



Intellectual Output 1 – Activity 3 Study and compilation of the different official studies that are available in Europe about shipwright. – Final Report

LEADER:



The activity 3 of the first Intellectual Output consisted in the review of existing training offer in the different maritime zones/countries. The objective is to find relevant information about European training programs about shipwright and extract some information that it will be useful for designing shipwright course in the second part of the project.

This activity was considered to be done during May and June of 2020 but due different problems, it was extended during the 2<sup>nd</sup> part of 2020 in order to obtain more and useful results.

It is necessary to clarify that about “studies”, consortium is referring to educational training, the different courses or training that it is necessary to follow to acquire the knowledge and develop the skills to be shipwright. It is necessary to add that it is true that this job position has a lot of non-formal learning, including oral transmission of knowledge, but beside that, it is usual that in each country you could find official learning to obtain the license to work on it.

Leader of this activity was CETEM but with the participation of every partner. The objective was to accomplish Indicator 5 and Indicator 6 inside Quality assurance plan, which are the “Number of maritime areas where is searching documents around Europe” and “Number of countries where is searching documents around Europe”, in the first one, the objective is 6 (Intermediterranean, Baltic, North Sea, Atlantic Arc, Balkan & Black sea and Islands) and in the second one 18 countries. Those indicators are for Activity 1 and Activity 2.

First of all, it was considered the different areas of the different maritime areas:

#### BALKAN AND BLACK SEA



- Albania
- Bosnia and Herzegovina (only 20 km of coast)
- Bulgaria



- Croatia
- Continental Greece
- Montenegro
- Romania
- Ukraine
- Serbia (2000 km of navigable rivers and lakes)
- Turkey (North)

## ISLANDS



- Canary Islands
- Balearic Islands
- Corsica
- Sardinia
- Sicily
- Greece islands (Cyclades, Dodecanese, Ionian islands, North Aegean Islands).

Including Crete

- Cyprus
- Malta

## INTERMEDITERRANEAN

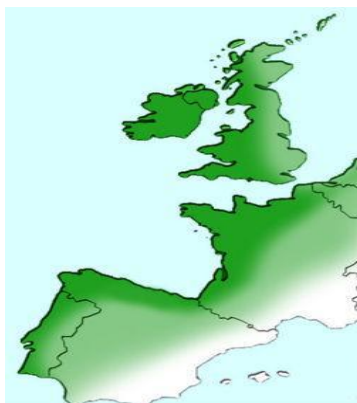


- South of Spain
- South of France
- Italy (including Venice and Genoa)
- Turkey (South)





## ATLANTIC ARC



- Portugal
- North of Spain
- North of France
- Ireland
- England (South)
- Wales

## BALTIC SEA



- Poland
- Sweden
- Finland
- Russia
- Estonia
- Latvia
- Lithuania
- Germany (Mecklenburg)





## NORTH SEA



- Scotland
- England (East)
- Belgium
- Netherland
- Denmark
- Norway
- Germany

It could be concluded that for the research of training courses, in some cases, this division is not totally functional due to the fact that we are looking for national training courses and maritime areas is more focused in coasts than countries. For that, it was divided the research among the partners taking into account countries, but not forgetting that those countries are covering all the maritime areas.





For that the division was done among partners in the following way:

Partner	Countries				
<b>UMU</b> 	 SPAIN	 MALTA	 UK	 SWEDEN	 NORWAY
<b>CEIPES</b> 	 ITALY	 CROATIA	 SLOVENIA	 MONTENEGRO	 BOSNIA
<b>CETEM</b> 	 ROMANIA	 IRELAND	 FRANCE	 DENMARK	 PORTUGAL
<b>WULS</b> 	 POLAND	 LITHUANIA	 LATVIA	 FINLAND	 ESTONIA
<b>IDEC</b> 	 GREECE	 TURKEY	 ALBANIA	 BULGARIA	 REP. CYPRUS
<b>IW</b> 	 BELGIUM	 NETHERLAND	 UKRAINE	 GERMANY	

In that way, all the 6 maritime areas are represented in those 29 countries

Previously to start doing the research, it was developed some documents to the consortium:

- Search responsibilities (with the countries where each partner has to search)
- How to search
- Description table and description table explanation

The second document is called “How to search”. That document pretended to be a guide to aid the partners in the IO1A3 activity, for that it is not mandatory to follow the advises but recommendable to be followed

In fact, it is difficult to recommend how to revise the different European VET systems, because there are a lot of diversity in our European educational structure. Obviously, also, it is necessary to revise possible VET courses outside official channels as non-academic training that can be imparted by private entities and the options inside Adult Education.

The partners had the objective of finding different enabling courses in the different countries to be able to work as shipwright (wooden boatbuilders), in order to have the same concept in mind, it was agreed that it is the person who builds and repairs boats and ships of all sizes, from handmade canoes to large naval vessels. They should be able to construct the different structures and elements of the ship. Those boats could be built from a different range of materials but it is preferred wood.

After that, in the document, it is recommended some strategies, including some websites depending the country. It was recommended to the partners to try to use keywords, previously identifying and using different terms related with the topic (it could be used similar terms than in IO1-A1) but trying to focus on the objective of searching training courses for this job position (or, in some cases, to some tasks related with it). It is better to use noun and verbs as keywords, in some cases it would be necessary to use synonyms of the chosen words, grammatical variants, in other cases related terms with similar meaning or in the same semantic field. Partners followed these instructions and moreover, after they have found the first documents, they were including new terms to their lists. It was translated all the keywords into national languages where the searches were carried out with combinations of logical operators (or, and, not).

It was recommended that the training offer was active in that moment, but obviously it could be mentioned former courses for this job position because it could be a useful information.

It was given some sources of information to the partners according their countries to start the search, but they have used more than the ones that it is mentioning down below:

- Belgium:
  - <https://www.belgium.be/fr/formation/enseignement/secondaire>
- Czech Rep.:
  - <http://www.nuov.cz/vzdelavani-v-cr?!chan=1&lred=1>



- Denmark:
  - <https://www.ug.dk>
  - <https://www.efteruddannelse.dk>
  - <https://eng.uvm.dk/adult-education-and-continuing-training/adult-vocational-training>
  
- Estonia:
  - <https://www.hm.ee/en>
  
- Finland:
  - <https://minedu.fi/en/vocational-education-and-training>
  
- France:
  - <https://www.education.gouv.fr/le-lycee-41642>
  - <https://www.education.gouv.fr/cid216/le-centre-de-formation-d-apprentis-c.f.a.html>
  - <https://www.education.gouv.fr/les-greta-2957>
  
- Germany:
  - <https://www.kmk.org/kmk/information-in-english.html>
  - <https://www.bmbf.de>
  - <https://www.bibb.de>
  
- Ireland:
  - <https://www.education.ie/en/The-Education-System/Further-Education-Training>
  
- Italy:
  - [https://archivio.pubblica.istruzione.it/dg\\_post\\_secondaria/competenze.shtml](https://archivio.pubblica.istruzione.it/dg_post_secondaria/competenze.shtml)
  
- Netherlands:
  - <https://www.onderwijsraad.nl>
  
- Norway:
  - <https://www.studyinnorway.no>
  - <https://www.studyinnorway.no/what-can-i-study?level=&subject=>
  
- Portugal:
  - <https://www.iefp.pt>
  - <https://www.iefp.pt/modalidades-de-formacao>







- Rep. Cyprus:
  - <http://www.moec.gov.cy/mtee/en/index.html>
  
- Spain:
  - <http://www.todofp.es>
  - <http://www.todofp.es/que-como-y-donde-estudiar/que-estudiar.html>
  - <https://www.fundae.es/trabajadores/buscador-de-cursos>
  - [https://cursos.universia.es/cursos\\_online.html](https://cursos.universia.es/cursos_online.html)
  - <https://www.cursosformacionprofesionalfp.com/>
  - <https://sede.sepe.gob.es/buscadorcursos/RXBusqInsCursosWebRED/busquedaFormacionAvanzada.do>
  
- Sweden:
  - <https://sweden.se/society/education-in-sweden>
  
- United Kingdom:
  - <https://study-uk.britishcouncil.org>

In addition to this, partners has consulted <https://www.cedefop.europa.eu/en> , it is the website of CEDEFOP (European Centre for Development of Vocational Training) who supports the development of European vocational education and training policies and contributes to their implementation. It was consulted the country specific reports that CEDEFOP prepare and the strategies for implementing validation of non-formal and informal learning and some key documents about priorities in VET in Europe. Specially the country reports were found in <https://www.cedefop.europa.eu/en/publications-and-resources/country-reports> with examples like in United Kingdom like this: [https://www.cedefop.europa.eu/files/5159\\_en.pdf](https://www.cedefop.europa.eu/files/5159_en.pdf)

About the document about description table (and description table explanation) is a document that partners had to fill with the different information for each country that they had found about training courses in order to obtain similar information in every country.

<b>Country:</b>	Country that it was done the research
<b>URL (web address):</b>	The link to the information in case that it is necessary to consult directly
<b>Legislation:</b>	Legislation where it is recognised as official studies in that country (in case that it is official)
<b>Training course title:</b>	



<b>Training level:</b>	It is collected if it is a VET course, or high school or other type
<b>Explanation about VET system:</b>	Short explanation about VET system in that country
<b>Institutions:</b>	Identification of institutions or places where you can study those training courses.
<b>Entry requirements</b>	If it is needed previous knowledge or some previous exam or title to be admitted
<b>Hours</b>	Hours of training
<b>Length (years)</b>	It is a 1 year course, 2 years...
<b>Study regime (face to face, e-learning)</b>	It is a face to face course or it could be done by e-learning (totally or partial) or other new innovative way
<b>Internship (YES, NO, dual education system):</b>	It is necessary to do some work in an organisation without being paid to satisfy requirements for the qualification. Dual education system combines apprenticeships in a company and vocational education in the vocational school, really typical in countries like Germany, Austria
<b>Language/s of courses:</b>	Usually in the native language but sometimes course could be in English or other language
<b>Official description</b>	Descriptions of the courses
<b>Units/Modules</b>	Compilation of all the information about the structure, the units and the content inside each unit
<b>Knowledge/Skills acquired</b>	Knowledge or the skills that the student would learn after the training course
<b>Cost for the student</b>	Is it free or they have to pay something?
<b>Employment rates</b>	Possibilities of finding job after the achievement of the course
<b>Institution responsible of location</b>	Member of the consortium who has done the search

Finally, it was found 101 training courses in the different countries in Europe with some relation with shipwright or with the development of some of the skills that it would be useful for working in, the information of those courses is available inside the repository of the project developed for IO1-A4.

In summary form, the analysis of the countries has been as follows:





## PORTUGAL (ATLANTIC ARC)

It was found 4 courses with information about the different modules and units like Naval Construction and Repair Operations in wood or Shipbuilding / Pleasure Craft Technician. The duration in those courses is between 300 and 3280 hours. The education and training system in Portugal is centrally administered with reference to the definition of major policy lines and curricular, teaching and financial guidelines.

Training courses found in Portugal and the institutions, duration and description:

- **Shipbuilding / Pleasure Craft Technician** (Técnico/a de Construção Naval / Embarcações deRecreio) - National Agency for Qualification and Vocational Education – 3000 hours. Course to guide and develop vessel construction, repair and conservation work, in wood and in fiber-reinforced polymers, in accordance with applicable standards, safety regulations and good practice rules.

- **Naval Construction and Repair Operations in wood** (Operações de Construção e Reparação Naval em Madeira) - FOR-MAR, Professional training center for fishing and the marine pole of Sesimbra – 300 hours. The objectives of this course are to learn about the tasks inherent to the construction and repair of wooden boats, based on the interpretation of technical and schematic drawings, taking into account the rules of safety and health at work.

- **Naval and Ocean Engineering** (Engenharia Naval e Oceânica) - Técnico Lisboa – 6 semesters. This course aims to provide students with a solid background in mathematics and physics, computer science and engineering science, in the fields of applied mechanics, thermodynamics, solid and structural mechanics, fluid mechanics, systems and control, and naval engineering and architecture, also considering management areas, allowing them to pursue more advanced master's studies.

- **Naval Mechanics Technician** (Técnico(a) de Mecânica Naval - Instituto Profissional de Transporte e Logística de Madeira – 3280 hours. They will learn how to regulate, drive and repair diesel engines, alternative steam engines and other machines, as well as auxiliary equipment on board ships, being responsible for their correct operation. Their Employability are in shipyards, boats, nautical sector.



## IRELAND (ATLANTIC ARC)

In Ireland it was found 6 training courses, it could be mentioned hull artificer and maintenance and support course because in those ones were available the name of the modules.





Training courses found in Ireland and the institutions, duration and description:

- **Boatbuilding (Small Wooden Craft)** - CAVAN INSTITUTE – 1 year. The purpose of this course is to provide students with the information, skills and practical experience necessary to work in the area of boat building. The course has a strong craft element and will enable students to gain skills in the construction of small wooden craft. There will be a strong focus on the use of modern materials and techniques. This course is aimed at retaining traditional boat making and repair skills, and developing new skills in boat design, building and repair. The course is aimed at those who are interested in boat building and repair as a career and who want to learn the trade and the modern methods required by current standards.

- **Boat Building, Maintenance and Support course** - Boat Building Academy, City and Guilds – 40 weeks. This course gives students the skills to find jobs in the marine industry or establish themselves as boat builders in their own right, although some students join the course for a sabbatical or on retirement and have no plans to work in the marine industry.

- **Boatbuilding Diploma Level 2 (Foundation)** - Falmouth Marine School – 1 year. Students will be capable to manufacture and assemble components to form the structure of a boat as well as the interior and exterior. They will be expected to work both individually and as part of a team. Students will understand and comply with organisational and statutory safety including sustainability requirements and can work with minimum supervision. Boatbuilders typically work with associated trades such as Marine Engineers and have a strong understanding of the marine industry. Upon successful completion of their training, the individual will be multi-skilled and thus capable of adapting to changing demands as boats become more complex; and new materials and methods are introduced.

- **Boatbuilding Diploma Level 3 (Advanced)** - Falmouth Marine School – 1 year. This is a highly practical course where it will be developed the skills necessary to start a successful career in boatbuilding. Students will learn practical woodworking, boatbuilding technology and composite manufacture, whilst working on live projects for clients. They will be capable to produce and fit structural boat components and work with fibre-reinforced plastics in specialist workshops at Ponsharden.

- **Hull Artificer**- National Maritime Collage of Ireland – 3 years. It is received a recognised carpentry qualification with practical experience on the Naval Base and aboard Naval Ships. The shipwright is responsible for the repair of onboard furniture fittings and the implementation of damage control precautions where required.

- **Shipbuilding and Ship Repair** - Maritime Training Academy – 1 year. In this course, the students will develop and deepen their knowledge of the Shipbuilding and Ship Repair sector. They will gain the essential skills and knowledge required, enabling them to successfully run and manage the building and repair process. It is included module subjects such as the docking process, specifications and docking incidents and accidents, alongside other essential subjects such as an introduction to the shipbuilding and ship repair industry, contracts and project management.



## FRANCE (ATLANTIC ARC, INTERMEDITERRANEAN and ISLANDS)

In France, it was found 5 training courses, most of them focused in marine carpentry, it is available the name of the units in 2 of them

Training courses found in France and the institutions, duration and description:

- **Bac Pro Nautical Maintenance** – Lycée polyvalent de la mer; Gujan-Mestras – 2 years. Students will work in all areas of maintenance of pleasure boats, sailing and motor for navigation at sea and in continental waters. They will work on boats of different types and their equipment: pleasure boats, outboard and inboard engines, inflatable boats, sailing boats, jet skis, small fishing or transport boats. They could make a diagnosis and then maintain, replace, repair, modify all or part of the boat.

- **Marine Carpentry (Charpente marine)** - Poinso-Chapuis Lycée Professionnel (Marseille) – 2 years. The professional of this course could build and repair traditional wooden boats as well as constructions made of modern materials, they could analyse the drawings of the naval architect and adjust different materials to the boats, moreover they take action in the design of interiors, the manufacture of teak decks, masts and masts.

- **Professional License in Naval and Maritime Industry** (Licence Professionnelle Métiers de l'Industrie Navale et Maritime (M.I.N.M.)) - Université Bretagne Sud – 1 year. The objective of this course is to train technicians of a very good level with a depth knowledge in the field of shipbuilding: from military vessels to passenger ships, including fishing and commercial vessels. Their students would participate in the operational management of shipbuilding sites that have a global vision of the design and manufacturing processes, with an emphasis on knowledge of the ship and its facilities.

- **Professional Marine Carpenter Patent** (Brevet Professionnel Charpentier de marine) - Lycée polyvalent de la mer; Gujan-Mestras – 2 years. Learners will be a highly qualified worker capable of taking on a job corresponding to the most complex activities of the carpenter's trade. He is involved in the execution of works (new construction, repair, restoration) on wooden boats and associated materials: construction of traditional ship frames, wooden planks, plywood, epoxy coating in wooden construction.

- **CQP Carpenter of Nautical Fittings** (CQP Menuisier D'agencement Nautique) - Compagnons du Devoir et du Tour de France – 11 weeks. They will be nautical design carpenters with different knowledge and skills such as analyze the installation, prepare carpentry elements, assemble elements of furniture on pleasure boats, decks, configure, adjust and definitively fix the tasks.



## ROMANIA (BALKAN AND BLACK SEA)

In Romania, it was found one training course- Lacatus course for metal and naval constructions, with information of the knowledge acquired, this course is more related with metal than wood. The information of this training course with the institutions, duration and description:

- **Lacatus course for metal and naval constructions** (Curs Lacatus constructii metalice si navale) - Four and a half months. They will be capable of executing technological operations for making structural elements and assembling metallic constructions, technological operations for making structural elements, for assembling the hull, for launching the ship and for the maintenance and repair of constructions shipbuilding. They will learn about operations and maintenance of the equipment and devices from the locksmith workshops and the shipyards.



## DENMARK (NORTH SEA)

The Danish VET-system offers a VET-programme, which combines a general upper secondary education and vocational education and training giving qualification to the students for a job as well as giving them direct access to higher education in a wide range of programmes.

In Denmark it was found 3 training courses, probably the most important one is the maritime craft subjects with a duration of 4 years and a half

Training courses found in Denmark and the institutions, duration and description:

- **The maritime craft subjects** (De maritime håndværksfag) - Ministry of Children and Education – Few days to 6 weeks. In these courses, students will learn to build and repair wood, aluminium and composite materials using traditional hand tools and CNC controlled machines, also they will learn to repair sails. These courses are especially aimed to expert boat builders and sailors.

- **Shipbuilding, location and standards** (Skibsbygning, placering og regler) – 100 hours. The participant will perform safety and environmental tasks related to construction in the shipbuilding industry. They will know the names and locations of individual parts and elements in a ship structure and could use work drawings.

- Maritime crafts (Maritime håndværksfag) – Unord - 4 years and 6 months. They will learn how to build, maintain, install, and repair wood, fiberglass, and metal

boats. They will learn about materials and techniques for manufacturing and surface treatments.



## **SPAIN (ATLANTIC ARC, INTERMEDITERRANEAN and ISLANDS)**

In Spain, it was found 4 training courses directly related with shipwright, the first one “Aprendiztegi” could be the most important one and the fact, the responsible of that course was interviewed in Activity 2 explaining some interesting facts about the course and other things about the shipwright training in Spain.

Training courses found in Spain and the institutions, duration and description:

- **Aprendiztegi**, Apprentice- Albaola – 3 years. The model of this training course relies on individual motivation to produce the best results possible. This learning system is based on experiential education, tackling riverside carpentry tasks from the very beginning of training and focusing on the areas in which the person shows the most interest. The school takes place in an atmosphere centred on the recovery of our maritime heritage. The international character of the school provides a context of cultural diversity in which living together and respect for each other’s differences are valued. At the same time, apprentices learn how to work before an audience, adding value to the school’s work. The training program lasts three years, during which students can take part in every phase of traditional shipbuilding. During the three years of the program at Aprendiztegi, apprentices participate in a wide variety of boat building projects right from the beginning. The training system focuses on practicing essential skills; apprentices enter into tasks progressively, as they develop new skills and search for excellence in the quality of their work

- **Restoration and maintenance course for wooden boats** (Curs de restauració i manteniment d'embarcacions de fusta) - Federació Catalana per la Cultura i el Patrimoni Marítim i Fluvial / Taller de Fusteria Naval Massot – 18 hours. Its aim is to make known the traditional boats and the craft of making and repairing boats, the most common practices and tasks of the hoe masters. The course is developed in an active shipyard, equipped with tools and machinery, where the work will be done on a unique scaffolding, a small llagut of the Fishing Museum, from which wooden pieces of real dimensions and traditional shapes will be made. The course is aimed at students interested in shipbuilding, traditional navigation and the recovery of maritime culture. The sessions alternate theory with the practice and manipulation of tools and materials used by shipwrights, while familiarizing with a rich and unique vocabulary, which must also be valued.

- **Wooden decks maintenance course** (Curs de manteniment de cobertes de fusta) - Museu Marítim de Barcelona / Institut de Nàutica de Barcelona – 3 days. Wooden decks give warmth and elegance to boats. Proper maintenance or replacement of damaged wood is essential to keep the boat's deck in the best

condition. This course is carried out in collaboration with the Institut de Nàutica de Barcelona.

- **Pleasure Boat Maintenance** (Manteniment d'Embarcacions d'Esbarjo) - La Ràpita City Hall, Local Educational Service of the Terres de l'Ebre, Els Alfacs High School – 2000 hours. These post-compulsory studies enable the hull, structures, elements and systems that make up recreational craft to be maintained in good condition, use and operation, using established procedures and complying with the required safety, occupational risk and environmental risk specifications.



## **UNITED KINGDOM (NORTH SEA and ATLANTIC ARC)**

About UK, which is one of the most important countries in shipwright because their tradition, it was found 17, only to mention some of them, boatbuilding diploma level 2 of Falmouth Marine schools, boatbuilding of international boatbuilding training college, wooden boatbuilding in Portsmouth and a curiosity of 10 day boat building course.

Some of the most important training courses found in UK and the institutions, duration and description:

- **Boatbuilding Diploma Level 2** - Falmouth Marine School – 1 year. This is a course with an important practical element spent in boatbuilding workshops, at the heart of Cornwall's Marine Industry. Students will be looking at all the aspects of being a Boatbuilder, from simple re-finishing, repairs and restorations to new-build projects. In this course, students are being introduced in the marine industry and they are developing their essential boatbuilding skills. They will learn from experienced professionals.

- **Boatbuilding** - International Boatbuilding Training College – 47 weeks. This course is concentrated on traditional wooden boat construction and repair. This course was made with the assumption that students do not know absolutely nothing about woodworking. Any effective programme of learning must be structured and systematic so that trainees are able to build up their knowledge in a way that suits them. Every part of every module of training at the IBTC has been carefully developed and honed throughout the years to ensure that the learners are able to progress and succeed throughout each stage of the training, with each stage building on the stage before.

- **Wooden boatbuilding** - IBTC Portsmouth – 1 year. First weeks are spent in the Joinery Shop, during which time students will hone the tool handling and craftsmanship skills that are needed in the boatbuilding world. The vast majority of course content is delivered through the demonstration and practical application of key techniques on real boats



- **10 day boat building course** - Fyne Boat Kits – 10 days. They could build their own wooden boat under expert tuition in a fully-equipped workshop. They will learn the craft of boatbuilding. Learners will assemble their own boat from start to finish. It will be assembled completely, leaving just a few smaller jobs to complete at home, such as fitting hatches, rounding rails and assembling rudders and spars for sailing boats. Painting and varnishing will always be left to complete at home, due to paint drying times.

Other courses that it was found in UK: **Marine Engineering Levels 1, 2 and 3** (Blyth Tall Ship), **Leisure and Professional Course, Boatbuilding Diploma** (Falmouth Marine School), **Boat Building Apprenticeship Level 3** (South Devon College), **Apprenticeship in Marine Engineering** (Southampton City College), **5-day Boat Building Course** (Fyne Boat Kits), **Woodworking & Joinery Skills, Bench Joinery C&G, Build Your Own Boat** (International Boatbuilding Training College), **Boat Building, Maintenance and Support** (Boat Building Academy Lyme Regis), **12 Week Joinery Course** (IBTC Portsmouth), **Boatbuilding Apprenticeship** (Southampton City College) and short courses like “Lettering & Decorative Woodcarving”, “Lofting Theory”, “Traditional Rigging and Wirework”, “Router Course” ...



## **MALTA (ISLANDS)**

In Malta it was found one training course- MCAST Award in Traditional Wooden Maltese Boat Building, with 510 hours. The information of this training course with the institutions, duration and description:

- **MCAST Award in Traditional Wooden Maltese Boat Building** - Malta College of Arts & Technology – 510 hours. This course is focused in traditional Maltese Boats Building which is an old craft which risks being lost with time since presently there are very few professionals in the field to keep this craft alive. Typical Traditional Maltese Boats range from the luzzu (double-ended fishing boat), dghajsa (smaller boat) and kajjik (similar to the luzzu but has a square transom). This course is designed to give, to learners attending this course, the skills and knowledge to build these boats. Learners attending this course must already have a sound knowledge of carpentry to be able to gain the skill to build a Traditional Wooden Maltese Boat from start to finish. In this course learners will become familiar with both hand and electrical tools required to build a typical Maltese boat, as well as the material and hardware required. Learners will learn how to interpret and/or design sketches of plans to build a boat. Learners will also gain skills in creating boat models to scale and use such models to build a basic wooden boat. Eventually that knowledge will also be used to build a traditional Maltese wooden boat themselves.



## SWEDEN (BALTIC SEA)

In Sweden, it was found 4 training courses, most of them focused in building traditional, clinker-built folk boats in wood, Swedish and Nordic models. Training courses found in Sweden and the institutions, duration and description:

- **Boat builder line** (Båtbyggerlinjen) - Litorina folkhögskola – 1 to 2 years. They learn how to build traditional, clinker-built folk boats in wood, Swedish and Nordic models. They are trained in hand tools and carpentry machines.

- **Boat and shipbuilding course** (Båt- och skeppsbyggarkurs) - Skeppsholmens Folkhögskola – 2 years. The basic idea of the boat and shipbuilding course is that during the first year they will do things like: sawing timber, building a boat, sewing sails and forging fittings. A lot of time is also spent on the construction of a crawler-built sailing ship. The boat builder course also includes theory sessions and reviews - for example about boat drawings, materials, tools and machines as well as maritime history. Part of the course time is devoted to maintenance of the workshop and the folk boats that were previously built. During the second year of the boatbuilding course, they work in teams. The course provides a good foundation for those who want to work as a boat builder or as a ship carpenter

- **Boat building course** (Båtbyggnadskurs) - Holmöns båtmuseum – 10 days. In this course, learners are taken part for ten days in genuine craftsmanship and practice boat building. They will learn how to build boats in clinker technology, which is a Nordic shipbuilding tradition with very deep roots. Clinker construction means that the tables in the hull overlap each other and that they are joined together along the overlapping edge. The clink technology is used today mainly when it comes to the construction of smaller boats. The Nordic clink technology has now been nominated for UNESCO's list of humanity's intangible cultural heritage.

- **General course - specialization boat craft** (Allmän kurs - inriktning båthantverk) - Litorina folkhögskola – 1 to 3 years. It is studied general subjects in parallel with practical learning about a genuine boat craft. This means that it is divided between regular general courses and studies on the boat building line. It is included knowledge about Baltic Sea and even, a study trip.



## NORWAY (NORTH SEA)

In Norway VET has 3 levels: VG1, VG2 and VG3. Basic, specialised and recognised trade. While Vg3, it is received a training as an apprentice in a company for 2 years. It was found 5 training courses related with shipwright.

Training courses found in Norway and the institutions, duration and description:

- **Curriculum in the wooden boat building subject** (Læreplan i trebåtbyggerfaget) – Utdanningsdiktoretet - 1 year. In this course is emphasised practical work with materials, tools and techniques, and help develop handicraft skills. It is preserved traditional handicrafts and laid the foundation for insight into and understanding of the special qualities of materials used by the wood boat builders.

- **Wooden boat builders** (Trebåtbyggjar) - Studieforbundet kultur og tradisjon and Forbundet KYSTEN - 2 years + 2 internship in a company. Wooden boat builders are a series of courses that emphasize practical work with materials, tools and techniques. The training shall contribute to protecting the traditional craft and lay the foundation for insight into and understanding of the peculiarities of the material use of the wooden boat builder. The course series is built around different topics and divided into 9 courses. The course will be held in three different places; Hardanger vessel protection center in Norheimsund, Museet Kystens Arv in Stadsbygd and Risør Trebåtbyggeri in Risør.

- **Boat builder** (Båtbygger) - Plus-skolen – 2 years. The program subject includes the manufacture of boats in wood and composite, as well as the assembly of equipment and parts. This includes the use of old and new techniques and the development of knowledge and skills in the use of tools, machines and equipment. The program subject also includes knowledge of production processes, competitive production, price and cost calculations. The program subject deals with the choice of shape of boat building products, choice of materials and components, and development of technical solutions based on quality, function and physical conditions.

- **Boat building** (Båtbygging) - Fosen Folkehøgskole – 9 months. Students will learn to fell a tree, mill it into boards, then shape those boards into a boat using the techniques taught by one generation to another. They will be able to participate in the whole process, from felling trees in the woods to build a boat.

- **Wooden boat building course** - Utdanning.no - 2 years + 2 years of apprentice. This course help to protect the traditional craft and lay the foundation for insight into and understanding of the peculiarities of the material use of the wooden boat builder.



**BELGIUM (NORTH SEA)**

In Belgium, Education is the responsibility of the linguistic Communities and is therefore organised in a decentralised way. One important aspect of education in Belgium is the principle of freedom in education. Secondary school is divided into four general types (one is Vocational Secondary Education with specialisation as carpentry). Each type consists of a set of different directions that may vary from school to school.

It was found 4 training courses – all of them from Hout- et Meubilerings College and in Dutch. Training courses found in Belgium and the institutions, duration and description:

- **Cabinet maker / (ship) interior builder** - Hout- et Meubilerings College – 2 years. They will work in a furniture workshop, furniture factory or a (ship) interior construction company. They could make furniture, such as chairs, cabinets and beds, but also interior components such as wall and ceiling finishes for homes / commercial buildings or ships. They will work with drawings in order to analyse with which hand tools or woodworking machines they could produce the furniture and from which material.

- **Enterprising furniture maker / (ship) interior builder** - Hout- et Meubilerings College – 4 years. They will be responsible for the purchase of materials and the entire process of designing, constructing, preparing and making furniture and paneling. Students will be capable of coordinating the activities, taking care of the time planning and managing the operational staff. They will learn how to work with wood and other modern materials

- **Work planner furniture industry / (ship) interior builder** - Hout- et Meubilerings College – 3 years. Students will learn everything about preparing for work and activities in the context of this profession. They will learn to find out what the most suitable solution is in different situations and communicate with suppliers and customers. They will work with interior of ships.

- **Work planner furniture industry / (ship) interior builder (instantaneous water heaters)** - Hout- et Meubilerings College – between 1 and 2 years. Really similar to the previous one.



## NETHERLAND (NORTH SEA)

In Netherland it was found 6 courses, one of them are online. Training courses found in Netherland and the institutions, duration and description:

- **Level 2 - Ship interior builder** - HMC vocational school for wood, furniture and interior – 4 years. After this training, learners will be able to work as a furniture designer, carpenter, wooden yacht and boat builder, furniture (antique) restorer, (ship interior) builder, musical instrument maker, CAD draughtsman, set designer, construction restorer, work planner, entrepreneur, manager or assistant manager

- **Work planner furniture industry/(ship) interior construction** - ROC Midden Nederland - 2-3 years. Students will be involved from the beginning to the finish in the construction of large objects made of wood and other materials for companies, luxury yachts.

- **Furniture maker/(ship's) interior builder** – Alfa College Groningen - 4 years. They will learn (among other things) to work in the construction of ship interior with wood – including design, use of machines.

- **The online Yachtbuilding MIWB** – NHL Stenden Hogeschool - Flexible. The course program consists of 3 separate sub-courses and each partial course consists of 4 to 5 lessons.

- **Bachelor of Science degree. Maritime Engineering / Shipbuilding** - STC Maritime & Logistics University of applied sciences. The training is built up on the basis of the apprenticeship lines Ship Production, Hydromechanics, Maritime Mechanics and Ship Construction

- **The annual course in craft boat building** – ABC Amersfoort – 1 year. This is a full-time annual course of four and a half days (36 hours) per week. In consultation, the course can also be followed part-time or in modules. There is the possibility to follow an extra module in epoxy construction.



## **GERMANY (NORTH SEA and BALTIC SEA)**

In Germany it is important to mention, the dual VET system, with two components: classroom study in specialised schools and universities and supervised, on-the-job work experience. Over the course of two to four years, apprentices and students spend a couple of days a week, or even blocks of several weeks at a time, at a vocational school (Berufsschule) or at university where they obtain theoretical knowledge for their occupation of choice. At the same time, a company or public sector institution hosts the apprentices and students where they gain practical knowledge and hands-on experience. The novices usually spend 60 percent of their time in the workplace under supervision of a certified trainer, and 40 percent in the classroom. was found 6, interesting boat builders in the field of new construction.

It was found 6 interesting boat builders' courses in the field of new construction. Those courses and the institutions, duration and description are:

- **Boat builders in the field of new construction, extension and conversion** - Bildungszentrum für Holzberufe / Eine Marke der Jugend in Arbeit gGmbH - 28 months full-time (40 units / week). 480 hours. Students will learn how to handle different materials such as wood, composites and metal. They will also learn how to understand construction drawings and then build or restore boats. Additional internships in other companies in the industry complete their training. All is based on

real orders of the economy and offers high performance standards that are oriented to the requirements of the labour market.

- **School for boat** - Berufsschule der Hwk Lübeck – 3 years and a half. The training takes place at the shipyard and vocational school. The professional handling of materials such as wood, fibre-reinforced plastics, resins, light and heavy metals and surface coatings requires a high level of knowledge and skills from boat builders. Creative thinking, work discipline and perseverance, flexibility, good spatial recognition and technical understanding are among the important characteristics of a good boat builder. The installation of machinery and propulsion systems, the professional assembly of pipelines, tank systems and electrical cables, the setting up of rigs, the putting into service and winterization of boats complete the field of activity of a boat builder.

- **Shipbuilding and marine technology** - University Bremen – 7 semesters. They have an agreement with a company in order to implement the practical part.

- **Master of Science. Naval Architecture and Ocean Engineering** - Technical University of Berlin - Faculty of Traffic and Machine Systems – 4 semesters. Learners will study ships and marine engineering structures which are complex systems that are subject to many technical, ecological and economic factors.

- **Bachelor of Engineering (B.Eng.) / Shipbuilder** - The technical university of Hamburg – 10 semesters. The four-semester basic study period consists of courses that impart basic knowledge in mathematics and natural sciences (approx. 30%), general engineering (approx. 25%), mechanical engineering (approx. 25%) and shipbuilding (approx. 20%). They are the only German university to offer an independent bachelor's programme in shipbuilding, which introduces students to the "ship" system at an early stage.

- **Bachelor of Engineering (B.Eng.) / Shipbuilding and Maritime Engineering** - Kiel University of Applied Sciences – 6 semesters. It is made in the dual system with a 12 weeks internship.



## UKRAINE (BALKAN AND BLACK SEA)

Ukraine's vocational education and training (VET) system comprises both initial vocational education and training (IVET) and continuing vocational education and training (CVET) components. The VET system in Ukraine is structured into two levels according to the students' knowledge and skills: "Skilled Worker" (1-5 years of training) and "junior specialist" (2-3 years of training).

In Ukraine it was found 4 training courses related with shipwright, with a master in shipwright and shipbuilder course of more than 4000 hours. Those courses and the institutions, duration and description are:

- Compiler of hulls of metal vessels category 1-6 (Складальник корпусів металевих суден) - State Educational Institution Kherson Professional Shipbuilding College – 369 -599 hours depending on the category. They will learn to perform assembly of flat small-sized sections from carbon and low-alloy steels. Make drilling, welding, perform electric trapping, thermal cutting and pneumatic cutting. Perform work during assembly, installation, dismantling and repair of flat large sections, flat sections, curved and asymmetrical T-shaped units of the set; install cheekbones, braces, saturation parts, etc. under the direction of the assembler of hulls of metal vessels of higher qualification.

- Small shipbuilding: design, construction and repair of small ships and yachts of various types (Refresher course) - National University of Shipbuilding named after Admiral Makarov – 4 months. It is included small shipbuilding with design, construction and repair of small ships and yachts of various types

- Master in Shipwright - Odesa National Maritime University and The Admiral Makarov National University of Shipbuilding in Mykolaiv - Bachelor 4 years; Master 16 months. It is included design, construct, manufacture, install, operate, maintain facilities, phenomena and processes in the field of shipbuilding in accordance with the specialization using the principles and methods of mechanical engineering, high-level mathematical apparatus.

- Shipbuilder - State Higher Educational Institution Mykolaiv Polytechnical College - 4230 - 4400 hours. Students will learn to perform assembly of flat small-sized sections from carbon and low-alloy steels. Make drilling, welding, perform electric trapping, thermal cutting and pneumatic cutting. Perform work during assembly, installation, dismantling and repair of flat large sections, flat sections, curved and asymmetrical T-shaped units of the set; install cheekbones, braces, saturation parts, etc. under the direction of the assembler of hulls of metal vessels of higher qualification.



## **ITALY (INTERMEDITERRANEAN and ISLANDS)**

In Italy, the term vocational education and training identifies specific paths that are formulated by the regions and the autonomous provinces. Vocational education and training is available at secondary, post- secondary or higher levels in formal or non-formal education and training. VET is aimed at young people and adults and can be provided by a school or by a public or private company or body. VET in Italy also includes technical and professional institutions. But, also, in Italy there are Technical and professional training courses (offered by technical institutes), three-year and four-year courses of VET and Post-secondary high school technical training

In Italy, it was found 11 training courses related with skills of shipwright. It is really interesting Italian courses because it was obtained a lot of information, including units.

Some of the most important training courses found in Italy and the institutions, duration and description:

- **Allievo Maestro D'Ascia del diporto** - Ismef - Istituto Mediterraneo di Formazione – 500 hours. The shipwright is the title that enables the construction and repair of wooden hulls up to 150 gross tons. The work of the shipbuilder follows that one of the naval designers. The course aims at all those who want to learn how to build and repair wooden hulls.

- **Bachelor in Naval Architecture and Marine Engineering** - Università degli studi di Trieste – 3 years. This Bachelor's Degree Course in Naval Architecture and Marine Engineering was founded in 1943 and it is integrated into the cultural and industrial fabric both regional and national. Today the Degree Course is included in the educational offer of the Department of Engineering and Architecture. The Bachelor's Degree Course in Naval Architecture and Marine Engineering aims to train the professional figure of the Naval Architect and Marine Engineer, and represents the 1st level of a training course that is completed with the Master's Degree in Naval Architecture and Marine Engineering. They will acquire specific professional knowledge in the field of Naval Architecture, Ship Construction, and Marine Engineering;

- **“Costruttore Navale”** - Istituto Nautico Gioeni Trabia (Palermo) and also in all Nautical school in Italy - 1056 hours each year, 5 years. The course relates to the construction and the naval maintenance and acquisition of professionalism in the field of certification of suitability the use of the medium itself.

- **Ship construction course** - BCA DEMNCO – 3 weekends. The course is practical and it consists in the construction of one or more boats (depending on the number of participants) carried out by the students under the guidance of instructors. The aim of the course is to teach participants the simplest techniques for building small wooden boats. The course is also aimed at novice builders and no specific experience or knowledge is required.

- **Ship design** - BCA DEMNCO - 5 days. The course covers the design process of a boat, with theory and practical exercises in which students, under the guidance of qualified instructors, will realize a boat project by defining its parameters and characteristics. Given the complexity of the subject, the course cannot provide all the knowledge necessary to design a boat but aims to offer a complete overview of all the problems faced by the nautical architect in the design process.

Other courses that it was found in Italy: **The design of the hull shape through the half model** (“Storie di barche” Association), **Ingegneria Nautica** (Università di Genova), **L’arte del bozzello** (“Storie di barche” Association), **Master in Yacht Design** (Quasar Institute for Advanced Design), **Yacht Design** (Polidesign – Politecnico di Milano).





## **CROATIA (BALKAN AND BLACK SEA)**

Vocational education and training in Croatia is divided into different path, initial vocational education and adult learning/continuing training for adults. The responsibility for VET is of the Ministry of Science, Education and Sports. The VET system in Croatia has the role of preparing students for labour market entry and it also enables transition to tertiary education, primarily through four-year VET programmes. Adult education and training in Croatia cover a broad range of options, mainly in the form of short (re)training programmes, which range from basic or technical skills courses to complete formal secondary education and training.

In Croatia, 2 courses were found related with shipwright., naval architecture and naval construction. Those courses and the institutions, duration and description are:

- **Naval Construction** - Faculty of Mechanical Engineering and Naval Architecture (FSB) of the University of Zagreb – 11 semesters. The study of shipbuilding at the Faculty of Mechanical Engineering and Naval Architecture (FSB) of the University of Zagreb is adapted for the training of master shipbuilding engineers of general profile who will be trained to work in modern production, to manage it and to develop and improve it, applying the latest scientific research. are trained to work on ship establishment and construction, construction and organization technology, classification and supervision experts, shipbuilding, management, maintenance and operation of the ship.

- **Naval Architecture** - Mechanical Engineering Faculty – University of Rijeka. Today the successful and well-established studies in naval architecture have, over the last decades, evolved into several developmental stages of teaching and scientific research activities, primarily relying on the Department of Naval Architecture and Ocean Engineering, even though classes in naval architectural studies with the relevant faculties are included in virtually all the Faculty's departments.



## **MONTENEGRO (BALKAN AND BLACK SEA)**

The educational system of Montenegro is regulated by its Ministry of Education and Science. Its structure consists of a pre-higher education system and a higher education system. The curricula in both structures is adopted by the Minister of Education and Science with prior approval of the Education Council, and in accordance with a government policy of providing citizens with equal rights to

acquire high quality education. According to current laws, the Montenegrin education system has two types of qualifications: educational level qualifications and professional qualifications.

In Montenegro, 2 courses were found related with the objective of this project. Those courses and the institutions, duration and description are:

- **Marine Engineering Cadet** – Srednja pomorska škola Kotor – 4 years. Practical studies are implemented on simulators for nautical programs, and in especially equipped workshops with machines for processing of metal and finally through navigation on board the school ship Jadran.

- **Nautical cadet** - Srednja pomorska škola Kotor – 4 years. Really similar to the previous one.

## **POLAND (BALTIC SEA)**

Vocational education in Poland is based on two types of school: basic vocational schools (BVS) and technical upper secondary schools. After that Polytechnics and Universities are higher vocational education colleges awarding vocational diplomas after 3 ½ or 4 years of study for the 1st bachelor's degree. Finally, adult education is carried out in school and extracurricular in schools for adults, centres of continuing education, practical and vocational training centers, as well as postgraduate studies. At the same time, within the limits of the system of training of the unemployed and looking for work, vocational courses are organized for example in labour offices.

In Poland, 6 courses were found related with shipwright, naval architecture or naval construction. Those courses and the institutions, duration and description are:

- **Shipwright – Carpenter** (Szkutnik stolarz cieśla) – EVENEA – 30 hours. During the workshop, the participant learns about the history of inland fishing on the Bug, but above all with the techniques of building boats used by craftsmen in the production of traditional boats. The organizers provide experience of the hardships of the boatman's craft work, using simple tools and natural means to build a boat

- **Shipwright** (Szkutnik) - Vocational school – 3 years. Students will be prepared for performing professional tasks like making elements of boats and yachts, assembling structural elements, installations, accessories and equipment for boats and yachts, performing maintenance and repair works of boats and yachts.

- **Shipwright – laminator** (Szkutnik) - District Job Centre - Vocational Activation Center Węgorzewo Poland – 250 hours. It is aimed at Long-term unemployed people and they learn subjects like health and safety; building, yacht maintenance and repair; work technology carpentry and mechanical; material technology chemicals used in boatbuilding; repairs, repair of motor boats and yachts - of laminate, wooden and steel; reconstruction, building of boats and yachts

according to the client's wishes; renovations, refreshing the interior and exterior of yachts and boats; renovations and making new decks; preparing units for the season.

- **Plastic mold worker in the boatbuilding industry** (Formierz tworzyw sztucznych w przemyśle szkutniczym) - Warmińsko–Mazurski Zakład; Doskonalenia Zawodowego w Olsztynie; Warmian-Masurian Vocational Training Institution – 60 hours. The training is addressed to people employed in the production of plastic yachts. The purpose of the training is to improve practical skills in the field of and operation of machinery and equipment for the construction of yachts and plastic equipment components

- **Yacht and boat monter (shipwright)** (Monter Jachtów i Łodzi) - Vocational and Lifelong Learning Center No. 1 Gdańsk; Centrum Kształcenia Zawodowego i Ustawicznego Nr 1 w Gdańsku – 60 hours. They learn how to deal with the interior construction of sailing and motor yachts, raising the standard (installation of new equipment) and reparation of interiors and hulls

- **Yacht Construction** (Budowa jachtów)- West Pomeranian University of Technology in Szczecin, Faculty of Maritime Technology and Transport – 7 semesters. The study is an offer addressed to people who want to acquire, supplement or develop knowledge and skills related to the design and construction of yachts and sports units.



## **FINLAND (BALTIC SEA)**

In Finland, Vocational education and training is designed to lead directly to a job or higher studies. Horizontal mobility is possible at any point along the pathway. Finland is aiming to achieve excellence in the development of vocational skills. Flexibility and individualisation have become means to respond to changing labour market requirements. Studies in upper secondary VET are based on individual study plans, comprising both compulsory and optional modules. Apprenticeships are available to young people from the age of 15. They lead to the same qualifications as training in a school and the diplomas awarded are identical.

In Finland, 2 courses were found related with the topic of the project. Those courses and the institutions, duration and description are:

- Further Vocational Qualification in the Boat-building Industry (Veneenrakennusalan ammattitutkinnon perusteet) - An education provider with an authorisation to provide education and award qualifications granted by the Ministry of Education and Culture. In this course, the vocational skills required for completing the modules are demonstrated by performing practical tasks in authentic situations and work processes (demonstration of knowledge and skills).

- Specialist Vocational Qualification in the Boat-building Industry (Veneenrakennusalan erikoisammattitutkinto) - An education provider with an

authorisation to provide education and award qualifications granted by the Ministry of Education and Culture – 47 weeks. Students of this course will have the vocational skills to work in the various stages of boat-building in boatyards, dockyards for small boats, or in boat repair shops. Those who have chosen the competence area of working in a supervisory role in the boat sector will have a strong command of the norms of boat technology and the boat industry enabling them to act in a supervisory role in the boat sector.



### **ESTONIA (BALTIC SEA)**

In Estonia, the system is decentralised and, due to its relatively small size, also flexible. Responsibilities are clearly divided between the State, local governments and schools. National curricula are based on learning outcomes. Teachers can choose teaching methods and materials. Most VET is provided at upper secondary and post-secondary levels. VET programmes are also available for learners without completed basic education.

In Estonia, 3 courses were found related with the topic of the project. Those courses and the institutions, duration and description are:

- Boatbuilder (Composite Boat) - Kuressaare Ametikool (Kuressaare Regional Training Centre) – 3 years. They will learn about Specialist terminology: vocabulary used in instructions, manuals and work orders, the basics of boat-building, types, properties and uses of composite materials, technologies used in production with composite materials.

- Boatbuilder (Metal Boat) - Kuressaare Ametikool (Kuressaare Regional Training Centre) – 3 years. It is similar to previous one but including electrical engineering and mechanics and technologies related with metals and those materials.

- Boatbuilder - Kuressaare Ametikool (Kuressaare Regional Training Centre) – 3 years. They will learn how to build, shape and assemble boats, yachts, cutters and other watercraft (pleasure craft) with a maximum hull length of 24 metres and supply them with their interior and gear.



## LITHUANIA (BALTIC SEA)

In Lithuania, there are different levels inside VET programmes, in order to obtain different qualifications, including skilled worker or the possibility of continuing studies in higher education, because in Lithuania Higher education is either vocational or academic. Apprenticeships are relatively rare.

In Lithuania, 3 courses were found related with the topic of the project. Those courses and the institutions, duration and description are:

- Ship hull assembler - Legal entity with licence to provide formal vocational training programmes – 3 years: It is a Qualified worker's Diploma. The object of this course is to learn about the production of ship hulls and superstructures. A person who has acquired a ship hull assembler qualification, is able to work as an assembler in various ship building and repair companies, metal construction companies, to engage in individual activities. A person's work is based on technical documentation; they will use tools, devices and equipment for the production of parts, for the assembly of constructions and hull formation on the shipway.

- Ship systems and equipment installer - Legal entity with licence to provide formal vocational training programmes – 3 years: It is a Qualified worker's Diploma. Students are learning different competences like preparing the workplace for metalworking performing; selecting structural elements for installation of onboard and deck equipment; installing ship systems on board.

- Ship's electrician - Legal entity with licence to provide formal vocational training programmes – 3 years: It is a Qualified worker's Diploma. Students are learning different competences like knowing the structure and equipment of the ship; take appropriate action in the event of emergencies and accidents; use electrical equipment in a safely way; follow security plans; maintenance and reparation of ship.



## GREECE (BALKAN AND BLACK SEA and ISLANDS)

VET was established in 1992 in Greece at the post-secondary education level, that is not part of higher education. Completing it does not allow access to courses at level 6 of the NQF/EQF and ISCED classification.

In Greece it was found one training course - Technician of Marine Engines and Pleasure Boats, with 3000 hours. The information of this training course with the institutions, duration and description:



- Technician of Marine Engines and Pleasure Boats - Public and Private IEK – 3000 hours. After this course, it is obtained a certificate of professional training according to the program approved by the EOPPEP which in turn aims to ensure by trainees their professional skills, which enable him to work as a skilled worker, able to perform independently, responsibly and on time the work that arises during the construction, repair or maintenance of marine engines and yachts. After this course, learners will be able to know the conditions under which all mechanical and shipbuilding works are carried out; to know basic concepts of electricity and electronics; to know the basic structures of a yacht construction industry, to read mechanical, electrical, electronic and shipbuilding drawings or to use properly the tools, instruments and devices required for the maintenance and repair of the yacht engine, as well as the boat facilities.



## **BULGARIA (BALKAN AND BLACK SEA)**

In Bulgaria it was found one training course - Technology of Ship repair, with 3000 hours. The information of this training course with the institutions, duration and description:

- Technology of Ship repair – Naval Academy – 4 + 1 semester of internship or apprenticeship. The objective in this course is forming in its trainees the necessary knowledge and applicable skills, which will meet the demand for qualified personnel in this topic.

For different reasons, it was not found training studies in Slovenia, Latvia, Bosnia, Rep. Cyprus, Turkey and Albania.

Finally, it is considered that this document is really useful to understand the different training studies about shipwright or to obtain related skills in Europe currently. It was made a big effort to compile all this data due to the difficulty of consulting some resources in some countries. This information will be useful for the design of training course for shipwrights.

