

DigLogs

Pilot Implementation

Progress Report #2

5.2.2 Mobile Safety/Security Pilot

Responsible partner: UNITS			
Involved partners: All			
Version	Status	Date	Author
0	FINAL	31/05/2021	UNITS
Notes:			

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1. Pilot Action Progress Status

1.1 Project functional requirements

Monitoring of the pilot project execution will be performed using the following milestones, in sequence (checkpoints – check off milestones):

1. Compiled draft of the project work plan – approved by PP4, - **COMPLETED**
2. Completed project work plan – validated by WP5 package leader (PP5) and the whole partnership, - **COMPLETED**
3. Written draft of the technical-functional specification, - **COMPLETED**
4. Completed rest of the public procurement (tendering) documentation, - **COMPLETED**
5. Issued requests/invitations for quotations, - **COMPLETED**
6. Received commercial offers, - **COMPLETED**
7. Evaluation of offers completed and developer selection, CHECK OFF MILESTONE 1 - **COMPLETED**
8. Development of the APP and backend, - **COMPLETED**
9. Installation and configuration of the system in the test environment, - **COMPLETED**
10. Trial and system acceptance, CHECK OFF MILESTONE 2 - **COMPLETED**
11. Full system functional, - **COMPLETED**
12. Experimental campaign carried out with sample population, CHECK OFF MILESTONE 3- **COMPLETED**
13. Completion of data analysis to assess the findings of the experimental campaign - **ONGOING.**

1.2 Updated Project Timeline

Figure 1 provides an overview of the ongoing and expected timeline of the pilot project.

	2020						2021											
	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
T1 - Pilot planning & control																		
T1.1 - Evacuation simulations																		
T1.2 - Tender technical specification																		
T1.3 - Tender (developer selection)																		
T1.4 - System detailed design																		
T1.5 - Experimental test design																		
T2 - System Development																		
T2.1 - APP development																		
T2.2 - Backend development																		
T2.3 - Beacon net development																		
T3 - Configuration and testing																		
T3.1 - Installation in test environment																		
T3.2 - Optimisation beacon location																		
T3.3 - Sistem trial run																		
T4 - Experimental testing																		
T4.1 - Population selection																		
T4.2 - Instructions to participants																		
T4.3 - Experiments with persons																		
T4.4 - Data analysis																		
T4.5 - Dissemination																		
Ship available at shipyard																		

MS1 | MS2 - MS3

Figure 1. Pilot project Gantt chart

The development of the system has been completed according to the detailed design by the selected developer.

The hull maintenance of the selected test ship in Trieste was rescheduled to the beginning of April. Hence, the trials of the system have been moved accordingly. The first test onboard has been carried out on April 1st highlighting some anomalies due to the steel-made environment (Bluetooth signal reflection). Moreover, the wifi network of the ship was not operational, requiring the installation of two temporary networks to enable the communication between beacons, smartbands and backend on each deck interested by the experimental campaign. The final system set-up and testing phase have been successfully completed on 8th April.

The experimental campaign was affected by the CoVid-19 pandemic, which required special effort to recruit the test population and carry out the experiments onboard. A proper protocol

to reduce the infection risks have been developed to obtain the authorization for the trial by the shipowner, shipyard and port authority. The protocol required to carry out a molecular nasopharyngeal swab for each person in the 48 hours before ship boarding. Hence, it was necessary to carry out the trials during a single day with a single sample population.

The sample population was composed of 37 persons and was recruited through an online form to collect all the required information. Widespread invitations have been sent to all main regional stakeholders (moving between Italian regions was still forbidden by governmental decree at the beginning of April). Most of the sample population was composed of university students since the pandemic situation dramatically reduced the willingness to participate from other stakeholders and make it impossible to involve private citizens.

The experimental area has been slightly modified to embrace a wider area compared to the one initially identified. Figure 2 shows the updated area equipped with beacons to carry out the experimental campaign.



Figure 2 –The area equipped with beacons for the experimental campaign (in red)

The trials have been carried out on 9th April. Multiple evacuation runs have been carried out from deck 6 to the assembly station at deck 5. Seven different scenarios were tested: one having all

the three staircases available, the others having one or two staircases blocked in order to test the guidance provided by smartbands. Moreover, the scenarios were tested with and without the active smartband guidance to evaluate the evacuation time reduction due to the developed system. Figure 3 shows all the different signals given by the smartband as presented during the warm up presentation to the sample population. Figures 4-6 shows the equipment and the persons during the onboard trials. The data collected during the experimental campaign are encouraging. Data analysis is still ongoing.



Figure 3 - Signals given by the smartband



Figure 4 - Smartbands in charge



Figure 4 – Setting up the backend at bridge 6



Figure 4 – All the persons involved during the trials

All the pilot project activities are in line with the initial planning.

All the pilot project tasks are considered under control and no high-risk levels are foreseen.