.

Athens International Airport



AIA presented the current evacuation processes that are followed in their premises. The main outcomes from their presentation were the following:

1. Evacuation strategies are being revised after almost any large and relevant threat or accident along the world.
2. **Most of the accidents during evacuation were human errors** that were **caused due to lack of information** from the incident field or wrong instructions given to evacuees.
3. Most of the threats are located in the public domain to increase casualties.

AIA also expressed their willingness to adopt a system that will provide **enhanced accuracy in predictions while ensuring business continuity.**

Currently regulations depict on what kind of equipment is mandatory for security purposes within an Airport.

STX-FR



The main issues that STX is encountering are the following:

- Currently **no centralized DSS system** exists in their ships.
- **SOLAS** who creates regulations is updated only after an incident happens.

- The two recent incidents (Costa Concordia and the one in South Korea) were brought as examples, highlighting that in both cases the main cause of mass casualties was due to **wrong human decisions**.

It was stated that **improvement of safety and security on board ship** is a **continuous process, leading to important evolution of on board systems and procedures**. However there are currently a few limitations like:

- Communication between crew and passengers (high noise level, multi-language issue)
- Static guidance route to passenger to the muster stations.
- No indoor location.

Potential Improvements:

- Better consideration for procedures in evacuation models: to enhance mustering and evacuation process effectiveness in emergency cases
- Communication between crew members, towards passengers: language, noise level
- Human behavior in emergency situations (to avoid passenger misunderstanding: situation, messages, where to go, ...)
- Passengers tracking
- Dynamical definition of best evacuation route (to prevent using dangerous areas)
- Decision Support Systems for passenger's evacuation on ships including the integration of new systems within the already installed ones.

In the frame of Ship Safety improvement STX France has identified three key topics of development:

- **A dedicated interface providing a holistic awareness of the situation**
- **Passengers and crew indoor location**
- **Enhanced communication system improving safety information process towards passengers during crisis situation**

Metro Bilbao

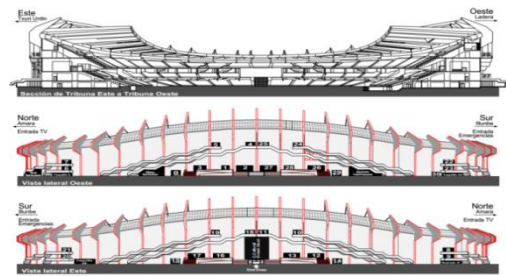
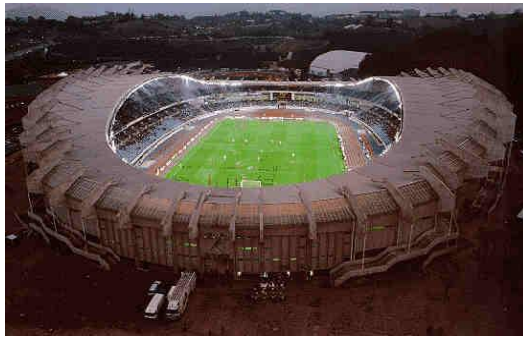


In METB the main issues that were mainly pinpointed were the **lack of a centralized DSS system as well as the absence of Smart Spaces** (sensors, actuators) that will guide people outside Metro platforms in a ease and efficient way.

Apart from the aforementioned also some expected outcomes from eVACUATE:

- ☐ **Real time person number measurement in specific spaces capability**
- ☐ **Better information inputs, which will lead to better decision making.**
- ☐ **Improve the response time in decision making processes**
- ☐ **Automatization of tasks which are actually only taken manually and under specific criteria making use of the expertise of the decision maker.**
- ☐ **Monitoring and visualizing the scenario in real time, dynamically defining the optimal evacuation route**
- ☐ **Implementation of dynamic signalization elements for an evacuation**

Real Sociedad



Previous Experience: Playing in the First Division implies complying with a very sharp security regulation, including a very controlled access to the stadium, surveillance systems and the deployment and coordination of different first responders (medicals, police and private security) in the stadium facilities during the match in order to take care of all the audience and service staff.

ASRS stated that they had never an incident before requiring evacuation of the stadium. They also stated that they have never done any simulation of potential incident.

Under these frames they highlighted that the lack of training and experience in a potential incident may be the “cause” of a future incident with potential casualties.

So their expected Outcomes from eVACUATE:

- Before anything else, **knowing our weaknesses and learn from the experts that make up the project team.**
- **Provide the OCU (Operational Control Unit) with the best tools for crisis management.**
- **Manage also the evacuation of staff in services at the stadium.**
- **Being a national reference in "Crisis Management".**
- **Ensure high levels of safety in mass gathering events like football matches and not only (e.g. concerts, etc.)**

ANNEX A: eVACUATE Workshop Meeting Agenda


Timeslot	Session Description	Speaker(s)	Organization
... – 10:00	<i>Arrival & Greetings</i>		
10:00 – 10:40	eVACUATE Project (Objectives and Vision) (Coordinator) (40 min)	Dimitris PETRANTONAKIS	EXO
10:40 – 11:20	User / System Requirements + eVACUATE scenarios (30 min) Q&A (10 min)	Hanneke VREUGDENHIL	HKV
11:20 – 12:00	Sharing End Users Experience (10 min per Speaker) <ul style="list-style-type: none"> Athens International Airport Metro Bilbao STX-France Cruise Ships Real Sociedad F.C 	Nikos PAPAGIANNOPOULOS Jose LANDETA Pierre BERSENEFF Vicente SERULLA	AIA METB STX-FR ASRS
12:00 – 12:10	<i>Coffee Break</i>		
12:10 – 13:00	eVACUATE Prototype Presentation and Future Implementation Strategy (40 min) Q&A (10 min)	Jorge RODRIGUEZ	INDRA
13:00 – 14:00	<i>Lunch Break</i>		
14:00 – 15:40	Open Discussion with Stakeholders <ul style="list-style-type: none"> - Stakeholders Opinion / Comments - Distribution of Questionnaires and fulfillment from Stakeholders - Collection of NEW requirements/ recommendations - New Synergies - Exploitation/ Dissemination Issues 	Moderator(s): Dimitris PETRANTONAKIS Hanneke VREUGDENHIL	ALL
15:40 – 16:00	Conclusions	Dimitris PETRANTONAKIS	EXO
16:00	<i>End of Workshop Meeting</i>		


ANNEX B: Stakeholders Questionnaire

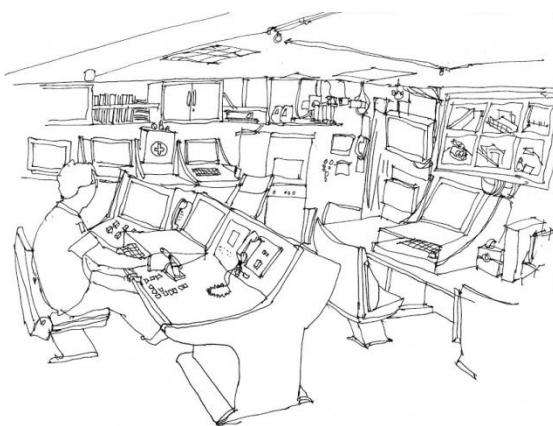
Stakeholders Questionnaire – eVACUATE Workshop 14 Nov. 2014

General	Please add your Credentials below...
Date	
Name	
Function	
E-mail	
Phone No.	
Institute	


eVACUATE Workshop


Function	
	
Detailed role description	
Responsibilities during calamity	
Years of field experience	
What is the crisis team composition?	
What is the crisis team's mandate?	
Who are the decision makers?	
To whom to report to? When& how many times?	
How many times do you have an evacuation exercise?	
What are the lessons learnt from previous crisis situations?	


Location	
	
Location	
What is the crowd density?	
What is crowd density on a busy day?	
What are the crowd characteristics?	
What threats are applicable to the location?	
At what locations can you expect crowd congestions?	
How many evacuation strategies do you prepare for? Can you describe them?	
What are the evacuation routes?	
What are the evacuation challenges?	

Control Room

Control room location	
Who has access to the control Room? And when?	
How many officers in normal situation?	
And how many during a crisis / evacuation?	
How many devices (screens, phones, etc.) does a workspace have? Is there a central video wall?	
What is missing?	


Information	
What kind of information do you receive?	
Where do you get the information from?	
Where does the data consists of? What specific items do you see?	
How up-to-date is your information?	
What is the accuracy of the information?	
What do you think of the level of data aggregation?	
What information would you like to add to the control room?	
Do you work with RFID, e.g. printed tags on tickets?	

Monitoring	
	
How do you monitor the crowd distribution in the location?	
Where do you look for? What does trigger your attention?	
Do you use models for crowd prediction? What is the prediction horizon? What is the accuracy/reliability?	
Are there automatic alert signals?	
When do you 'upscale' to 'crisis'?	
Do you use mobile command centers?	
When do you decide to evacuate people?	
Do you monitor social media?	

Crisis control	
	
What data is important to get a good Common Operational Picture (COP)?	
What information must be shared to get a good common operational picture for crowd evacuation?	
What information should be added to the COP?	
Do you use 3D-visualisation? What other visualization techniques do you use?	
Are the model predictions fed with real-data as the crisis unfolds?	
What is an early detection? And what is a late detection?	
How to handle in an early or late detection?	
How would a 3D-information help you to picture the overall situation? What other visualizations would help you?	
What measures can you possibly take? What resources are available?	

How much time do you need to deploy evacuation measures?	
How many safety officers can you use?	
How do you monitor the effect of the measures?	
Can measures be reverted if they have the wrong effect?	

EVACUATE Workshop

Communication	
How do you communicate with team members?	
How do you communicate with outside first responders?	
How do you communicate with the public?	
Do you use social media? And why/why not?	
How do you communicate your decisions? And to whom?	
Do you communicate with actuating elements like tickers, information screens, and emergency signs? Are they mobile?	