

# APPROVAL OF ROMANIAN MET SYSTEM BY EMSA

*Eugen Barsan*

Assoc. Prof. Dr.  
Head of Navigation Simulation Complex  
Constantza Maritime University  
Mircea cel Batrin Street 104, Constantza 900663  
Romania  
Email: ebirsan@internav.com  
Tel: + 40 241 664740  
Fax: + 40 241 617260

**Abstract** In 2003, the European Maritime Safety Agency (EMSA) started an ambitious campaign for evaluation and assessment of the maritime education and training system in non EU countries that are supplying officers for the European Union (EU) merchant fleet. In other words, EMSA has started his own investigation in order to build an EU White list.

Theoretically, in accordance with the EMSA policy, the evaluation and assessment process of the national MET system should only be focused on the STCW 95 provisions and requirements. Practically it implied more than that, not in terms of curricula but regarding the quality management of the MET process. The STCW Convention or the IMO MSC Committee had no provisions regarding the implementation of a quality management system (QMS) for the MET system. In Romania, universities will have to implement a special QMS model by the end of 2006.

After the EMSA inspection, we congratulated ourselves that The Constantza Maritime University (CMU) had voluntarily adopted the ISO 9000 QMS under BV certification 3 years ago. We think that in the absence of an already functioning QMS, it would had been very difficult to meet the EMSA standards.

**Keywords** maritime; education; assessment; EMSA; QMS

## 0 Introduction—the European Commission directives

After the oil tanker “Erika” disaster (1999) the European Commission (EC) made the legal framework (Regulation (EC) N° 1406/2002) for the creation of the European Maritime Safety Agency (EMSA). The main role of EMSA is to provide technical and scientific advice to the Commission in the field of maritime safety and prevention of pollution by ships in the continuous process of updating and developing new legislation, monitoring its implementation and evaluating the effectiveness of the measures in place.

Year after year, the control of EMSA over EU member state maritime authorities was increased and the Agency involved in strengthening of the Port State Control regime, auditing of the Community-recognized classification societies, development of a common methodology for the investigation of maritime accidents and the establishment of a Community vessel traffic monitoring and information system.

In 2001, the European Parliament and the European Council adopted the directive 2001/25/EC regarding the minimum level of training for seafarers. The directive 2001/25/EC represents recognition of the IMO STCW 95 Convention and all member states had to comply with these convention requirements, in terms of seafarers training and certification<sup>[1]</sup>. Furthermore, EC expand EU maritime legislation and accordance with the provisions of regulation (EC) N° 1406/2002 of 27 June 2002, article 2(b), EMSA was tasked to assist the European Commission in any task assigned to it by existing and future Community legislation<sup>[2]</sup> in the “training, certification and watchkeeping of ships crews” in member states. In 2003, a new adopted directive (2003/103/EC) introduced a centralized and harmonized procedure for community-wide recognition of certificates issued by third countries which comply with the STCW Convention. Based on this directive, the European Commission, assisted by EMSA, will carry an assessment of the 3rd countries’ or the 3rd areas’ maritime education, training and certification systems. The term “3rd country” refers at non EU member states which provide seafarers for the EU member states fleets.

If the EMSA assessment of the 3rd country MET and certification systems is positive, then the EC recommends to EU member states recognition of a third country system. Member states can recognize it for 5 years without further submission to the Commission. The assessment process will be resumed at least every 5 years<sup>[3]</sup>.

Because EMSA has limited human resources, they could not undertake more than 10 assessments per year, but the process could be very slow for countries that have many maritime training institutions. EMSA officials have to assess all the maritime education and training institutions from one country, including the national maritime authority system for certification of seafarers.

## 1 EMSA evaluation methodology for MET

In order to achieve the target of 10 assessments/year, EMSA had established a scoring system for the 3rd countries or the 3rd areas, in order to establish a priority list<sup>[3]</sup>. The scoring system is based on the following criteria:

- how important the third country is in terms of officers working in EU registered ships?
- how important it is regarding officers certified in that third country and employed in the world fleet?
- have cases of fraudulent certification been identified?
- how many Port State Control (PSC) deficiencies concerning STCW have been detected in ships registered in that third country?
- are there complaints on the level of training and/or on certification procedures?

- how extensive has the previous assessment been?
- how complex to carry out is an on-site visit?

In accordance with the above criteria, the first half of the hierarchy for the 3rd countries or the 3rd areas scrutinized by EMSA is shown in Table 1.

Table 1 Hierarchy for the 3rd countries or the 3rd areas scrutinized by EMSA

1. Philippines	10. Croatia	19. Iran
2. Turkey	11. Pakistan	20. Singapore
3. Ukraine	12. Bulgaria	21. Brazil
4. Indonesia	13. Romania	22. Vietnam
5. Russia	14. Malaysia	23. Australia
6. P.R. China	15. Myanmar	24. Hong Kong, P.R. China
7. India	16. South Korea	25. USA
8. Georgia	17. Senegal	26. Cuba
9. Egypt	18. Jamaica	27. Serbia & Montenegro

We have to remember that EMSA is interested only by the countries that are non EU members and that are delivering seafarers on EU states flag ships.

The methodology used by EMSA for assessing the national MET systems has the following stages:

- definition of the reference system
- the assessment process
- in-office study of documentation
- on-site visit
- elaboration and publication of the assessment report and final Conclusion.

The external pressure applied to the National MET system and the output controlled and assessed by the National Maritime Authority is summarized in Fig. 1.

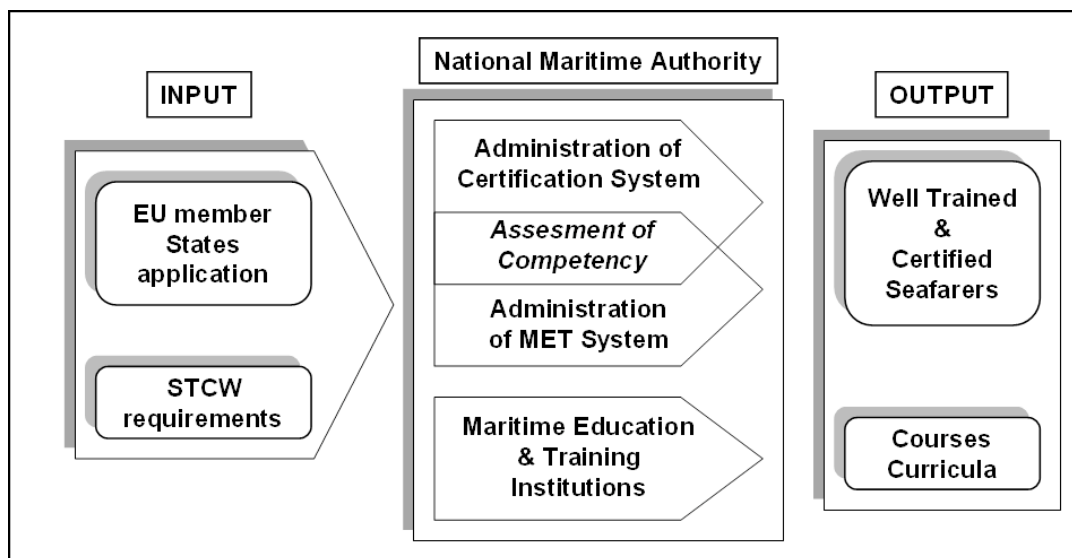


Fig. 1 National MET and Certification system

### 1.1 The reference system

The reference system used by EMSA for comparing the achievements of the national MET system is the STCW 95 Convention, including up-to-date amendments. The main provisions of the Convention, verified by EMSA are contained in Regulations and Code A and chapters 1 to 8. Starting from these requirements, a step by step analysis is undertaken for the following items (in brackets are the Reference at STCW articles and regulations):

- (1) Quality Processes–*Plan, Do, Check, Act*-(R I/8)
- (2) Qualification and Training of instructors, supervisors and assessors  
(R I/6, R I/8 & R I/12)
- (3) Issuance & Endorsement (Art. VI & R I/9)
- (4) Format (R I/2)
- (5) Medical standards (R I/9)
- (6) Registration (R I/9)
- (7) Consultation by others States (R I/9)
- (8) Prevention of Fraud (R I/5)
- (9) On-board Training Validation (R II/1 to 4 and R III/1 to 4)
- (10) Assessment of competence (R I/6)
- (11) Recognition (R I/10)
- (12) Revalidation (R I/11)
- (13) Equivalentents (Art. IX)

- (14) Dispensation (Art. VIII)
- (15) Courses and Programs Approval (R I/6 & R I/8)
- (16) Monitoring of Maritime Training Institutions (R I/6 & R I/8)
- (17) Quality Processes–Plan, Do, Check, Act-(R I/8)
- (18) Staff Qualifications and Training (R I/6, R I/8 & R I/12)
- (19) Trainees' Recruitment (R I/8)
- (20) Training Monitoring and Supervising (R I/6 & R I/8)
- (21) Training Facilities (R I/6 & R I/8)
- (22) Use of Simulators (R I/6 & R I/12)
- (23) Examination Process (R I/6 & R I/8)
- (24) Issuance of document of evidence (R I/6 & R I/8)
- (25) Course Review and Approval Process (R I/8)
- (26) Governmental Monitoring (R I/6 & R/8)

The national Maritime Authority of the 3rd party states must submit to EMSA all explanatory documentation for the above mentioned items, in order to assess the implementation of the STCW provisions in the maritime national legislation. For the beginning, maritime universities will have to prepare and provide English documentation for items 9, 10, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26. For nations that do not have English as native language, translation in English of all that papers represents a very difficult and time consuming task. Some of these documents (9, 15, 18, 19, 21, 23) must be prepared in the first place, because they will be submitted in an electronic format to the EMSA headquarters. The practical importance of this type of evaluation is underlined in Fig. 2.

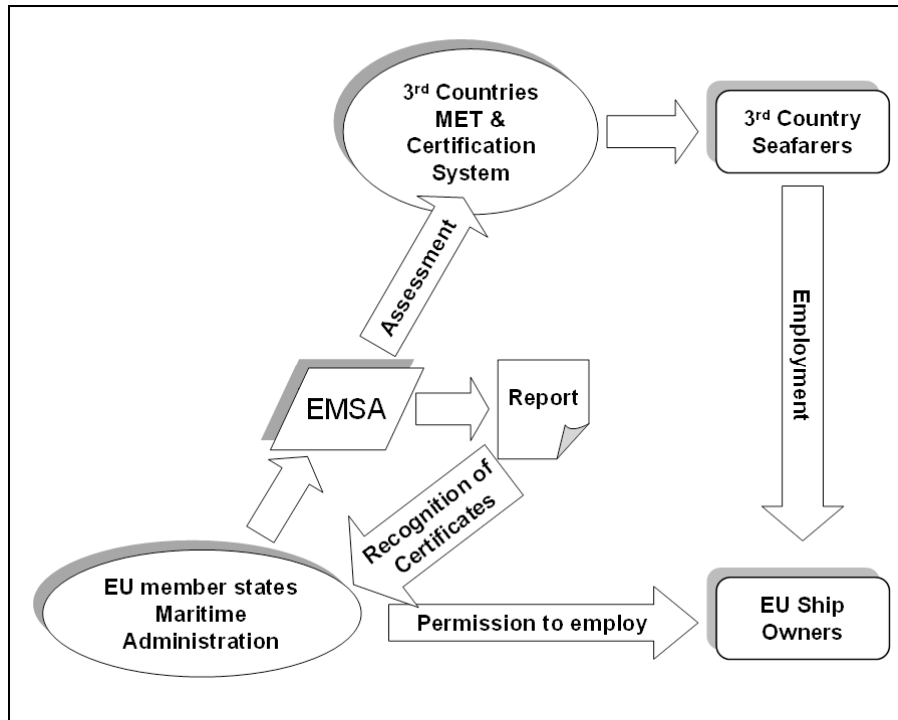


Fig. 2 Implications of the EMSA assesment

EMSA is interested in the training and certification system for all categories of seafarers, and each type of MET institution has to provide documentations for the specific level (ranks) of seafarers trained in the institution<sup>[4]</sup>. For maritime universities, the correlation between STCW and education curricula refers mainly to the operational level for 3rd officers' deck and engineers.

## 1.2 In-office Study of Documents

A schematic representation of the assessment steps undertaken by EMSA are shown in Fig. 3. After the National Maritime Administration (NMA) was notified about the starting of the assessment for the respective country, the NMA must prepare and transmit to EMSA all the required and available documents and documentation. NMA will contact all maritime education institutions in order to collect essential documents, as curricula and courses syllabus. For this stage, documentation will be in electronic format.

Communication between the NMA and EMSA must be very efficient, in order to supply all the documents asked by EMSA and to provide answers and clarifications regarding possible misunderstandings in the interpretation of documents.

The in-office study of received documents is a very important stage in the evaluation process, because it represents the first contact made by the EMSA officials with the 3rd country national MET and certification system<sup>[5]</sup>. In these circumstances, a well organized folder and easy to read documents (including a very good English translation) are essential for a smooth beginning of the assessment process.

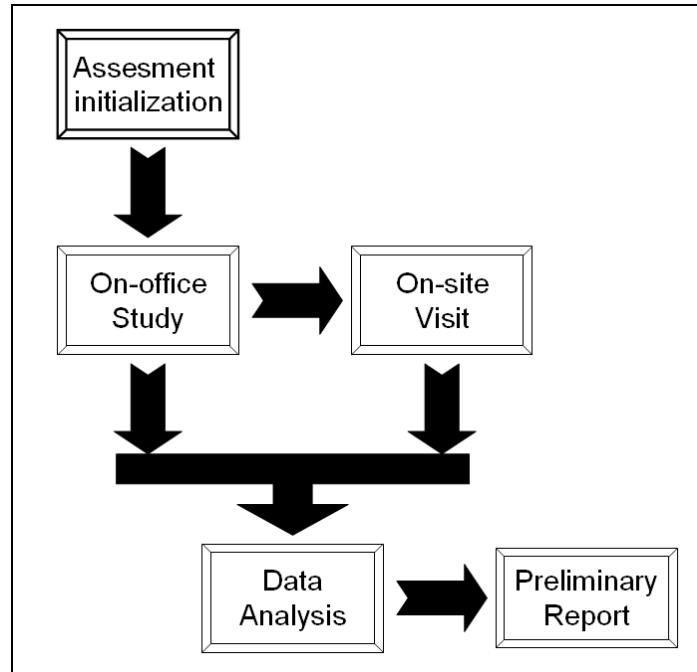


Fig. 3 EMSA assessment process

From the point of view of the maritime universities, all internal regulations and quality manuals must be translated in English in order to be made available for EMSA consultation. It is a huge amount of work that must be done in a very short time (usually 2 weeks). Universities that already have these documents translated in English are fortunate, but they must take care to update the information contained in these pages if necessary.

Supplementary documents or explanations for the already transmitted documents are asked by EMSA through the NMA<sup>[6]</sup>. You have to remember that the NMA will collect information regarding: trainees' recruitment, training facilities, examination process, education curricula, courses and programs approval, teaching staff qualifications and training, on-board training from all over the country's maritime education and training institutions. It will be better if most of these documents will have a uniform format and will contain as many standardized procedures as possible. From this point of view, the most sensitive aspects are related to: duration of studies, contents of the curricula, duration of sea training period, standards for qualification of the teaching staff.

Regarding this last aspect, we have to underline that EMSA is interested only in the courses that are strictly related with the set of knowledge and competencies required by the STCW<sup>[7]</sup>. In accordance with these objectives, there will be a distinction between the teaching staff that teaches general knowledge courses (e.g. mathematics, physics, chemistry, computers) and the teachers involved in dedicated maritime knowledge courses (navigation, cargo work, maritime safety, communications, ISM, etc.). For example, the graduates of our university are awarded with an engineering diploma in maritime transport at the end of the faculty. In order to obtain a technical engineering diploma, in accordance with the Romanian higher education curricula, in the first year of study, all technical universities must have a package of similar courses, including: mathematical analysis, algebra, differentials & analytic geometry, physics, mechanics, chemistry,

study & technology of materials, machine design, electrotechnology, electrical measurements, electronical devices & circuits. These type of disciplines, including courses syllabus, accreditation and teachers qualification and professional experience are ignored during the EMSA assesment.

## 2 On-site assessment procedures

It is obvious that for the national Maritime Authority personal and for the universities' staff, the most stressing part of the EMSA evaluation process is the on-site inspection. The duration of the EMSA visit is in accordance with the number of institutions that will be evaluated in that round. If the on-office study of documents was considered successful, than it is possible that the on-site time for assessment of one training institution to be maintained to 1 day. Otherwise, it is possible that for some of the education institutions, the time allotted for inspection to be extended to 2 or 3 days.

The EMSA team will have 3 members, each of them with different backgrounds, in order to cover all the STCW and quality management system (QMS) aspects. At least one of them will be very familiar with the deck department problems and another EMSA team member will be special trained for QMS certification. Usually, the third team member will be focused on the engineering department problems.

Before arrival of the team, a detailed schedule of the visit will be arranged with the NMA, and the maritime education institution will be notified about this schedule. Objectives of the visit will be also mentioned and they will cover the following topics:

Implementation and application of STCW Convention:

- Organization and methods
- Certification and courses
- Qualifications
- Equipment and facilities
- QMS procedures:
- Manual, documents and records
- Monitoring of processes
- Internal audit
- Corrective actions
- Management review

As we observe, the first part of the inspection will be dedicated to the study of the QMS documents, included Quality Manual, management of activities and resources, process monitoring and methods used for improving activities. The QMS procedures are also compared with the national education legislation and other internal rules and regulations of the university. On this stage, the representatives of the university (Rector, Vice-rector, Deans, Head of departments, QMS Director) are interviewed in order to assess their role and how the QMS provisions are put at work in the day by day education process<sup>[8]</sup>.



During these interviews it is very important that the managers of the university speak good English, in order to present their opinions as convincing as possible and to clearly understand the questions raised by EMSA representatives, in order to give pertinent and at the point answers. We will also recommend having available one or two English translators or teachers from the English language department. If you already know that some of the managers of your university are not good enough English speakers, presence of a translator is compulsory in order to ensure the communication flow between the EMSA officials and the university staff.

For this stage, one of the most important roles is played by the Director of the QMS department. If he is capable to answer the specific questions posed by EMSA, and to explain contents of the non translated documents, the impact over EMSA officials will be a positive one. The rules and procedures implied by a QMS are international, so you have to be prepared to meet the standards required by EMSA, from the moment you affirm that you have implemented such a system in the university.

The problem with the QMS assessment relies in the national education legislation. For example, in Romania, the implementation of a QMS in higher education institutions became compulsory only from 1st of January 2006. The QMS implemented in 2002 by our university is certified by Bureau Veritas and is an ISO 9001. This standard was voluntarily implemented by our university, as a consequence of the Senate decision to increase the quality standards for the education process<sup>[9]</sup>. We think that without this initiative and without 3 years of experience regarding handling the activities in accordance with the rules and procedures imposed by the quality management system, it would have been very difficult to meet the expectation of EMSA.

EMSA was also interested in the independent evaluations of the MET undertaken at national level. We had to explain how the universities are periodically evaluated at every 5 years by an external body (National Commission for Evaluation and Accreditation) and this evaluation is done in accordance with the national education law.

The Romanian Naval Authority (RNA) was very afraid about the EMSA inspection and it tried to be involved as low as possible in the monitoring and supervision of the MET in the Romanian maritime universities. RNA officials declared to EMSA representatives that in Romania there are no legal provisions giving such responsibilities to RNA and their involvement in the education process is limited to the final certification exams for the 3rd maritime deck and engineers officers. In other words, RNA acted cowardly, and let the maritime universities to handle the EMSA inspection by themselves.

In reality, RNA is approving year after year the MET curricula and the syllabus of the courses that create competencies required by STCW. More than that, all major decisions regarding changes and updates of the curricula, approval of sea training programs, etc. are made after consultations with RNA officials and in accordance with their requirements.

The lack of RNA support was obvious in the second part of the inspection, when EMSA moved to assess the education and training process related to STCW competencies. The education curricula and STCW related courses syllabus were already familiar to EMSA officials, so the second part of the inspection was focused mainly on the adequate qualification of teachers, use of simulators, methods of evaluation of students' competencies required by STCW Convention.

For the second part of the inspection, the EMSA team had split in two, each inspector being focused on his main field of expertise: deck or engineering department. At this stage, the training facilities were visited, with much time being spent at the simulators, including detailed discussions with the simulator instructors.

Our simulator instructors were questioned about the methods used for the design of scenarios and validation of scenarios in accordance with the STCW competencies that must be created to the students<sup>[10]</sup>. The documentation recording a detailed scenario description was also revised by the inspectors and for each scenario they asked about the evaluation or scoring system used to assess the performance of the students during the exercise. EMSA officials insisted very much on the aspect regarding a standard and uniform procedure that must be kept for all scenarios<sup>[7]</sup>, in order to monitor and assess the gradual achievement of knowledge by the students. EMSA had also quantified the number of hours spent by students on simulated exercises, and the courses that included in their curricula such type of modern training.

Practically, from the entire teaching staff, the simulator instructors were only once interviewed by EMSA and their positive answers and demonstration of best practice applied for the practical training of students using simulators was a very important aspect. The main simulators that had to be in the maritime universities portfolio are the ship handling simulator, the GMDSS simulator and the engine room simulator. From the EMSA point a view it is very important how a maritime training institution managed to integrate the simulators in the education process, because the STCW 95 emphasizes the use of simulators, and it is certain that in a near future, an update of the STCW Convention will make such type of training as compulsory.

Another stage of the second part of the inspection was focused on the compulsory IMO model courses. For these courses, identified in the education curricula, the EMSA officials verified courses syllabus, qualification of teachers and specific training facilities. Here, the inspectors observed that there were some differences between the syllabuses of the same IMO courses taught in different maritime training institutions. The recommendation was that for these standard courses, the teaching syllabus must be some no matter which training institution is delivering the IMO model course.

At the end of the day, a round table was organized with the participation of the EMSA team and all the top level personnel of the university. The EMSA representatives made a general overview of the inspections, underlining the good points and also commenting on the less good findings, but without pronouncing any final Conclusion. It is less important how good an individual institution has performed, because EMSA will make an assessment for the entire national maritime education system. That's why all the training institutions had to be as good as possible, in order to give a positive image of the entire MET in that country.

### 3 Conclusion

The EMSA evaluation of the 3rd country MET system could not be considered finished until the final report will be published. This report has the following main chapters:

- Overview of the MET and Certification systems
- General conclusion about compliance

- Description of the non compliances
- Improvement opportunities

This report will be sent by EMSA to the European Commission (EC) and the EC will notify the inspected country about the conclusion of the assessment. In accordance with the report conclusion, seafarers from the inspected country will be allowed for employment on the EU flag ships<sup>[11]</sup>.

Until now, the most part of the former inspections (for the 3rd countries or the 3rd areas located among the first 10 in the EC list—see Table 1) were done by teams sent by the Directorate General for Energy and Transport (DG TREN). In 2004 this task was commissioned to EMSA, so the 5 year renewal assessment will be undertaken by EMSA, following the procedures described in the previous chapters of this paper.

In accordance with our experience, the key points that must be taken into account in order to have a successful inspection are:

- a maritime education curricula of at least 3 years of study;
- fully coverage during training of the competencies required by the STCW 95 (including after 1995 updates and supplementary requirements);
- an QMS (for example ISO 9000) for the educational process, implemented in the university;
- a QMS specialist that also has to be a very good English speaker, in order to explain the content of the documents that are not translated in English and some of the procedures;
- modern training facilities that have to include at least a Radar Simulator (preferable a Ship handling Simulator) and a GMDSS Simulator;
- qualified instructors for simulator training (in accordance with IMO recommendations for simulator instructors);
- a good evidence (records) of the training undertaken with the use of simulators (objectives, scenarios, number of hours/student, etc.);
- above average English speakers among the teaching staff, in order to give documented answers during the interview with the EMSA inspectors;
- a clearly and well organized folder with the electronic documents that must be submitted beforehand to the EMSA office;
- a support staff able to translate in short time in English all the required documents (including internal regulations and national education general provisions);
- capacity of high level managers (rector, vice-rector, deans, head of departments) to assume possible mistakes or nonconformities.

The cooperation with the national Maritime Authority (NMA) and the implication of this institution in the organization of this visit are also very important. The NMA could also assume some of the lapses and declare that it will monitor the accomplishment of these unfinished tasks. A statement like that will be considered by EMSA and thus some of the report remarks could be avoided in this manner. The NMA implication will also certify that there is a constant supervision of the maritime training process from the most authorized national institution<sup>[12]</sup>. Such an attitude

will be positively appreciated by EMSA.

We hope that our paper has offered some useful hints to the maritime universities that will be inspected in the near future by EMSA and our practical advises will help other IAMU member institution to successfully pass the EMSA assessment.

## Reference

- [1] European Parliament. Directive 2001/25/Ec. Official Journal of the European Communities. Brussels: 2001.
- [2] European Commission. Regulation (EC) N 1406/2002. Brussels: 2002.
- [3] European Maritime Safety Agency (EMSA), 2004, Work Programme 2005, EMSA, Brussels.
- [4] European Maritime Safety Agency (EMSA), 2005, Work Programme 2006, EMSA, Brussels.
- [5] European Maritime Safety Agency (EMSA),2005. <http://www.emsa.europa.eu/>.
- [6] European Commission-DG for Energy and Transport. A New Step Forward for Maritime Safety in Europe. Brussels: 2005.
- [7] European Commission. Employment, Social and Training Aspects of Maritime and Fishing Industries and Related Sectors. Brussels: 2005.
- [8] Mistry V, Usherwood B. Total Quality Management-British Standard Accreditation. Information Research, 2006 (1): 3.
- [9] Welsh J F, Dey S. Quality Measurement and Quality Assurance in Higher Education, Quality Assurance in Education, MCB UP Ltd, 2002(ISSN: 0968-4883).
- [10] Bârsan E. Seafarers' Integration on the Maritime Jobs Market, 4th General Assambly of International Association of Maritime Universities. Alexandria, Egypt: Proceedings of the IAMU AGA 4, 2003.
- [11] European Commission, Maritime Facts and Figures, 2005, Brussels.
- [12] Bârsan E. Free Access to Information in the Maritime Education Sector-Internation Symposium "E-COMM-LINE 2002"-Bucharest. Published in One eEurope & eEurope, 2002 (ISBN 973-0-02436, Ed. Ecas Trade, Bucureşti).