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WP 3.2: Test on existing mapped training

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Deliverable description

The new model will be tested on the sample training courses selected in M6. Pilots will apply the system in order to come to a transparent and clear identification of the LO, units of LO and qualification levels of the training courses selected. The results of this exercise will be shared, compared, discussed and refined during a focus group on M18. The results will then be validated by the VET technical partner in M20 and will be included in the Manual as empirical references to facilitate exploitation by other interested pilots, national authorities or training providers. Data protection will be taken into account for the publication.

Introduction

This deliverable is one of the key aspects of the project and represents one of its most challenging aspects. The ratio behind testing the training available with the competences developed in the draft framework is crucial to the success of CERTIPILOT.

The training available for Maritime Pilots has been investigated in the context of WP2 whereby each pilotage organisation participating in the project has indicated a number of training activities that not only are being carried out by Maritime Pilots, but also that should be or would be carried out in the future in order to guarantee the maintenance and updating of competences.

It has to be noted that per se, Maritime Pilots are required to undergo periodic refreshment training which is normally delivered over 1 or 2 days every 2 to 5 years. Each country's National Legislation in fact establishes the content and intensity of training to be undertaken. The training is generally linked to the maintenance of the pilotage licence from the individual professional.

Spain and Turkey have a similar approach to training whereby a centralised body organises periodic training attended by Maritime Pilots to refresh some of their competences and get their licence validated. These short courses are recognised by the Maritime Authorities of the respective countries but they are not earmarked in the European Qualification Framework. Apart from this type of training, Maritime Pilots in Spain and Turkey are not requested to develop further competences from the Central Government Authority, therefore all the additional training undertaken is voluntary and depends on the decisions taken at the level of the individual pilots.

In Malta the training system is quite different and can represent a new model to effectively respond to the fast changing market and the new challenges. The National Authority in fact retains a percentage of the tariff paid by shipping companies in relation to the pilotage service. The money retained will be released to the Maltese Pilots only upon provision of evidence that training has been undertaken. The flexibility of this system allows Maltese Pilots to be free to choose the type of training that is relevant to them on the basis of the specific training needs identified within the workforce. Thanks to this incentive-based system, Maltese Pilots have been encouraged in the last years to undergo training regularly and strengthen and acquire competences.

CERTIPILOT is therefore going far beyond the legal requirements because it establishes a new set of competences that can be further developed and puts them together under a single umbrella.

In addition CERTIPILOT does not only provide for a set of competences, knowledge and skills that are connected to Environmental Protection and Risk Prevention in Ports and Passage Areas, but thanks to the research and testing with existing training, it actually links the single knowledge and skill with existing training.

Training Available

From the Survey on Training and Legislation (D2-4) the following list has been compiled in order to identify the main training that is relevant for the Maritime Pilots.

1. Simulation

Computer Based Simulation (virtual)
Ship Handling Techniques
Azi Pods Techniques
Emergency Ship Handling
Beaching Techniques
Radar Training Simulation
ECDIS Training Simulation
Search & Rescue
Bridge Resource Management for Pilots
Use/limitations of various tugs
Tractor Tugs
Tug Escort Training
Emergency Towing Operation
Pilot Professional Development Course

Manned Models

Ship Handling Techniques
Advanced Ship Handling Techniques
Emergency Ship Handling
Azi Pods Course
Pilot Professional Development Course

2. Effective Communication

Bridge Resource Management for Pilots
Mentor Training for Pilots
Media response workshop

Stress Management Course

3. Legal

Advanced Collision Regulations for Pilots

Fatigue, Sleep and Medication

Pollution Prevention Course

Pilotage Regulations

4. Electronic Navigational Aids

Automatic Identification Systems & ECDIS Training

E Navigation for Pilots & Portable Piloting Navigation Systems PPNS

NARAS – Management Level

Use of Radar in Restricted Visibility

ECDIS Generic Training Module 1.27

5. STCW Courses

Personal Survival Techniques (STCW 95 A-VI/1-1)

Advanced Fire Fighting (STCW 95 A-VI/3)

Personal Safety & Social Responsibility (STCW 95 A-VI/1-4)

Medical First Aid (STCW 95 A-VI/4-1)

Global Maritime Distress & Safety Systems (STCW'95 – A-IV/2)

6. Specialised Course

Tanker Familiarisation Training (STCW 95 A-V/1)

LNG Familiarisation

Specialised Tanker Training Programme Oil (STCW 95 A-V/1)

Specialised Tanker Training Programme Liquefied Gas (STCW 95 A-V/1)

Specialised Tanker Training Programme Chemical (STCW 95 A-V/1)

Crisis Management & Human Behaviour Training (STCW 95 A-V/2)

Ship Security Officer (STCW 95 A-VI/5)

Those have all been taken into consideration and analysed at the time of linking the Learning Outcomes identified with possible training that is instrumental to achieve them.

Methodology

Desk research has been the main methodology adopted which gave the possibility to have a clear and complete overview on what was available for Maritime Pilots.

After the identification of the training, its full content, including modules, lesson plan, learning material etc. have been studied and analysed in the light of the possible link with the LO.

Partners have taken care of specific Learning Outcomes and linked them to the training. During the meetings in Italy in January 2013 and Spain in June 2013 the table has been updated, discussed and consolidated, particularly in relation to the more challenging items.

Discussion, comments and proposals from partners have been crucial to fine-tune and address all the elements related to the deliverable, which was approved during the meeting in Spain in June 2013.

Once the deliverable has been approved, the VET Technical partner, CSEL Srl carries out the validation of the test and provides the consortium with comments and suggestions.

Testing Training

Three sections compose the testing training table, each one corresponding to the Occupational Standard/Technical Competence identified. Here below the three Technical Competences.

1. Able to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances in his designated port/area
2. Able to give advice to the ship Captain in order to avoid and or minimise pollution in emergency circumstances in his designated port/area
3. Participates in Rescue operations

Thanks to the work on the framework, the breakdown of each competence into knowledge and skills related is possible and we can therefore identify what are the Learning Outcomes related.

The flow leading to the Learning Outcomes can be clearly and easily identified in the table.

The table can be read as follows:

In order to acquire the competence Participates in Rescue Operations, there are a number of skills and a set of knowledge that need to be achieved.

Each competence or skill is linked to the relevant Learning Outcome identified. This is featured under the column "Learning Outcome".

There are some cases where the Learning Outcome selected is too wide and a further breakdown is therefore necessary in order to be able to link it with relevant training.

COMPETENCE Participates in Rescue operations		Learning Outcomes	
Knowledge	1. Knowledge of international, national and local SAR (Search And Rescue) procedures.	Communication to be done before initiating a search and rescue operation; type of search and rescue pattern; First Aid Procedures	Establish a datum
			Establish the search pattern applicable in the particular circumstances
			Liaise with SAR coordination centre
			Acknowledge and execute instructions received from SAR coordination centre
			Perform First Aid Procedures
	2. Knowledge of emergency response plans.	Types of emergencies and role of the pilot in the response plan (SAR)	Outline the main aspects of the local plan (SAR)
			Describe the role of the pilot in the SAR
			Recognise the various parties involved in the SAR
	3. Recognize and prevent risk/dangerous situations.	Understanding the situations that could lead to accidents	Recognise the different SAR patterns
			Describe examples of misinterpretation of the information from electronic navigational aids leading to accidents
	4. Personal Survival Techniques.	Basic principles of survival at sea, use of lifesaving appliances such as lifejacket, liferaft, immersion suits, etc.	Describe accidents caused by fatigue on the ships' crew
			Describe examples of miscommunication within the Bridge Team leading to accidents
Skills	1. Apply international, national and local procedures in the SAR (Search And Rescue).	Proper application of relevant SAR procedures	Establish a datum
			Establish the search pattern applicable in the particular circumstances
			Liaise with SAR coordination centre
			Acknowledge and execute instructions received from SAR coordination centre
	2. Utilize procedures to recover rescued persons.	Use of recovery systems and procedures utilised onboard the pilot boat	Operate recovery systems on board pilot boats
			Recover an unconscious survivor from water
		Coordinate with pilot boat crew to recover the survivor	



The above information is derived from the draft model framework produced by the CERTIPILOT team and through this deliverable a link has been established with the relevant training identified in the Survey on Legislation and Training produced at the beginning of the project (D 2-4).

The Testing Training in fact allows for the identification of the relevant training that in the CERTIPILOT team opinion is instrumental to achieve that specific Learning Outcomes.

The column Type of Training specifies what type of course is to be followed to achieve that LO.

By taking the previous example, the type of training connected to the Learning Outcome identified consists in Tailor made courses on Search And Rescue.

Learning Outcomes		Type of training
Communication to be done before initiating a search and rescue operation; type of search and rescue pattern; First Aid Procedures	Establish a datum	Tailor made course dealing with SAR in territorial waters
	Establish the search pattern applicable in the particular circumstances	
	Liaise with SAR coordination centre	
	Acknowledge and execute instructions received from SAR coordination centre	
	Perform First Aid Procedures	

Once the type of training connected with the Learning Outcome has been established, the CERTIPILOT team has developed the main aspects of the identified training.

At this stage it is important to remark that the type of training identified comes from the experience of the consortium, particularly that of Turkish Maritime Pilots Association, Colegio Oficial Nacional de Practicos de Puerto and Malta Maritime Pilots. However, this is in no way a definite and final selection, which is valid for everyone. The link between LO and Training reflects the opinion and experience of the said organisations. At the same time, if other training programmes that achieve similar - if not the same – Learning Outcomes are identified, they can be carried out.

However, although the type of training might change, in the case of Search and Rescue, due to the specific elements and functioning of Search and Rescue operations, we see this

possibility very unlikely to happen. The selection of different type of training to achieve the same LO might most likely occur in some of the areas of TC 1 and TC 2.

Once the type of training has been selected, its main characteristics have been studied, analysed and included in the list.

In particular the following elements were deepened:

Delivery Method

Out of the possible delivery methods for a training course (lectures, practicum, simulations etc.) the consortium has identified the most appropriate to the type of training identified.

Assessment Method

Hours

The hours of training have been divided into contact hours, hands on training, self-study and assessment. Thanks to this approach and to the breakdown of training hours, it is easier to link the system within ECVET.

Reading List

Reference to the main documentation and learning material available.

In the case of the example taken on TC3 the testing training table shall be read as follows:

In order for the Occupational Standard to be achieved, the relevant knowledge and skills must be fulfilled.

Each knowledge and skill has been linked with a Learning Outcome and where relevant with the Units of the Learning Outcome.

Each LO is linked to the type of training identified, which is further detailed in terms of teaching methodology, assessment method, duration and reading list.

COMPETENCE								
Participates in Rescue operations		Learning Outcomes		Type of training	Delivery method	Assessment method	Hours	Reading List
Knowledge	1. <i>Knowledge of international, national and local SAR (Search And Rescue) procedures.</i>	Communication to be done before initiating a search and rescue operation; type of search and rescue pattern; First Aid Procedures	Establish a datum	Tailor made course dealing with SAR in territorial waters	Lectures	Ongoing assesment through active participation of trainees to the lecture. Questioning with all trainees shall be done.	Contact hours 4 Hands on 2	International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual Volume 3
			Establish the search pattern applicable in the particular circumstances					
			Liaise with SAR coordination centre					

			Acknowledge and execute instructions received from SAR coordination centre					
			Perform First Aid Procedures					

Complete testing training

COMPETENCE Able to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances in his designated port/area	Learning Outcomes	Type of training	Delivery method	Assessment method	Hours	Reading List	
<i>1. How to notify the relevant Authorities and call for the required assistance.</i>	Knowledge of on how emergency communications shall be communicated to the relevant authorities	GMDSS Restricted Operator's Certificate	Lectures	Writtent test	10 theoretical	GMDSS Manual	
<i>2. What needs to be communicated to the parties involved in the dealing with emergency (Captain, Bridge team, Authorities, etc.).</i>	At the end of this module, a candidate would know the standard marine communication phrases	IMO Standard Marine Communication Phrases Training	Lectures	Written test and oral test	4 hours theory 1 hour assessment	Standard Marine Communication Phrases, IMO Resolution A.918 (22)	
<i>3. How to anticipate the effects of that emergency</i>	A candidate would have the necessary knowledge to anticipate effects the vessel may have due to the ongoing emergency	Emergency manouvre with different types of vessels such as Cargo, Gas and Oil Tankers, Container Ships, Car Carriers, RORO Ferries and Passenger Ships.					
		Use of ships' anchors to prevent drifting					
		Use of tugs to prevent drifting	Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur	Tailor made Computer Simulation or Manned model training	Debriefing	Simulation/Manned Model: 21 hrs training and 3 hours debriefing assessment	Manned models/Computer Simulation manual related to emergency situations - At least Rudder, Engine and Bow Thruster failures

Knowledge	<i>4. How to interpret the information displayed on the bridge navigational aids or given by the crew.</i>		The candidate would have a sound understanding of how to interpret information retrieved out of the bridge navigational instruments and the information given by the crew	Bridge Resource Management for Pilots Training Course	Lectures:	Written test	BRMP 22 Hours Tuition and 2 hours assessment	Bridge Team Management for Pilots Manuals
				ECDIS Generic	Lectures:	Written test	ECDIS, 38 hours tuition 2 hours assessment	ECDIS and Positioning (Vol. 1 and 2) – Nautical Institute,
				ARPA and RADAR Observer course - mana level IMO Model course 1.08),	Lectures:	Written test	Radar Observer, 22 hours tuition 2 hours assessment,	Radar and AIS Vol 1 and 2 Nautical Institute or equivalent
				Training on AIS information	Lectures:	Written test	AIS interpretation training 2 hours tuition, 1 hour assessment	
	<i>5. How different types of emergencies are handled.</i>	Knows how to handle different types of emergencies and how weather conditions can affect emergencies	Handle emergency with Rudder failure	Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur	Tailor made Computer Simulation or Manned model training	Debriefing session	Simulation/Manned Model: 21 hrs training and 3 hours debriefing assessment	Manned models/Computer Simulation manual related to emergency situations
			Ship Handling after a Tug Failure					
	Handle emergency with Power loss							
	Handle emergency with Grounding of Vessel							
	Handle emergency with Collision with other objects							
	Handle emergency with currents more than 1 knot							
Handle emergency with wind force of at least 24 knots in port								
Handle emergency with restricted visibility								
<i>6. How weather conditions can effect that emergency.</i>								

Skills	1. Maintain good communication with the Captain, Authorities and all the parties involved in the dealing with emergency.	At the end of this training, the candidate would have achieved the necessary skills to communicate clearly to all parties involved should an emergency arise	GMDSS Restricted Operator's Certificate	Practicum	Test	GMDSS 14 hours practical	GMDSS Manual	
	2. To use and relay the information displayed on the bridge navigational aids or given by the crew.							
	3. Coordinate with the Captain on the most appropriate actions to be taken in that emergency.	A candidate would be able to anticipate effects the vessel may have due to the ongoing emergency	Request relevant shore assistance	Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur	Tailor made Computer Simulation or Manned model training	Debriefing	Simulation/Manned Model: 21 hrs training and 3 hours debriefing assessment	Manned models/Computer Simulation manual related to emergency situations - At least Rudder, Engine and Bow Thruster failures
	Liaise with relevant authorities concerned by the emergency							
	Handle emergency with Rudder failure							
	Ship Handling after a Tug Failure							
	Handle emergency with Power loss							
	Handle emergency with Grounding of Vessel							
	Handle emergency with Collision with other objects							
	Handle emergency with currents more than 1 knot							
Handle emergency with wind force of at least 24 knots in port								
Handle emergency with restricted visibility								
4. To support the Captain in different types of emergencies.								
5. Interpret the effects of weather conditions in the light of that emergency.								

COMPETENCE Able to give advice to the ship Captain in order to avoid and or minimise pollution in emergency circumstances in his designated port/area		Learning Outcomes	Type of training	Delivery method	Assessment method	Hours	Reading List
Knowledge	1. Local emergency plan concerning anti-pollution.	A Pilot would know his role in the emergency plan and how the plan is implemented being the link between authorities and the vessel causing the incident	Theoretical training on the available means for dealing with a pollution incident in or outside port areas (non-standardised)	Seminar: by local anti pollution authorities	ongoing assessment during seminar	Theory: 6 hrs	Local Emergency Plan Manual; local places of refuge, presentation of relevant case studies
	2. The properties and effects of dangerous cargoes.	Properties and effects of dangerous cargo carried at sea	IMO relevant instrument about properties of dangerous goods – Model Course 1.10	Lecture or online training	written test	40 hours	IMDG code
	3. The effect of other pollutants spillage in the environment.	Understanding the impact of the polluting incidents on sea and environment as well as its economic effects	Seminar	Seminar	Ongoing assesment through active participation of trainees to the seminar. Questioning with all trainees shall be done.	4 hours	Case studies on incidents occurred with negative impact on environment
Skills	1. Apply local emergency plans to prevent or contain pollution.	A Pilot would be able to perform his role in the emergency plan being the link between authorities and the vessel causing the incident	Oil Pollution response drills in order to get familiar with the clean up procedure	Hands-on	Debriefing session to assess the drill	Hands-on: 8 hours – Briefng/D ebriefing: 4 hrs	Local Emergency Plan Manual; local places of refuge
	2. Recognize and prevent situation of possible pollution.	The candidate will be able to support the captain to avoid bad practices which could cause pollution	Seminar - Pollution Prevention	Seminar: by local anti pollution authorities	Ongoing assesment through active participation of trainees to the seminar. Questioning with all trainees shall be done.	2 hours	International safety guide for tankers & oil terminal – ISGOTT

COMPETENCE Participates in Rescue operations		Learning Outcomes		Type of training	Delivery method	Assessment method	Hours	Reading List
Knowledge	1. Knowledge of international, national and local SAR (Search And Rescue) procedures.	Communication to be done before initiating a search and rescue operation; type of search and rescue pattern; First Aid Procedures	Establish a datum Establish the search pattern applicable in the particular Liaise with SAR coordination centre Acknowledge and execute instructions received from SAR Perform First Aid Procedures	Tailor made course dealing with SAR in territorial waters	Lectures	Ongoing assesment through active participation of trainees to the lecture. Questioning with all trainees shall be done.	Contact hours 4 Hands on 2	International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual Volume 3
	2. Knowledge of emergency response plans.	Types of emergencies and role of the pilot in the response plan (SAR)	Outline the main aspects of the local plan (SAR) Describe the role of the pilot in the SAR Recognise the various parties involved in the SAR Recognise the different SAR patterns	Tailor made course dealing with SAR in territorial waters	Lectures	Ongoing assesment through active participation of trainees to the lecture. Questioning with all trainees shall be done.	Contact hours 6	Port Emergency Response Plan relevant to the licensed area of operation of the pilot
	3. Recognize and prevent risk/dangerous situations.	Understanding the situations that could lead to accidents	Describe examples of misinterpretation of the information from electronic Describe accidents caused by fatigue on the ships' crew Describe examples of miscommunication within the Bridge Team leading to accidents	Seminar	Seminar	Ongoing assesment through active participation of trainees to the seminar. Questioning with all trainees shall be done.	2 hours	Case studies on incidents occurred
	4. Personal Survival Techniques.	Basic principles of survival at sea, use of lifesaving appliances such as lifejacket, liferaft, immersion suits, etc.	STCW Personal Survival Techniques – STCW A-VI1-1	Lectures and Practical	Ongoing assessment: questioning and practical demonstration of	8 hours	Generic sea survival practical manual and notes	
Skills	1. Apply international, national and local procedures in the SAR (Search And Rescue).	Proper application of relevant SAR procedures	Establish a datum Establish the search pattern applicable in the particular Liaise with SAR coordination centre Acknowledge and execute instructions received from SAR	Tailor made Simulation exercise simulating SAR	Simulation	Debriefing after the simulation	Simulation 2 Assessment Debriefing 1 hour	International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual Volume 3
	2. Utilize procedures to recover rescued persons.	Use of recovery systems and procedures utilised onboard the pilot boat	Operate recovery systems on board pilot boats Recover an unconscious survivor Coordinate with pilot boat crew to recover the survivor	Tailor made drills on board of the pilot boat	Practical	Ongoing assesment through active participation of trainees to the drill. Questioning to all	3 hours	Recovery System Manual of the pilot boat