

NET4mPLASTIC PROJECT

WP5 – Act. 5.4 Pilot implementation,
business simulation and assessment

D 5.4.2

Training assessment

June, 2022 - Version 1.0

Project Acronym	NET4mPLASTIC
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Acronyms / Abbreviations

ACRONYM	DEFINITION
EWS	Early Warning System
MP	Microplastic
OBU	On board Unit
PP	Project Plan
PT	Project team
TC	Technical task coordinator
TGS-ML	Technical Subgroup on Marine litter, European Union expert group On marine litter
TM	Task Manager
UML	Unified Modelling Language
WP	Workpackage

1 Introduction

1.1 Background of the project

The main goal of the NET4mPLASTIC project is to achieve an efficient monitoring system for plastic and MP distribution along the Croatian and Italian coastal and marine areas in order to improve the environmental coastal and marine sea quality conditions.

According to doc R1, the WP5 deals with the design implementation of the EWS - Early Warning System including:

- a control centre, based on system hardware and network (Prosoft), and a EWS application (Hydra Solutions) integrated with the transport model and external systems (such as the oceanographic model - (Marche Region);
- Integrated Marine Drone, for collection of MP - microplastic, and geolocalized water indicators on the route (Hydra Solutions);
- Integrated Marine OBU, a unit to be installed on board of ships for improved MP collection with geolocalized water indicators on the route (Hydra Solutions).

The design shall be carried out with the modern system engineering approach based on UML - Unified Modelling Language (Hydra Solutions). UNITS and RERA SD will provide data for the first set up of the platform related to MP. Based on this WP, the transport model will be developed in WP4. The development of the EWS platform integrated with the transport model will be done in WP5.

The activities planned for WP5 are the following:

- development of the EWS - Early Warning System data center platform and integration with the transport model (WP4)
- development of the UAV/marine drone for real-time data acquisition
- testing and calibration
- business simulation for testing the solution with real users –
- final assessment of the solution, including a CBA—cost benefit analysis and the preparation of the business plan.

The main expected output will be:

- EWS integrated platform, implemented and tested
- Training for the required personnel and users - Assessment of the platform.

The required main software modules of the EWS platform will be:

- MP Transport model, providing data with distribution and concentration,
- MP WebGIS platform, for: a) Display MP data (historical, actual forecast, 24-72h forecast) b) Early warning provision, based on the transport model c) Data entry, recording & replay
- MP DB, the DB for collecting data
- A mobile APP, for starting/closing the field activities and for data reporting
- Firmware for marine remote units - Integration with external system, for meteo/other data

The coordinator will be Hydra Solutions. The EWS SW platform will be developed by Hydra Solutions, with the support of Marche Region for the transport model, and Prosoft for localization, the ICT

implementation, the integrated testing, training and support for maintenance activities. UNITS will coordinate the assessment of the platform. The other partners involved will give contribution for data entry, as target user, and for preparation of the required documentation. The user target group will be based on the main project partners, institution, regions and councils. They will be involved in the design stage for collecting the main needs, for testing and user training of the solution. The target group will be required to use the system during the business simulation, and provide feedback.

The expected reports within WP5 are the following:

- D 5.1.4 –Hardware and Network Integration Report (Report): this deliverable will provide a report with details on integration of the network and other hardware required for the system;
- D 5.1.5 –Test procedures and reporting (Report): this deliverable will provide the procedures for testing the data centre and the integrated solution in the test bed environment, and the reporting of the tests done to assure the quality of the solution provided;
- D 5.1.6 –Hardware & Network Maintenance Manual (Document); this deliverable will provide the manual for the maintenance of the hardware and the network of the system;
- D 5.1.7 –Software User and Maintenance Manual (Document); this deliverable will provide the manual for the maintenance of the software and the User manual for the operators
- D 5.2.4 – Marine OBU / Drone Test Procedure and Report (Document): this deliverable will provide the procedures for testing the drones and the OBU, and the reporting of the tests done to assure the quality of the solution provided;
- D 5.2.5 –Marine OBU / Drone Maintenance Manual (Document); this deliverable will provide the manual for the maintenance of the Drone and OBU;
- D 5.2.6 – Marine OBU / Drone User Manual (Document); this deliverable will provide the User manual for the operators;
- D 5.3.1 – Data Centre Hardware and Network Facility implemented (Hardware, report), in this deliverable is relevant to the implementation of the data centre for the integrated solution, hardware and the network facility, and the preparation of the AS BUILT document describing the data centre facility;
- D 5.3.2 – Remote Units and Data Centre Communication Test Procedure and Report (Document); this deliverable will provide the procedures for testing the communication integration between remote units and the data centre, and the relevant reporting of the tests done to assure the quality of the solution provided;
- D 5.3.3 – Data Centre Test Procedure and Report (Document): this deliverable will provide the procedures for testing the features of the solution provide in the data centre, and the relevant reporting of the tests done to assure the quality of the solution provided, that will be done in cooperation with the main stakeholders;
- D 5.3.4 – Integrated System Final Test Procedure and Report (Document): this deliverable will provide the procedures for the integrated test cases testing the integrated solution, and the relevant reporting of the tests done to assure the quality of the solution provided, that will be done in cooperation with the main stakeholders.
- D 5.4.1 – Training documentation (document): this deliverable is relevant to the implementation of the required documentation for performing training to the personnel involved in the business simulation (as defined in the WP3.3 and the design of the solution);

- D 5.4.2 – Training assessment (report): this deliverable is relevant to the implementation of the training to be done for the personnel involved in the business simulation, with a reporting on evaluation of the training;
- D 5.4.3 – Integrated Marine Remote unit (Drone/OBU): this deliverable is relevant to the final description of the Integrated Marine Remote unit (Drone/OBU);
- D 5.4.4 – Questionnaire for platform assessment (report) this deliverable is relevant to the preparation of a questionnaire for evaluation of the platform from the user point of view involved in the business simulation;
- D 5.4.5 – Cost Benefits Analysis – CBA of the platform (Document); this deliverable will provide a final document with lessons learnt during the real use of the platform, an evaluation of the benefits of the platform, and costs for full exploitation of the solution, including the future recommendations on potential improvement, and including a business plan for a full implementation of the platform.

1.2 Purpose of the report

This document describe the **deliverable D.5.4.2 – Training assessment**.

This deliverable is within the activity 5.4 of the Net4mPlastic project - Pilot implementation, business simulation and assessment, relevant to the implementation of the training to be done for the personnel involved in the business simulation, with a reporting on evaluation of the training.

The purpose of this document is summarized as follows:

- To report the list of participant of the EWS training
- To provide the evaluation of the training
- To enclose the reporting by the participants.

The main tasks planned in the activity 5.4 of the Net4mPlastic project are the following:

- implementation of the solution in the pilot sites. A user training will be performed for each area. A total n. of 2 Drones and 2 OBU has been planned for the field activities (UNITS)
- start up a period of min 4 months of BS
- Business Simulation, where real users will be involved in the process using the system, in cooperation with the main stakeholders, performing the required field activities and reacting in case Early Warning will be provided by the platform (UNITS)
- an assessment will be performed to provide a CBA – Cost / Benefits Analysis of the platform, providing future recommendation on potential improvement, and including a business plan for a full implementation of the platform (UNITS).

The coordinator of this activity will be UNITS, in cooperation with UNIST-FGAG, UNIFE, RERA, HYDRA, PROSOFT, MARCHE, and other institutional users that will be selected.

1.3 Reference documentation

No	Title	Rif/Report N.	Published by
[R1]	APPLICATION FORM - NET4mPLASTIC Project - New Technologies for macro and Microplastic Detection and Analysis in the Adriatic Basin 2014 - 2020 Interreg V-A Italy - Croatia CBC Programme Call for proposal 2017 Standard - NET4mPLASTIC Priority Axis:Environment and cultural heritage	Application ID: 10046722, dated 30/06/2017	Lead applicant: UNIVERSITY OF FERRARA
[R2]	D 5.1.4 –Hardware and Network Integration Report		ACT5.1 – Net4Mplastic
[R3]	D 5.1.5 –Test procedures and reporting (Report)		ACT5.1 – Net4Mplastic
[R4]	D 5.1.6 –Hardware & Network Maintenance Manual		ACT5.1 – Net4Mplastic
[R5]	D 5.1.7 –Software User and Maintenance Manual		ACT5.1 – Net4Mplastic
[R6]	D 5.2.4 – Marine OBU / Drone Test Procedure and Report		ACT5.2 – Net4Mplastic
[R7]	D 5.2.5 –Marine OBU / Drone Maintenance Manual		ACT5.2 – Net4Mplastic
[R8]	D 5.2.6 – Marine OBU / Drone User Manual		ACT5.2 – Net4Mplastic
[R9]	D 3.3.1 – EWS Requirements definitions based on the stakeholders and users’ needs, through questionnaires and specific meeting		ACT3.3 – Net4Mplastic
[R10]	D 3.3.2 – EWS Hardware Architecture and network design (central Data Centre Hardware Architecture Client/Server, Data network architecture and related communication segments)		ACT3.3 – Net4Mplastic
[R11]	D 3.3.3 – EWS Software Architecture design (data modelling software, GIS applications, early warning detection software, etc.), the Relational Database to manage all collected data with related meta data, the communication Front-End for web remote		ACT3.3 – Net4Mplastic

	access, the Data Centre Software Interfaces for users		
[R12]	D 3.3.4 – EWS Hardware and other software Components Specifications design (Integrated Marine Drone and Marine OBU, with details of required components (hardware and firmware), firmware and other software components (mobile apps for managing the drones and for remote mobile activities).		ACT3.3 – Net4Mplastic
[R13]	D 3.3.5 - Report and database provision with all the collected data		ACT3.3 – Net4Mplastic
[R14]	D 5.3.1 - Data Centre Hardware and Network Facility implemented (Hardware, report)		ACT5.3 – Net4Mplastic
[R15]	D 5.3.2 - Remote Units and Data Centre Communication Test Procedure and Report (Document)		ACT5.3 – Net4Mplastic
[R16]	D 5.3.3 - Data Centre Test Procedure and Report (Document)		ACT5.3 – Net4Mplastic
[R17]	D 5.3.4 - Integrated System Final Test Procedure and Report (Document)		ACT5.3 – Net4Mplastic
[R18]	D.5.4.1 – Training documentation		ACT5.4 – Net4Mplastic

2 Participants to the EWS training

2.1 Introduction

The purpose of this chapter is to provide information relevant to the training and participants.

2.2 Date and location of the training

Training was performed using meet as a platform for sharing information, in the following dates:

- 8th June 22, at 2 pm (ONLINE)
- 9th June 22, at 11am and 2 pm (ONLINE)
- 10th June 22, at 11am and 2 pm (ONLINE)
- 13th June 22, at 11am and 2 pm (ONLINE)
- 14th June 22, at 11am and 2 pm (ONLINE)
- 25th June 22, at 13.30pm (ONLINE)
- 28th-29th June (UNIFE LOCATION during PROJECT FINAL MEETING)

Each session lasted 1 hour to explain the solution from the operational point of view. A questionnaire was required to be filled at the end of each session.

2.3 Trainer

Training was performed by Nicola Fraticelli and Daniele Calore as trainers of the EWS platform.

2.4 Participant list

We had a good participation within the user group, represented by most of the project partners, some representative of external stakeholders. We got 17 questionnaires for assessment.

The participants lists for each training session are reporter herebelow

Partecipant	Institution	Signature
Gorana Banicevic	RERA	No signature for training online
Nelida Pogačić	PROSOFT	No signature for training online
Federica Bettarello	UNITS	No signature for training online
Itana Bokan Vucelić	TIPH	No signature for training online
Roko Andricevic	UNIST-FGAG	No signature for training online

Training session 8th June 22

Partecipant	Institution	Signature
Alessio Lupi	MARCHE REGION	No signature for training online
Gabriele Frigio	MARCHE REGION	No signature for training online
Toni Kekez	UNIST-FGAG	No signature for training online

Training session 9th June 22

Partecipant	Institution	Signature
Lorenzo Federiconi	MARCHE REGION	No signature for training online
Toni Kekez	UNIST-FGAG	No signature for training online
Aris Grozic	PROSOFT	No signature for training online

Training session 10th June 22

Partecipant	Institution	Signature
Vanni Lughi	UNITS	No signature for training online


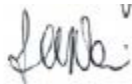

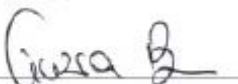
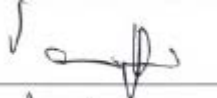




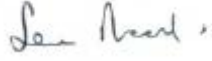




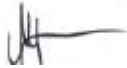
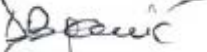
Training session 13th June 22



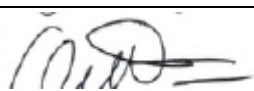
Partecipant	Institution	Signature
Lina Velčić	TIPH	No signature for training online
Elisabetta Olivo	UNIFE	No signature for training online
Joana Buoninsegni	UNIFE	No signature for training online

Training session 14th June 22

Partecipant	Institution	Signature
Nadia Barile	IZSAM	No signature for training online
Sara Recchi	IZSAM	No signature for training online
Ilaria Conti	UNIFE	No signature for training online

Training session 25th June 22

Partecipant	Institution	Signature
Corinne Corbau	UNIFE	
Luca Maria Neri	UNIFE	
Ilaria Conti	UNIFE	
Cinzia Brenna	UNIFE	
Vanni Lughi	UNITS	
Alessio Lupi	MARCHE REGION	
Lorenzo Federiconi	MARCHE REGION	
Daniele Calore	HYDRA SOLUTIONS	
Nelida Pogačić	PROSOFT	
Sara Recchi	IZSAM	
Eliana Nerone	IZSAM	
Riccardo Nardella	IZSAM	
Itana Bokan	TIPH	
Lina Velčić	TPH	
Nataša Ugrin	RERA	
Dubravka Bojanić Varezić (IOF)	RERA	

Toni Kekez	UNIST-FGAG	
Elena Marrocchino	External (UNIFE)	
Maria Grazia Paletta		

Training session 28-29th June 22

3 Training Agenda

For each training session the following agenda was adopted

- A) General Introduction of the Software Platform developed with WEB-GIS technologies.
- B) Public Credential to get access:
URL: www.net4mplastic.net
Username: operator
Password: operator3
- C) Presentation of Landing Page (Home Page) showing collection of significant pictures related to macro ad micro plastic monitoring and analysis
- D) Description of menu functionality showing DRONE & OBU DATA
- E) Description of menu functionality showing MODEL DATA
- F) Description of menu functionality showing COASTAL PLASTIC INDEX DATA
- G) Description of menu functionality showing LAB ANALYSIS DATA
- H) Description of menu functionality showing Macro Plastic SEA SENTINEL DATA
- I) Export of data in CSV format
- J) Upload of new mission or lab analysis data
- K) Description of functionality generate WARNING BULLETIN

4 Evaluation of the training

4.1 Key index

The main key indexes considered for assessment are the following:

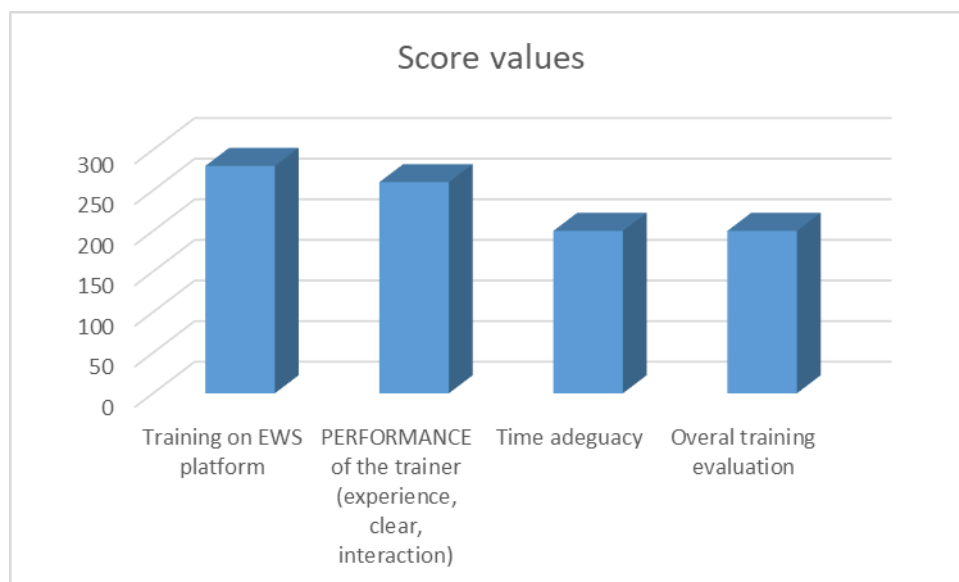
- Training on EWS platform
- PERFORMANCE of the trainer (experience, clear, interaction)
- Time adequacy
- Overall training evaluation
- User Friendly SW

4.2 Analysis

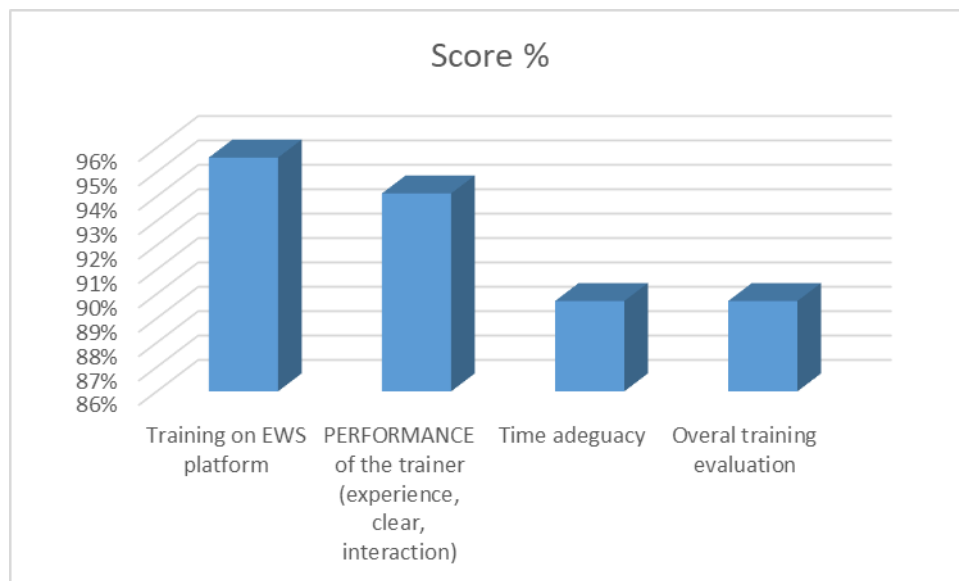
Here is a table summarizing the overall value assigned by the participants to the indicators.

indicators	insuff	suffic	good	excellent	total
1 Training on EWS platform	0	0	3	14	17
2 PERFORMANCE of the trainer (experience, clear, interaction)	0	0	4	13	17
3 Time adequacy	0	0	7	10	17
4 Overall training evaluation	0	0	7	10	17

The following chart provide the scoring assigned to the indicator, where 100 is the max value, considering a weight of 0 if insufficient, 5 if sufficient, 15 if good, and 20 if excellent.



Here is the same scoring in %



According to the scoring calculated:

- The overall training evaluation is very positive, with a scoring of 90%
- Training on EWS platform was scored 96%
- Performance of the trainers and time adequacy was scored 94%
- Time adequacy was scored 90%

4.3 Conclusion

Training has been performed according to the program, and provided to 17 stakeholders. The overall training evaluation is very positive, with a very good performance of the trainers involved.

5 Annexes

Annex 1 - Training assessment: comments table.

Annex 2 - Training assessment: copy of filled training questionnaire.