



IAMU 2011 Research Project
(No. 2011-4)

**A Feasibility Study on the Establishment
of an IAMU Accreditation Scheme: Phase II
(ACCREDIMET-II)**

By
World Maritime University (WMU)

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A Feasibility Study on the Establishment of an IAMU Accreditation Scheme, Phase II (ACCREDIMET-II)

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Abstract This report deals with the results of the second phase of the feasibility study on the establishment of an IAMU accreditation scheme, which mainly focus on practical aspects for the implementation of the accreditation scheme within the IAMU member institutions. Based on the discussion of the theoretical framework of the accreditation, practical implementation of a peer assessment visit are proposed according to the results and experience of the pilot study visit to one of the IAMU member institutions.

Keyword: *Academic accreditation, Maritime Education and Training, Quality assurance in higher education, Maritime university*

1. Introduction

At the end of the final report on the first phase of the feasibility study on the establishment of an IAMU accreditation scheme (ACCREDIMET), the project team concluded that the second phase of ACCREDIMET would be needed for further development of the feasibility study. [Nakazawa, T., et al. 2011] In order for the project team to develop the second phase of the study appropriately, the team members noted that the following statements obtained from respondents to the questionnaire conducted in the first phase of the study should be considered seriously for the development of the project:

- A number of respondents are not satisfied with the current accreditation and quality assurance systems in place, which are mostly based on the ISO 9001 standard. Most, however, consider accreditation arising from auditing as a useful procedure which should not be questioned;
- It seems highly reasonable to direct further developments toward a quality improvement system, i.e. an accreditation procedure that will focus more on the curricula and the methods of teaching, i.e. study programmes rather than institutions and the related organizational issues; and
- Too many standards or too rigid standards may seriously restrict creativity, both among teachers and among students. Therefore, “whatever accreditation system is to be proposed, it should provide sufficient room for cultural differences in general and for introducing and sharing common methods of teaching in IAMU member-countries. As a result, the various methods applicable in different countries are expected to instigate unleashing of inventiveness, creativity and mobility among students and instructors of the IAMU member-institutions“.

It is therefore concluded that it should be stated that auditing, within the wider framework of quality evaluation of MET institutions and programmes of study, may be highly useful and contribute significantly to the quality of MET, improving the competitiveness of MET institutions and meeting the requirements of the main stakeholders: shipping industry, maritime administrations, and education and training institutions. Furthermore, some practical aspects such as the development of accreditation principles and human resources within the IAMU body should also be clarified to achieve the comprehensive objective for this 2-years’ project which is to assess potential for establishing an accreditation system for academic programmes provided by IAMU member institutions.

The activities and proceedings for the research project are shown in Table 1 and the minutes of the meetings and the power point files of the research presentations made and the paper published during the term of the project in 2011 are attached as Appendices A, B and C, respectively.

Table 1 Research activities and proceedings of ACCREDIMET II in 2011

Activity	Date/period	Venue	Members being involved
Kick-off meeting (1 st)	12 – 14 June	Gdynia	TN, BP & DZ
Research presentation I	14 June	Gdynia	DZ (speaker)
Kick-off meeting (2 nd)	23 – 25 June	Malmo	TN and BB
2 nd meeting	28 Sept – 1 Oct.	Opatija	TN, DZ, BP, BB & VF
Research Presentation II	29 Sept.	Opatija	BB (speaker)
Pilot study visit	9 – 12 Nov.	Terschelling	TN, DZ, VF and BB

2. Framework of the accreditation scheme

2.1 General theoretical framework

The tradition of auditing the quality systems and assessment of education programmes has a long history but it reached momentum in 1990s, especially in the EU countries (Germany, the Netherlands, Sweden, Finland, UK, etc.). It soon became trans-national by the introduction of transnational accreditation systems. First audits were carried out by government agencies but soon external audits

were entrusted to independent agencies and semi-governmental organisations (e.g. in the Scandinavian countries and ABET in US, ENQA in EU etc.). The agencies perform quality audits, evaluation of subjects/disciplines and programmes, accreditation of institutions and subjects. They derive their authority from the Government, but operate independently and reach decisions after a quality assessment by way of audits and other forms of evaluation. The term “quality assurance” as a super-ordinate concept normally includes processes such as evaluation, accreditation and audit. The agencies evaluate learning outcomes in higher education through audits of study programmes on the basis of pre- set methods and criteria.

An audit is usually understood as a process and result of evaluation of a person, organization, system, process, enterprise, project or product. It equally applies to business firms (originally: financial audit) as well as to public or budgeted organisations such as MET institutions.

It is an “evaluation of the strengths and weaknesses of the quality mechanisms established by an institution itself to continuously monitor and improve the activities and services of either a subject, a programme, the whole institution or a theme“. [www.enqa.eu/files/procedures.pdf]

The system of auditing in higher education depends on the conceptual framework on which to base the approach to standards and quality in higher education. These include:

- outcomes or the products of institutions of higher education;
- institutions or the structures that perform higher educational activities;
- goals or the purposes, intentions, and objectives of higher education;
- people or the individuals and groups of individuals involved in the activities of institutions of higher education;
- activities or the characteristic, goal-seeking functions of people in institutions of higher education; and
- environments or the settings wherein institutions of higher education pursue their goals.

On the theoretical level, any auditing system in higher education invariably covers all or some of the above standards. For a more detailed discussion of these issues see “Standards and Quality in Higher Education”. [Brennan, S. (1997)]

In this project we are however more interested in the practical guidelines for evaluating study programmes at institutions of higher education and vocational training institutions in higher education, where most of maritime education and training is offered today. Therefore, as far as MET systems are concerned, the theoretical and practical framework for MET programmes of study can be based on numerous sources but we will limit ourselves to the following:

- Guidelines for quality and/or environmental management systems auditing [ISO 19011. (2002)]
- ABET accreditation through auditing
- ABET12-A004 - ACCREDITATION POLICY AND PROCEDURE,
- ABET12-E001 - CRITERIA FOR ACCREDITING ENGINEERING PROGRAMMES ;
- ABET12-E003 - ABET SELF-STUDY
- ENQA auditing
- QA5 - Quality procedures in European Higher Education,
- QA6 – Transnational European Evaluation Project Methodological Reflections and
- ENQA14 - Quality Procedures in the European Higher Education Area and Beyond – Second ENQA Survey
- The results of research in ACCREDIMET Phase I and experience from previous audit visits in evaluating MET programmes of study.

Under the Guidelines for quality and/or environmental management systems auditing (ISO 19011), First edition 2002, the concept “audit“ is defined as:

“systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled“

The definition is somewhat circular as one must first look up the terms “audit criteria“(a set of policies, procedures or requirements) and “audit evidence“(records, statements of fact or other information, which are relevant to the audit criteria and verifiable) for a complete understanding of the concept. Nevertheless, the three attributes of auditing: 'systematic', 'independent' and 'documented', are equally important in the process of evaluating an MET institution or its programmes of study, which is also the objective of the second phase of ACCREDIMET.

Generally speaking, both as an element and the result of the process of quality assurance, accreditation can be looked upon as a form of evaluation that assesses the extent to which a programme or an institution meets standards set by the programme of studies or the institution itself and whether a programme or an institution meets certain external standards or requirements. Some of the key issues, of course, are as follows:

- Who sets the standards for accreditation?
- Do the (MET) institutions have common interests to set up any form of accreditation scheme or accreditation-like practice?
- Who should accreditation be entrusted to?

Audits may be external and internal. External audits may be a part of quality assurance procedures which cover a wide spectrum of processes designed to monitor, maintain and enhance quality. “In principle, quality assurance serves two main purposes: enhancement and accountability. Internal quality assurance naturally focuses on the enhancement of quality in teaching and learning, while external quality assurance, at its best, both serves the needs for accountability of institutions to stakeholders and the wider public, and plays a developmental role for enhancing quality in institutions“ [<http://www.enqa.eu>]

As shown above, in most auditing systems, two types of audits are also conducted in accordance with ISO 19011:

- “Internal audits (or first-party audits), conducted by, or on behalf of, the organization itself for management review and other internal purposes), and may form the basis for an organization's self-declaration of conformity. In many cases, particularly in smaller organizations, independence can be demonstrated by the freedom from responsibility for the activity being audited, and
- External audits include those generally termed second- and third-party audits. Second-party audits are conducted by parties having an interest in the organization, such as customers, or by other persons on their behalf. Third-party audits are conducted by external, independent auditing organizations, such as those providing registration or certification of conformity to the requirements of ISO 9001 or ISO 14001.“

One wonders if, and to what extent, the above definition is equally applicable to corporate business (for which it is basically designed) and to higher education and training.

Internal audits are mandatory today with all MET institutions and they are conducted on the national level by national educational authorities on the one hand and professional organisations such as registers of shipping on the other. These are based on the self-assessment report (self-study) by the institution and are NOT the subject of this project study, which deliberately undertook to carry out an external audit as a method of evaluating MET study programmes. Most MET institutions worldwide, and certainly IAMU member institutions, are now highly experienced in this kind of accreditation procedures and auditing or audit visits as a part of the procedure.

It is important to note at this point that instead of the term “audit“ the project team decided that, for the purpose of evaluating MET institutions within IAMU, the term “peer assessment“ would be much

more appropriate as it is expected that IAMU member-institutions would be more appreciative of a less obliging approach to external evaluation. Therefore, instead of the term “audit“ and “auditor“, the terms “peer assessment“ and “evaluators“ will be used throughout the rest of the text of this report.

In view of the above theoretical considerations, for the purpose of this project the following definition of the peer assessment of and MET programme or institution is adopted:

*“a method for evaluating the strengths and weaknesses of the quality assurance mechanisms, adopted by an institution for its own use in order to continuously monitor and improve the activities and services of a subject, a programme, the whole institution, or a theme“.*¹

Therefore, the main objective in quality auditing is how does an institution know that the standards and objectives the institution has set for itself as a goal are being met.

2.2 Quality in education and standards of work

Almost all accepted definitions of the term “accreditation” rely on two keywords: “quality” and “standard”. Both these terms are used with many very differing meanings, not only in ordinary life, but even in academic circles as well as in the industry and other related areas. Therefore, it is necessary to clarify these terms and to define their meanings as they relate to maritime education and training.

2.2.1 Quality in education

Quality is a perceptual, conditional and somewhat subjective attribute and may be understood differently by different people. In most cases it is defined as the non-inferiority or superiority of something.

Quality in maritime education and training is being evaluated throughout the world. Quality is being measured in some way or another for the purposes of assessments carried out usually by national educational and/or maritime authorities. However, it appears that far too often, quality assessment and quality assurance processes have started by determining how quality is to be assessed or reviewed rather than by asking what it is. As a consequence the indicators used to measure the quality are equally different.

In most general form the meaning of the term “quality” can be grouped into five discrete but interrelated concepts: as something exceptional, as perfection or consistency, as fitness for purpose, as value for money, and as an indicator of ability to transform.

Quality as exceptional is very traditional notion of quality. It assumes a high level of excellence, usually approved by comparing the actual status with more or less arbitrary selected and/or defined standards, if any. Quality is not determined through an objective assessment of what is provided but is based on an assumption that the distinctiveness (and sometime inaccessibility) is proof of itself of “quality”.

Quality as perfection or consistency is usually used in industrial activities. It is defined as an output of an activity that produces zero (or almost zero) defects. The most well know definition of the quality following this concept is the “Six Sigma” approach (“Number of defects per million opportunities.”). It embodies a philosophy of prevention rather than inspection. The focus is on ensuring that, at each stage, faults do not occur, rather than relying on final inspection to identify defects.

In close relation to the concept is so-called “quality culture” i.e. the social environment that guaranties (inasmuch as it can be reasonable guaranteed) that certain complex system (mostly those involving significant human involvement) will progress to expected state. A central feature of such organizations is that each team member (or a team as whole) is both a customer of, and supplier to, other workers in the organization: they form a chain of internal customers and suppliers. It is the responsibility of each

¹ Quality procedures in European Higher Education, An ENQA survey. <http://www.enqa.eu/files/procedures.pdf>

unit to ensure the quality of their own work. The emphasis is on ensuring that things are “done right” first time. When they are not, then the process that has led to an unsatisfactory output is analysed so that corrections can be made in the process to ensure that the problem does not arise again. In a quality culture system, the need to check final output should not exist. As a consequence each team member tries to shift responsibility away from those involved at each stage. In maritime-related activities the concept has been even more narrowed down to only those activities related to safety and so we induced “safety culture” as a quality paradigm.

Quality as fitness for purpose is usually accepted in judging not-so-sophisticated products or services. In most cases the basis for comparison is clearly set up and comparison itself can be easily carried out. In many cases fitness for purposes is further simplified and quality is checked only against customer specifications. And if these specifications are satisfied the fitness is considered proved. In more complex cases the fitness for purpose cannot be easily determined and more indirect methods have to be implemented. The usual approach is a combination of prescribed working procedures (quality assurance procedures) and regular verification of the customer satisfaction.

In shipping industry the quality assurance approach and requirement to develop respective procedures are a basis for implementation of the ISM system on board ships while the same, in combination with mandatory customer satisfaction verification, is the most notable part of the ISO 9000 quality assurance system.

It is worth to note that such approach, when implemented in MET institutions, clearly requires an institution to define who the customer is. And in education it is not always easy to do: the customer can be the student (the primary beneficiary), the shipping industry (the second beneficiary), government (if it provides funding) or local society².

Quality as value for money approach is based on the assumption that quality is a ratio of two values of which the denominator is usually a common value. The value for money approach requires that final outcome be compared with input required to achieve it. In most cases the input is expressed in monetary units but it can also be expressed in other suitable unit, such as man-hours, required energy, etc. The highest quality is reached when the best ratio is attained. In educational institutions, including those in MET field, the value for money approach is getting popularity, especially in countries where MET institutions are financed from public sources. In those cases the requirements to use public funds with utmost care, even to adjust the outcomes to available funding is considered as an obligation of the MET institution management and is the most important part of the concept of the accountability of public institutions.

In complex systems, especially those including significant human influence, the quality is described using a list of performance indicators, selected in such manner as to cover all important areas. In those cases the success of value for money approach heavily depends on selected indicators.

Finally, *quality as transformation* is an approach that can be used in systems where no clear line between supplier, producer and end-user exists. The education, being a participative process, is a fine example of such activity: students are not product, customers, consumers, service users nor clients - they are participants. And they are transformed during education. As a consequence, higher ability to transform participants the process has, the higher quality to that process is attributed. For example, a high-quality institution would be one that greatly enhances its students. Besides enhancing, in those processes the participants are significantly involved in the process itself. For example, students are today more than often invited to comment the quality of the teaching received. And in many cases the term quality is not precisely defined. As a consequence, they are in position to significantly change the process itself with limited understanding and responsibilities for their actions.

² The DNV Standard 3.401 clearly states that „The maritime academy shall define their customers. The maritime academy's customers are typically students, ship managers and authorities.”

It is worthwhile to note that all five aspects of quality mentioned above (indicated in bold face) are present at higher MET institutions worldwide. Some are inherent to educational process itself and some are “imported” from the shipping industry as a highly regulated industry.

2.2.2 Standards of work

The second most important concept in accreditation process is “standard”. As a word, “standard” has several meanings. It is used when one wants to emphasize the excellence (high standard) as well as when one refers to average or arbitrary selected circumstances or sequence (for example, standard procedure). In education, the term “standard” is equally elusive but usually refers to following areas of activity:

- Academic standards;
- Standards of competence;
- Service standards.³

Academic standards measure ability to meet specified levels of academic attainment. In relation to teaching and learning, this refers to the ability of students to fulfill the requirements of the programme of study, through whatever mode of assessment is required. This usually requires demonstration of knowledge and understanding, sometimes even to high-level skills and competencies. Implicitly, some other skills are also assessed, such as communication skills. Sometimes 'higher level' skills, such as analysis, comprehension, interpretation, synthesis and critique are explicitly assessed. In essence, standards relate to the development of domain expertise. A single level of attainment may be set (pass or fail) or a graded set of levels identified, against which to measure “degree of excellence”.

Academic standards follow mostly the “quality as transformation” approach and as such in many cases the requirements emanating from accepted academic standard are not formalized. Academic standards are usually assigned to basic science subjects such as mathematics and physics.

Standards of competence measure specified levels of ability on a range of competencies. Competences may include general transferable skills required by employers and skills required for induction in to a profession. Standards of competence are more often assessed in terms of threshold minimums than degrees of excellence. Obtaining a professional qualification, for example, involves conforming to minimum standards of professional competence.

Standards of competences require the acquisition of those skills and understanding which are required for doing specific jobs. Successful learning signifies fitness for purpose; one first identifies the requirements of the job and then specifies the competency standards that enable person to do the job. The competences, revealed in the undertaking of standardised, job related tasks, constitute the standards.

Standards of competence may be stated or inferred as part of taught course objectives. They may be an implicit part of the expectations of competences to be achieved by research students. Standards of competence begins to overlap with academic standards, when higher-level skills and abilities are explicitly identified as intrinsic to competence, as in professional education, where, for example, reflection and critique may be an element in the attainment of an award, i.e. distinction between academic standards and standards of competence is, to some extent, pragmatic. For some definitions of quality, such as the “exceptional” approach, the distinction between academic standard and standard of competence is more pronounced than, for example, in the transformative approach.

In MET institutions standards of competences are widely introduced by 1995 amendments to the STCW convention. The Convention is in its entirety a competence-based system of standards with clearly defined competencies, knowledge, understanding and proficiency, methods for demonstrating competence and criteria for evaluating competence. It can be stated that Convention, at least when

³ These standards taken together are in the following text referred as „standards of work“.

higher MET institutions in traditional maritime countries are in question, caused a shift from “quality as transformation” approach to more “quality as fitness for purpose” approach.

Service standards are measures devised to assess certain elements of the service or facilities provided by higher education institutions. The service standards are usually based on the assumed level of quality, mostly defined through “value for money” approach. In many cases those concerned with service standards follow “contractual” benchmarks specifying minimum levels of service. Such standards may include turnaround times for assessing student work, maximum class size, frequency of personal tutorials, availability of information on complaints, time-lag on introducing recommended reading into libraries, and so on. Benchmarks tend to be quantifiable and restricted to measurable items, including the presence or absence of an element of service a facility. Measurements of “customer satisfaction” are frequently used as indicators of service provision quality. Thus, service standards in higher education parallel consumer standards.

In MET some of the service standards are already internationalized. For example, the formal standard prepared by DNV dealing with maritime simulators is de facto internationally accepted standard.

It is important to emphasize that all three types of standards, as described in above paragraphs, are highly interrelated to the implemented concept of quality, and taken together should form a coherent system of principles and norms applicable at an institution.

2.2.3 Quality and accreditation as a process

Education process carried out in the higher MET institutions (university level or post-secondary level, as understood by the IAMU) is in each and every case based on assumed concept of quality as they are defined in the first part of this chapter. In certain cases it is possible to have a “mixture” of concepts when institution tries to follow different concepts in different parts of particular curricula. For example, such mixture exists in study programmes where mathematic is delivered at high (university) level while other parts of the programme are confined to acquiring high-level skills and competences as required by the external sources (for example the STCW Convention).

When discussing the interrelation between the implemented concept of quality and accreditation process the most important issue is the question of the appropriateness of the selected concept of quality. The importance of the question is even higher when one considers that evaluators will try to implement the concept they are familiar with (or the concept they consider the most appropriate, based on their own experience). In many cases this process will go on unconsciously, and will be unnoticed by all participants.

In principle, the implemented concept of quality is (and should be) selected by the institution itself, and in line with institution’s primary goals.⁴ And primary goals of an institution are definitely out of reach for any evaluator. Consequently, one can conclude that no one evaluator should question the implemented concept of quality. Following the same line of reasoning, comments or questions during interviews that are related to the implemented concept of quality should be avoided.

The same applies to implemented standards. The standards implemented at particular institution are developed in line with assumed concept of quality and their own tradition. Therefore, standards that support and provide for the assumed concept of quality should not be questioned. However, if there is a standard implemented at the institution which is not in line with accepted concept of quality, or some rules and regulations prevent institution to reach its goals, or certain important parts of the standard are missing, the evaluators should clearly point out such inconsistency.

One particular issue should be considered with particular attention. The MET institutions, as well as related industry, function in highly globalized arena. Consequently, the accreditation process will involve evaluators from different countries, sometimes from very distant parts of the world. As such,

⁴ In many cases the implemented concept of quality can be more or less clearly recognized from officially published institutional mission (vision) or development strategy.

the evaluators have to take into account “the clash of cultures” that may take place during accreditation visits. Accordingly, evaluators should avoid any reference to norms or parts of standards that may be related to cultural aspects. Only exceptions are those cultural issues that directly prevent institution or its servants to fulfil the requirements of particular standard of competence clearly required and documented in institutional rules and regulations.

2.3 Principles of IAMU accreditation scheme

Following conclusions set up in the first phase of the project the more detailed principles of the IAMU accreditation scheme can be developed. All these principles should be considered as principles aiming to improve the academic programmes carried out at IAMU member institutions. However, when implementing the procedure an institution may depart from some of the principles developed here if it considers that such inconsistency in given circumstances is justified.

Relation to STCW

The accreditation process is designed primarily for institutions offering maritime-related programmes and satisfying the requirements of the STCW Convention and Codes, as amended. In addition, it is designed for institutions offering academic programmes at university level or equivalent. Following that line of reasoning, the IAMU accreditation scheme is designed to cover both BSc programmes as well as MSc programmes preparing students for shore management positions in shipping and related industries. Consequently, academic (teaching) standards referred to in the IAMU accreditation process are those commonly associated with university education.

Relation to other (non-maritime) study programmes

The member institution can extend the scope of the accreditation process to other non-maritime study programmes if it considers the accreditation process appropriate for the purpose. Following aforementioned, it should be pointed out that target subject of the IAMU accreditation scheme is a programme rather than institution as a whole - internal organization, technical support, and other organizational questions are not subject to accreditation process as long as they do not interfere with effectiveness of the particular study programme. Similarly, accreditation scheme is not designed for other areas of activity of the member institution (such as research activities or consultancy). Consequently, implementation of the accreditation scheme in these areas is not expected to create significant benefits for the member institution.

Relation to national accreditation schemes

The IAMU accreditation scheme is designed to be implemented in addition to any existing national accreditation scheme. Consequently, evaluators are expected to fully respect all requirements of the national accreditation programme. The same approach should be applied in respect to the national quality assurance system, if such system exists in particular country.

In respect to quality assurance procedures developed according to international standards (ISO 9000 or DNV Standards for Certification system) the evaluators are expected just to verify that implemented procedures do not interfere with overall goals of particular study programme. In all other cases they are expected not to refer to these systems.

Consequently, the IAMU accreditation scheme is not developed as replacement for any kind of internal or external procedures required by the quality assurance system, external examiners system or national accreditation system.

Participation

The IAMU accreditation scheme is developed assuming a voluntary participation of the member institutions. Participation in the accreditation scheme must be seen as an opportunity for the member institution to monitor and enhance the efficacy of its educational activities. More precisely, the accreditation scheme and resulting recommendations and suggestions should result in more balanced study programme, more efficient learning process, decreased drop-out rate, efficient use of resources and higher attractiveness among students.

Knowledge and experience exchange

The proposed IAMU accreditation scheme is carried out by the member institutions for the member institutions. The main objective of such accreditation is to improve the particular programme (in general) by effective exchange of knowledge and experience between evaluators and those being evaluated. Clearly, this implies that the highly expert evaluators from different institutions and with different expertise have to be selected for the job.

Workload prerequisites

The IAMU accreditation scheme is designed to be implemented in respect to the one or several study programmes as they are carried out at the time of study visit. Therefore, study visits should not create additional workload and should not require any preparatory work, especially documents (except what is already available on the web, in the existing documentation or otherwise). Additionally, in order to facilitate accreditation process to as many member institutions, financial load should be kept as low as possible. Consequently, there are no mandatory follow-up actions assumed. Accreditation process should not interfere with everyday activities in the institutions; if it does it should do that as low as possible.

Peer approach

The IAMU accreditation scheme is developed as a peer review process. Peer experts are delegated by the IAMU member institutions and should be internationally recognized experts in maritime education. During study visits they are expected to apply soft, “collegial” approach (contrary to formal approach that is assumed by those carrying out formal accreditations). Peer approach should lead to more emphasized sharing of knowledge and experience. In addition, such approach assumes much more extensive discussions and exchange of views on some topics than what is common in other, more formal assessments. The peer experts must be able to establish and maintain credibility in the accreditation context.

Outcomes

Accreditation as it is seen in this paper aims to improve the effectiveness of the study programme(s) at particular institution. In that sense, accreditation scheme should generate, not only the assessment of the present status of the programme, but also a number of recommendations and suggestions to accredited institution. However, decision to accept and implement any recommendation or suggestion is on the institution itself.

Relation to stakeholders

During the fact-finding activities as well as when considering the recommendations and suggestions, the evaluators should take into account the interest of all mayor stakeholders, as they are defined by the accredited institution. It is assumed that member institution maintains constant communication with mayor stakeholders as to ensure that their interests are properly understood and watched over.

Subject area relevance

The IAMU accreditation scheme is developed as to allow assignment of different priorities and importance to different educational activities. Therefore, evaluators are autonomous to decide which subject area has to have higher importance for the overall effectiveness of the study programme. When assigning different priorities evaluators should construct activities, descriptions, and judgments in ways that encourage participants to rediscover, reinterpret, or revise their understandings and behaviours.

Responsibility for consequences and influence

It is assumed that any action carried out during study visit or during fact-finding phase should be carried out in such manner that ensure proper understanding of reasons, scope and target outcomes. In that respect, evaluators are expected to clarify and specify the individual and cultural values underpinning purposes, processes, as well as resulting recommendations and suggestions. They should

promote responsible and adaptive use of fact and findings while guarding against unintended negative consequences and misuse.

Feasibility standards

The IAMU accreditation scheme is developed assuming the effective use of available resources in order to increase evaluation effectiveness and efficiency. Consequently, the effective project management is assumed. All procedures should be practical and responsive to the way the institution operates. Evaluators should use resources in line with rules and regulations in place at particular institution. Procedural shortcuts of any kind should be avoided.

Correctness

In particular, evaluators are expected to recognize, monitor, and balance the cultural and political views, interests and needs of individuals and groups. Actions should be designed and conducted to protect human and legal rights and maintain the dignity of participants and other stakeholders. If there is even the slightest possibility that any action of evaluators could be understood as politically, racially, sexually or in any other way inappropriate it must be avoided.

Evaluators are expected to report any previous dealings with accredited institution. If these dealings may be understood as a conflict of interests that may, in any way, compromise the evaluation, evaluators are expected to step out.

Clarity, fairness and transparency

During the fact-finding phase evaluators should communicate in clear, understandable and fair manner. They should provide complete descriptions of findings, limitations, and recommendations and suggestions to member institution, unless doing so would violate legal and propriety or any other obligations. If requested, evaluators are obliged to provide additional explanations for any recommendation or suggestion they made.

Reliability

Information collected should serve the intended purposes, support valid interpretations and be sufficiently dependable and consistent for the intended uses. It is assumed that standard set of questions is always used. However, minor departure from standard format is acceptable if justified and if presumed standards may be maintained.

Recommendations and suggestions should be justified in the cultures and contexts where they have consequences. All communications should have adequate scope and guard against misconceptions, biases, distortions, and errors.

2.4 Development of the procedure of creating an assessment team

The world's leading accreditation (and auditing) organisations in higher education (ABET, EU accrediting schemes. etc.) more or less implement or follow the ISO principles, procedures and methodology.

2.4.1 ABET accreditation and auditing

The purpose of ABET⁵ auditing is to organize and carry out a comprehensive process of accreditation of pertinent programmes leading to degrees, and assist academic institutions in planning their educational programmes. Auditing/accreditation of programmes encompass the programmes leading to degrees rather than institutions, departments, or degrees. Programme Criteria are based on the principle that the programme for accreditation must meet the appropriate criteria. However, some programmes may require specialization within a broader educational area. In such cases, in addition to the general criteria, the programme must satisfy the applicable programme criteria. ABET accreditation process is voluntary and preparations for Visit are only conducted on request by the training institution. Therefore institutions submit programmes without any pressure.

⁵ www.abet.org

For a complete understanding of the criteria for evaluation the following concepts are defined:

- Programme Educational Objectives –broad statements that describe the career and professional accomplishments that the programme is preparing graduates to achieve.
- Programme Outcomes – narrower statements that describe what students are expected to know and be able to do by the time of graduation, i.e. skills, knowledge and competences that students will acquire.
- Assessment – processes that identify, collect, and prepare data to evaluate the achievement of programme outcomes and programme educational objectives.
- Evaluation – determines the extent to which programme outcomes or programme educational objectives are achieved and suggests decisions and actions to improve the programme.

The purpose of ABET evaluations is to verify that the programme under review is in compliance with the appropriate accreditation criteria in both qualitative and quantitative terms. Evaluations are based on:

- Self-Study Report – the data on an institution’s educational programme submitted by the institution to ABET in the form of a Self-Study Report, which is initially evaluated by ABET. The Self- Study Report includes information about all programmes and off-campus offerings.
- On-site Visit – By way of supplementary activity, the Self-Study Report is followed by an on-site visit by a carefully selected team representing ABET. The purpose of the on-site visit is three-fold:
- It should assess factors that cannot be adequately described in the Self-Study Report. (“The intellectual atmosphere, the morale of the faculty and the students, the stability and continuity of the faculty and the students, the calibre of the staff and student body, and the outcome of the education offered as evidenced by the character of the work performed are examples of intangible qualitative factors that are difficult to document in a written statement“) [cf. ABET 12 E003 – Self-study report; <http://www.abet.org>]
- Before the visit, the institution provides a random selection of graduates’ transcripts from each of the programmes under evaluation.
- The visiting team should help the institution conduct its SWOT analysis, esp. its strong and weak points.

Furthermore, the audit team studies the material compiled by the institution relating to:

- Mission, auspices, control, and organization of the institution and of the college or division housing the programme
- Educational programmes offered and degrees conferred
- Maturity and stability of the institution and of the individual educational programmes
- Basis of and requirements for admission of students
- Number of students enrolled in both the college and divisions as a whole and in the individual educational programmes.
- Teaching staff and teaching loads.
- Physical facilities - the educational plant devoted to the educational programme.
- Finances - investments, expenditures, sources of income.
- Curricular content
- Representative samples of student work that reveal the spectrum of educational outcome.
- To make a qualitative evaluation of a programme, it is necessary that the institution exhibit teaching materials such as course outlines and textbooks for all courses required for graduation.

Upon the analysis the audit visitors' team draws up a Draft Statement to the institution. The institution will have an opportunity to submit a due process response to this draft statement. The draft statement is then revised prior to the final accreditation action. This revised statement is drawn up and is referred

to as the Final Statement to the institution. The resulting Final Statement will be submitted for review by the full membership of the appropriate Commission.

Programme of Study: Informatics

The statement to the institution generally includes views and observations in the form of the following statements:

- Statements of fact
- Statements of compliance
- Statements of concern
- Statements of weakness
- Statements of deficiency
- Statements of observation

The institution then has seven calendar days following the visit to provide corrections to the above statements.

Visit Team and Report

Each visiting team is selected, on the basis of the programmes to be considered, from lists of qualified evaluators provided by the ABET member societies. The team's factual findings are presented orally to the institution's chief executive officer and such faculty personnel as he or she wishes to assemble. Then the opportunity is offered for the correction of factual errors in the team's observations. The visiting team reports its preliminary findings and recommendations in writing to the officers of the appropriate Commission for editing and transmission to the institution visited.

Accreditation Actions

The final decision on accreditation rests with the appropriate Commission of ABET, which acts on the recommendations made to it by the visiting team and on consideration of the institution's response to the Draft Statement. Accreditation of a programme is normally granted for a specific period, usually two or six years. It is important to note here that ABET does not rank programmes. They are either accredited or not accredited. Accreditation actions indicate only the nature of the next review.

Public Release of Accreditation Information

Accreditation is based on satisfying minimum educational criteria. As a measure of quality, it assures only that an accredited programme satisfies the minimum standards. Public announcement of the accreditation action should only relate to the attainment of accredited status. Accreditation is specific to a programme and all statements on accreditation status must refer only to the programmes accredited.

Criteria for accrediting engineering programmes

These criteria are most similar to the ones applied to marine engineering programmes and are found in the ABET file named as ABET12-E001. [ABET website]. The criteria are divided into general criteria for BSc programmes, MSc programmes and criteria for specific programmes (e.g. Programme criteria for mechanical and similarly named engineering programmes).

General and MSc programme criteria consist of the following criteria:

- Students
- Programme Educational Objectives
- Programme Outcomes⁶

⁶ E.g. Engineering programmes must demonstrate that their students attain the following outcomes:

- (a) an ability to apply knowledge of mathematics, science, and engineering
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data
- (c) an ability to design a system, component, or process to meet desired needs within realistic
- (d) constraints such as economic, environmental, social, political, ethical, health and safety,
- (e) manufacturability, and sustainability
- (f) an ability to function on multidisciplinary teams

- Continuous Improvement
- Curriculum
- Faculty
- Facilities
- Support⁷
- Programme Criteria

2.4.2 Auditing within the ENQA network

The most common external quality procedures are evaluation and accreditation based on audit. Today audits are mainly conducted by independent agencies. Most agencies use programme-level procedures in their external quality assurance whereas institutional-level procedures are less commonly applied.

The European Network for Quality Assurance in Higher Education was established in 2000 to promote European co-operation in the field of quality assurance. In November 2004 the Network was transformed into the European Association for Quality Assurance in Higher Education (ENQA). The idea of networking, i.e. European co-operation in the area of quality assurance was given a strong support by the Bologna Declaration of 1999.

Under the Quality Procedures in the European Higher Education Area and Beyond – Second ENQA Survey (cf. QA14) the process of auditing covers the following elements:

- formulating terms of reference and protocol for the review;
- nomination and appointment of panel of experts;
- self-evaluation by the agency (non- or semi-governmental);
- site visit; and
- reporting.

Following ENQA procedural principles (e.g. EQANIE⁸ in the case of informatics) an accreditation procedure involves three stages: application, assessment, and decision.

Application: An institution submits an application to EQANIE's Secretariat containing relevant preliminary information in the form of the accreditation request and a brief outline of the curriculum. The preliminary information is examined by the Secretariat and the Accreditation Committee to establish the number of auditors required.

Assessment: The institution formalises the application for accreditation by signing an accreditation contract and compiles a self-assessment report in accordance with the guidelines / proposed structure. In the meantime, EQA/EQANIE assembles an audit team on the advice of the Accreditation Committee. The audit team visits the institution and conducts an audit of the institution. The audit usually takes a day and a half, or two or more days in the case of cluster procedures. Finally, EQANIE forwards the draft accreditation report to the applicant institution to check for factual errors.

Decision: The auditors provide the Accreditation Committee with a final assessment and recommended decision. EQANIE's Accreditation Committee makes a decision regarding the accreditation. The applicant institution of higher education is informed of the decision. The final

(g) an ability to identify, formulate, and solve engineering problems

(h) an understanding of professional and ethical responsibility

(i) an ability to communicate effectively

(j) the broad education necessary to understand the impact of engineering solutions in a global,

(k) economic, environmental, and societal context

⁷ Institutional support, financial resources, and constructive leadership must be adequate to assure the quality and continuity of the programme. Resources must be sufficient to attract, retain, and provide for the continued professional development of a well-qualified faculty. Resources also must be sufficient to acquire, maintain, and operate facilities and equipment appropriate for the programme. In addition, support personnel and institutional services must be adequate to meet programme needs.

⁸ EQANIE: the European Quality Assurance Network for Informatics Education

version of the accreditation report is sent to the institution of higher education. A list of accredited degrees is published on the internet.

Criteria for selecting auditors:

In the text below, based on EQANIE, an example of the criteria applied in selecting and appointing the audit team is shown. The audit team for a single accreditation is usually composed of 2 - 3 professors (academic faculty members) and 1 industry representative. The audit team should:

- be composed of members providing a specialist overview of the degree programme(s) evaluated
- be composed of members providing an overview of the interests of the parties affected by a specific course of study
- as a rule be composed of some auditors with accreditation experience and others who are new to the accreditation procedure.

Here are the EQANIE's principles for the nomination of auditors from academia, who should possess:

- proven specialist expertise
- proven experience in one of the disciplines of the field assessed (in our case: marine engineering, nautical studies, transport technology, communication, MET, etc.)
- accreditation or evaluation experience, didactic competences in higher education, experience of institution of higher education administration (former deans, and other university executives).

The ultimate choice of auditors must avoid any possibility of a conflict of the interests of the parties to the accreditation process. Furthermore, prior to the commencement of the audit, EQANIE or any other auditors must sign a confidentiality agreement and declaration of impartiality. The institution of higher education to be audited/accredited may request that auditors be replaced if there is evidence of possible bias.

It should be noted, finally, that the study/report on the Quality procedures in European Higher Education, An ENQA survey, ENQA Occasional Papers 5 [cf. <http://www.enqa.eu/files/procedures.pdf>] shows that the most common type of audit is institutional (28% regular usage ratio). Audit comes as only one of the methods used in European quality assurance. Institutional audit is used regularly by all the Irish and British agencies and some of the agencies in Nordic and associated countries. 11% of the agencies use institutional auditing occasionally, while 56% does not use it. Auditing of programme, subjects and themes is not very common in the European higher education area.

Final note:

A thorough study of auditing in higher education would not be complete if it did not include such issues as:

- drawing up an evaluator's / peer visitor's manual, and
- auditor/ peer visitor training

However, the study of these may be the subject of a possible third stage of the ACCREDIMET Project.

3. Pilot study for an accreditation visit

In order to put the theoretical knowledge discussed in the previous section into practice, the research team planned to organize a pilot study as the core activity of the second phase of ACCREDIMET. Since 18 out of 32 member institutions were positive to take part in such a pilot study as the result of the questionnaire conducted in the first phase of the study, the research team agreed to select a member institution from those member institutions with the following conditions:

- location of the institution is in the European area because of convenient to transportation for project members;
- staff members at the institution are familiar with the processes of accreditation visits; and
- the representative of the institution is cooperative in the objectives of the pilot study

After discussing with the member institutions that meet the conditions above, Maritime Institute Willem Barentsz in the Netherlands accepted to receive the research team to conduct the pilot study in November 2011.

3.1 Peer assessment visit to Maritime Institute Willem Barentsz (MIWB)

The MIWB is located in Terschelling, an island of the West Frisian Islands in the Netherlands and provides bachelor degree education for Maritime Officer (dual purpose officer) and Hydrography. The institute also has Maritime Simulator Training Centre (MSTC), which provides students and trainees with practical training programmes using a full mission ship simulator. Furthermore, the MIWB has been accredited by various professional and governmental authorities, both national and international, in order to ascertain that a continued high standard of quality is assured[MIWB website]:

- Dutch Ministry of Education for the full time Bachelor programmes
- Dutch Ministry of Transport for all maritime postgraduate STCW courses
- British Nautical Institute for Dynamic Positioning programmes and facilities
- Norwegian Det Norske Veritas for the Simulator Systems, Simulator Centre, Maritime Academy and certain courses.

As the main objective of the pilot study was to verify and propose a set of processes for an accreditation visit as the main part of the accreditation scheme to be established for IAMU member institutions, the research team defined this pilot study visit as “Peer assessment visit” instead of an audit visit and aimed at the BSc course for Maritime Officers. The schedule and activities during the visit to MIWB are shown as Appendix D.

3.2 Items to be assessed during a peer assessment visit

Based on the outcomes of the first phase of ACCREDIMET as well as the further discussions with research members, the following ten items were selected to assess an academic programme during a peer assessment visit, which covered the whole education process as it was carried out in majority of higher MET institutions in the world, including IAMU member institutions. To make interviews and data collection processes as easy as possible, a set of sub-items are also listed for each item listed below.

(1) Programme organisation and management

- a) Institution provides general information as well as information on programme history, options and concentrations, delivery modes and previous evaluation attempts.
- b) Mission of the institution and objectives of the programme are clearly presented to the students (both perspective students and those already enrolled).
- c) Study programs are in compliance with national and international applicable standards and requirements (formal proofs of compliance are presented to evaluators).
- d) Organizational structure of the programme is presented to the evaluators.
- e) System of monitoring faculty members and student performance is in place.
- f) Program funding is ensured and resources are available for all students to successfully graduate.

(2) Students

- a) Admission requirements are clearly stated and appropriate for the programme evaluated.
- b) Enrolment policy ensures appropriate student body structure.
- c) Expected study load and learning conditions are adequate for the programme evaluated.
- d) Programme includes significant development of critical thinking skills.
- e) Programme requires extensive student participation/involvement.

- f) Evaluation system of student performance is in place and appropriate for the programme goals.
- g) Programmes organization provides measures to minimize drop-out rates.
- h) Mentoring and advising system for underperformers is in place.
- i) Graduation requirements are clearly presented and procedures for graduation audits are in place.
- j) There are scholarship opportunities for at least certain group of students.
- k) There are possibilities for students' mobility and for transfer courses among different programmes.

(3) Curriculum

- a) Curriculum as a whole is appropriate and has requisite qualities for proclaimed educational objectives and learning outcomes.
- b) Curriculum suitably covers specific areas and their share in total credit load is appropriate.
- c) Required textbooks and other reference materials are appropriate and available.
- d) Course outlines and completed course work, projects and papers, tests and exams are appropriate for proclaimed educational objectives and learning outcomes.
- e) Curriculum contains courses dedicated to development of communication skills, including appropriate proficiency in English language.
- f) Curriculum contains general formative courses i.e. those dedicated to understanding of global, economic, cultural and societal issues.
- g) There are mandatory courses dedicated to develop teamwork skills.

(4) Teaching process

- a) Teaching modes are appropriately distributed among front-end lecturing, use of simulators and practical laboratories and exercises.
- b) Modern techniques (multimedia devices, internet-based education, information services) are available and appropriate for the proclaimed educational objectives and learning outcomes.

(5) Study process and student workload

- a) Distribution between classroom teaching and after hours studying is appropriate.
- b) Academic calendar is appropriate and does not negatively impact student performance.
- c) Appropriate facilities for studying are available and suitable for intended purpose.

(6) Faculty and support personnel

- a) Composition, size, educational credentials and experience of faculty members and support personnel are appropriate for the accredited programme.
- b) There is sufficient number of academic staff holding appropriate academic degrees.
- c) Student/lecturer ratio is appropriate for the available facilities and in line with proclaimed educational objectives and learning outcomes.
- d) Average on-board experience of academic staff and other personnel is appropriate for the accredited programme.
- e) The system of selection, promotion and retention of academic staff is in place.
- f) Measures for encouraging and ensuring professional development of academic staff are in place.
- g) There are appropriate level of interactions between academic staff and students.

(7) Professional training and internships

- a) The number and level of responsibility of certificates of competence awarded to the students are appropriate for the proclaimed educational objectives and learning outcomes and in line with on-board experience acquired during education at the institution.
- b) The system for monitoring professional training on board is in place (for institutions that issue CoCs).

(8) Facilities and resources

- a) Classrooms, laboratories and simulators correspond to the programme requirements.
- b) Institutional support and resources required for maintaining day-to-day education process are appropriate.
- c) Library and other learning-related support facilities are appropriate.
- d) Student support facilities (campus, playing grounds, supplies, cultural facilities) are appropriate.

(9) Program objectives and stakeholders involvement

- a) Stakeholders' participation in programme revision and further development is timely, well-organized and appropriate.
- b) The system to respond to stakeholders' feedback is in place.
- c) The system to track students' employment history and personal development is in place.

(10) Continuing education

- a) The institution provides opportunities for graduated students to continue their education, either at the institution or at other universities, and to get academic degrees.
- b) The institution provides opportunities for graduated students to obtain additional professional certificates (STCW) or other professional competencies.

3.3 Process proposed for a peer assessment visit

A peer assessment visit is carried out on demand and has the principal objective to identify weaknesses and shortcomings of a maritime programme and to provide recommendations for the programme improvement. The entire process of an assessment visit consists of three distinct stages:

- Peer assessment visit preparation
- Implementation of peer assessment visit
- After-visit stage: final report and results

3.3.1 Peer assessment visit preparation

Organisation of an assessment team

The first step for a peer assessment visit is to organise an assessment team.

- Selecting or assigning the lead evaluator;
- Setting the dates for the evaluation visit;
- Selecting team members
- Obtaining institutional approval of the visiting team

Visit agenda and itinerary

Visit agenda is a product of a combined effort of the lead evaluator, evaluators and the contact person at the institution to be visited. The agenda should include the transportation component, team organization, living and working conditions, meeting outlines and interview procedures. It has to also include the working time for the team and preparation of reports.

Worksheets for evaluators

Two workbook type documents are suggested to be used in the peer assessment process. One worksheet might be useful on the pre-visit stage when the general information related to the programme is collected and analyzed. The Appendix E contains the suggested format.

Another worksheet for the assessment visit should be used during the visit to record the findings and the Evaluator's comments. This worksheet should be the principal document for developing the recommendations. The Appendix F contains the assessment visit worksheet.

Interview Preparation

The lead evaluator requests that the institution prepare scheduled times for key on-campus interviews. It will be helpful to review the programme organization (either through the bulletin sent to you or via

the web-site) to identify as closely as possible the people to be interviewed. As many as possible should be conducted during the first day of the visit.

It is necessary to request the institution to provide a private and secure work room during the visit. If possible, this room is equipped with telephone, USB-capable computer (at least one) and printer.

3.3.2 Implementation of peer assessment visit

Meetings – Agendas and Outlines

As per visit agenda (see an example above) several meetings are to be carried out during the visit – team meetings and meetings with the institution and programme management. Suggested outlines of various meetings are presented below:

Preparatory meeting (Participants: Lead evaluator and evaluators)

- Review procedures and timetable of visit.
- Reiterate responsibility of evaluators and the team chair.
- Review procedure and plan for meetings with the programme leader and faculty.
- Review reports of previous visit – audits, accreditation (if the institution provides the material)..
- Review preliminary findings based on the website analysis and review of materials provided by the institution.

Opening meeting (Participants: Lead evaluator, evaluators and related persons at the institution)

- Review visit schedule - add details and changes.
- Review the procedures for advising the institution on the team findings.
- Review procedures that take place after the visit.
- Determine whether there are any special requirements, conditions, information or clarifications which the team should be made aware of.

Interviews

The entire team will meet with the Programme Leader and with at least one of the following officials:

- President and/or Provost
- Academic Vice President
- Dean of the college
- Chair of the department

The lead evaluator might choose to meet some of the following officials:

- Librarian
- Finance officer
- Student Recruitment officer
- Placement Services officer

Evaluators will need to speak with the following:

- Programme leader
- Some programme faculty (individually)
- Chair or other representative from mathematics, science, and communications, as is determined to be necessary.
- Students in groups, including one or more visits to classes and laboratory sessions.

An important component of the pre-visit preparation is the development of specific questions to be used during interviews. The examples of questions which might be utilized while interviewing the programme leader, the programme faculty and students are provided as Appendix G.

Closing meeting

The final component of the assessment visit is the closing meeting with the Institution and programme management. The lead evaluator expresses gratitude on behalf of team for courtesy, cooperation, hospitality, etc. Other compliments as appropriate, such as to Dean, Department Head, faculty members on excellent assistance, arrangements for visit, etc., to President and others for making themselves available, etc. Other principal elements of the final meeting are as follows:

- Discussion on the purpose of meeting as reporting the findings and informing on preliminary conclusions
- Review procedure for draft (preliminary) and final visit report
- Presentations of findings and preliminary recommendations
- Discussion on findings and recommendations

3.3.3 Post visit activities

Immediately after the assessment visit, the individual draft of the programme assessment report should be emailed to the team members for review and final exchange of ideas and conclusions. Specific attention should be given to synchronization of the findings and the recommendation. Various computer techniques like Dropbox© might be used in the process. The lead evaluator is collecting the information from the members and prepares the draft of the final programme assessment report.

It is suggested to provide the draft to the contact person at the institution visited and possibly to one-two representatives of the institution for review and comments. If any factual errors and/or misunderstandings are found, the necessary corrections should be made promptly. Normally, the entire post-visit stage should not last more than two months.

As soon as the final report is submitted to the institution, it becomes a property of the institution. The proprietorship close should be strictly maintained, which means that no information related to the institution itself, and to the findings of the assessment team, is allowed to be disclosed without a written permission. Any possible decision on publishing the results should be discussed with the institution. A sample of the programme assessment report is given as Appendix H.

4. Qualification of evaluators

Based on the definition given in section 2.1, “peer assessment” and “evaluators” have been used in this report instead of “audit” and “auditors”. However, it is worth referring the guidelines for quality and/or environmental management systems auditing [ISO19011-2002] because the functions and activities of evaluators during a peer assessment are similar to those of auditors. ISO 19011 also sets out the principles of auditing, management and implementation of audit programmes, audit monitoring and reviewing and audit activities. The most important of these activities are:

- conducting document review,
- preparing and conducting on-site audit activities and
- preparing, approving and distributing the audit report.

The ISO standard also deals with competence and evaluation of auditors, as well as their training (knowledge and skills, work and audit experience and maintenance and improvement of experience). It is on the basis of these principles and methodology, combined with the same as practised by ABET and ENQA, as well as the experience gained through past accreditation/audit visits conducted by the members of the project team, that the evaluation visits to IAMU member institutions are designed and proposed in this project. These have been more closely elaborated in preparing and conducting of the external evaluation peer visit of the project team to one IAMU member-institution.

Quoting from the section 7 of ISO19011-2002, fundamental qualifications of evaluators for the IAMU accreditation scheme may be listed as follows.

Personal attributes of evaluators

Evaluators should be:

- a) ethical, i.e. fair, truthful, sincere, honest and discreet;
- b) open-minded, i.e. willing to consider alternative ideas or points of view;
- c) diplomatic, i.e. tactful in dealing with people;
- d) observant, i.e. actively aware of physical surroundings and activities;
- e) perceptive, i.e. instinctively aware of and able to understand situations;
- f) versatile, i.e. adjusts readily to different situations;
- g) tenacious, i.e. persistent, focused on achieving objectives;
- h) decisive, i.e. reaches timely conclusions based on logical reasoning and analysis; and
- i) self-reliant, i.e. acts and functions independently while interacting effectively with others

Knowledge and skills needed for evaluators

Evaluators should have knowledge and skills in the following areas:

- a) Principles, procedures and techniques of the IAMU accreditation scheme
- b) Management system and reference documents
- c) Situations of the maritime institutions
- d) Applicable regulations and other requirements such like STCW requirements as well as the BSc degree programmes relevant to the programmes concerned.

Qualifications and experience for evaluators

The following qualifications and experience can be appropriate as evaluators for the IAMU accreditation scheme.

- Academic staff whose positions are on full or associate professor at IAMU member institutions
- Administrative staff who manage the curriculum development at IAMU member institutions
- Persons certified as maritime officers on management level under the STCW Conventions and Codes
- Competent persons pursuant to section A-I/7 of the STCW Code
- Persons certified as either lead auditor or auditor of ISO9001/14001

5. Conclusions

5.1 Results and recommendations from the pilot study visit

Based on the lessons learned through the pilot study visit which is the main activity of the second phase of ACCREDIMET project, the followings might be suggested:

a) Evaluation Team Composition

Pilot study visit: The team included four members of the ACCREDIMET project as it was a pilot study visit. However it was not the optimal composition for an actual visit.

- A visiting team should include a leader and, at least, one evaluator for each programme. Minimal team size for a one-programme visit is one lead evaluator and one evaluator.
- For large programmes or for dual-license programmes, additional evaluators might be required.
- It is imperative that the Assessment team consists of real experts. Each evaluator should be intimately familiar with a specific type of a programme, accumulated substantial teaching experience and well-informed about international MET.
- An ideal lead evaluator is a current or former faculty member who has a substantial experience in administrating side of MET (Rector, Dean, Department Head, etc.)

b) Pre-Visit Preparation

Pilot study visit: The preparation to the pilot study visit concentrated on development of the format of peer assessment and negotiations with the Institution. The time of the visit was not the best, and the agenda was not clear at the time.

Team forming

- As soon as the candidate institution for the peer assessment visit is identified, the lead evaluator should be assigned.
- the lead evaluator should be involved in selection of team member(s) and identify their availability
- the lead evaluator will do the negotiations, set the time and the agenda, coordinate the activities of the team members.

Itinerary

- the best time for the visit depends on the school location. For European, Asian and North American schools – fall and spring time are preferable, for South Asia, Africa and Central America – winter might be preferred, for Australia, South America and South Africa – late fall or early spring might be a good choice.
- visit duration depends on various factors: size of the team, size of the programme, previous accreditation, availability of information (on web and in catalogues). Based on the pilot study visit, the two-three day visit by one expert per program might suffice.

Agenda

- the visit should include meetings, interviews, and discussions, tours of facilities and classrooms, and other activities. It might be recommended to schedule as many events as possible in advance. And coordination and approval from the institution are required.

Negotiations

Pre-visit negotiations with the institution should cover wide spectre of items:

- the itinerary and the agenda,
- the documentation and information to be reviewed from public sources and also to be provided,
- the visit procedures,
- the proprietary and security issues,
- transportation, lodging and food, and others.

Review of documentation

The team should make efforts to be prepared for the visit as much as it is possible.

- The website of the institutions is the primary source. However, some information might be requested, like catalogues, student admission package. It is very important to obtain also the materials that the institution previously provided to the Government or to other accreditation bodies while applying for accreditation, or course approval.
- Preliminary findings should be prepared based on the review of the above information and documents. The results of the pilot study visit suggest that the worksheet forms developed by the team proved to be convenient for recording those findings. New findings obtained in interviews and discussions would be also recorded in the workbooks.

c) Time Allocation and Team Work

Pilot study visit: Although the preliminary itinerary of the visit has been prepared in advance, quite substantial corrections have been injected during the pilot study visit. Besides, the institution has eventually been driving the schedule. In addition, a lot of time has been wasted due to delays, absence of faculty members, scheduling overlaps, etc. Obviously, lack of experience in conducting this type of assessment was the principal reason for not the most efficient use of time.

Visit duration

- Based on the pilot study visit, and also on the itineraries of various accreditation bodies, the average visit requires three-four days in total. For large programmes with minors and concentrations, one-two additional days might be required.

Time distribution

- Experience of accreditation bodies suggests the following breakdown of the total on-site visit time:
 - tour of the campus and facilities – half a day
 - review of additional information that the institution might provide, like course outlines, curriculum metrics, laboratory materials, and etc.
 - meetings, interviews and discussions – two days
 - finalizing the report and closing meeting – half-a-day

Distribution of responsibilities of team members

- It is vital that the team members use their time most effectively, without duplicating their efforts,
- The lead evaluator's responsibility is to schedule the team's time accurately. It is necessary to develop a very flexible schedule by planning in advance possible substitutions and alternative activities,
- Each evaluator makes his/her preliminary schedule, submits it to the lead evaluator for final synchronization and approval by the institution.

Team work

- Identifying findings and preparing the report are the principal outcomes of the visiting team.
- The preliminary findings are augmented by the new data obtained during the meetings and discussions, on-site documentation review, and by observing the facilities and class work
- Meetings are the most valuable components of the visit. The team first meets with the administration of the institution, and after that each evaluator meets with the appropriate programme leader and faculty members. Each of those meetings is rather a discussion where the evaluators clarify his/her findings and develop his/her opinion on various components of the programme.
- Separate meeting(s) should be arranged with students as fact finding sessions, and also as an opportunity for the students to express their opinions regarding the level the programme achieves the educational objectives.
- Each team member starts preparing the final report as soon as he/she commences the review of the information on the pre-visit stage. During the visit, while recording the findings in the workbook, he or she continues working on the report by identifying both, the strong points and the shortcomings in the programme, and formulating the recommendations for improvement.
- It is very important for each evaluator of the team to keep in mind that the time of the visit is too short to try recording findings related to all items in the workbook. Instead, the evaluator should try to identify the key items to be recorded and reviewed. Obviously, the number of recommendations is also limited.
- Preferred time to be devoted to working on the findings and recommendations is afternoons and evenings. This is also the time when the entire team gets together, and discusses the findings and possible recommendations.
- The vital component of the team work is the interaction with the institution, with administration, the faculty members and students. It is utmost important not to give any impression that a peer assessment visit is the actual team objective. The team should avoid any mentioning of a peer assessment and/or accreditation, and stress the peer assessment as the goal.

d) Meetings and Interviews

Pilot study visit: The team met with the Administration of MIWB (Director and vice-directors), and interviewed the programme leaders, individual faculty members, and also two groups of students. All interviews have been conducted by the entire visiting team. The agenda and specific questions have been developed along the way.

Team Meetings

- The opening meeting sets tone to the entire visit and stresses the rules and procedures to follow. At the same time it serves for finalizing the agenda and for general familiarization with the institution, its structure, mission and educational objectives. It is important to convince the administration in usefulness of the assessment for the institution. And, again, the administration should be assured that the visit has nothing to do with an audit.
- The meetings with the programme leaders should be devoted to learning as much as it is possible about all aspects of the programme. It is very important to have the plan and a questionnaire prepared in advance. Actually, some of the questions might be even emailed prior to the visit.
- The final meeting is to inform the administration and the programme leaders about the preliminary findings and the preliminary team recommendations. It is important not to have the meeting turned into an argument responsible errors and/or misunderstandings. It is still time to correct the errors and clarify confusions if any.

Interviews with faculty members

- The list of people to be interviewed should be as much as possible identified prior to the visit.
- The interviews with key personnel should develop through three distinctive stages:
 - In the first introductory stage, the free exchange of information should be allowed. The evaluators should inform the key personnel on aims, methodology and limitations of the accreditation process. The personnel should briefly present the institution and expectations from the process itself.
 - The second phase should be based on selected list of questions consistently and uniformly covering all aspects of the institution work. During this phase the interviewers should only check the appropriateness of the implemented standards of work and their effects on accepted concept of quality. The evaluators should refrain from all questions and comments questioning the goals, aims or concept of quality set up at evaluated institution. In particular, questions and comments referencing cultural differences have to be avoided. The basic set of questions to be raised during this phase should be prepared in advance but should not be presented to the key personnel in advance. Requests for additional explanations, not prepared in advance, are allowed as long as they do not lead conversation astray and are not too time-consuming.
 - During the third phase, the more informal approach should be followed, allowing all involved to freely comment any aspect touched during interview.
- The interviews should be rather discussions and friendly conversations. One-on-one interviews should be preferred. Each interview should not last longer than 30-40 minutes.
- Use of media devices like IC recorders, photo and video cameras, etc. should be very limited, and definitely only with prior permission. Actually, a subject of using media devices should be discussed at the opening meeting with the Administration.

e) Workbooks for evaluations

Pilot study visit: The team used the prepared workbook form. Multiple corrections has been proposed and adapted.

- The final format which was approved by the team members appears quite useful and is recommended to be used by the evaluation teams during the pre-visit and on- visit stages. The completed workbook is the foundation of the final report which is to be provided to the institution in two-three months after the visit.

f) Final report: content, presentation, time, approval

Pilot study visit: The team has been working on the draft of the final report during the entire visit. Because of the very tight schedule, only the evenings could have been allocated. However, the team was successful, and the draft finding and recommendations were ready by the final meeting

with the Administration. The follow-up work was not that successful, and the final visit report has been delayed. The primary reason was the mere fact that the team had a dual task to deal with: preparation of the report for the entire ACCREDIMET project, while the pilot visit report became a secondary item.

The team composition

- Having been suggested above, it should allow better use of team time in preparation of workbook and the final draft report. While the evaluator(s) are busy with the Programme, the lead evaluator works on the institution-type items. Obviously, the evening team meetings in the hotel would be still required for synchronization of findings and recommendations.

Draft report

- It might be necessary to discuss the draft report with the programme leader prior to presenting it to the Administration at the final meeting. This way some of misunderstandings and possible errors would be settled.

Final report preparation

- The report format has to be prepared in detail and agreed upon by all team members,
- Each member has to be clear about his/her contribution, and timing,
- The lead evaluator is in charge of assembling the final document, of editing and correcting possible mishaps,
- The final draft is again checked by the evaluators involved, and if the feed-back from the institution has been received, the needed changes have to be incorporated prior to publication and distribution.

g) Creating Panel of Experts

Pilot study visit: The visiting team included just the members of the project team. No invited experts were involved. Therefore the finding and the recommendations reflect the content of the project subjects, and the preliminary finding included in the sample report.

- The project team members believe that the members of the Panel of experts should be nominated by the IAMU member institutions. It might become a reword-like procedure when the most experienced faculty members and recent retirees are selected. The IEB might decide to create a selection committee with final approval of the candidates by the IEB. Obviously, the pool of candidates should include those who would agree to work on voluntary basis, or with minimal honorarium.

5.2 Further activities for ACCREDIMET

Publicizing the results

Any project becomes successful if and when it is properly marketed. In the case of peer assessment of maritime programmes, publicizing of the results might be the best marketing tool. In reality, a peer assessment report represents collective opinion of experts and might the recommendations might have an independent value not only for IAMU member institutions, but also for various MET institutions. However, various security, sensitivity and proprietary issues should be thoroughly investigated prior to making any attempt of publishing the results.

It is also recommended that the publication of an annual bulletin should be considered, which contains valuable recommendations given by visiting teams and/or follow-up actions taken by member institutions through the IAMU accreditation scheme.

Definition of the benefits for IAMU member institutions

Obviously, the main objective of establishing an accreditation scheme is to improve quality of academic curriculum as well as the contents of each subject in the academic programme provided at the IAMU member institutions. However, benefits of efforts for accreditation such as preparation for documents and reception of the evaluation team should be clearly defined. Although this should be considered with the IEB members, expected benefits for the member institutions accredited by the IAMU may be listed as follows:

- An academic award is given to the top graduate from the course accredited
- Scholarship opportunity is given to student(s) who enrol to the course accredited
- Financial supports for obtaining higher academic degree are provided to young faculty members who moved from sea and involved to the course accredited.

Financial arrangements

Although the assessors are expected to work on a voluntary basis, with possible small honorarium, the entire endeavour might appear quite costly: transportation and lodging might run high. Assuming that the institution covers the expenses, as a result the entire idea might become prohibitive for some MET institutions. Therefore, bearing in mind the goal of improvement of the maritime education, it is necessary to identify possible alternative sources of funding, like the Governments, International organizations and programs, like Erasmus, Nippon foundation, etc. Various EU and Asian programs might also be investigated.

Acknowledgement

This project has been supported by a research grant of the International Association of Maritime University. The project members would also like to express our special thanks to Mr G. van Leunen, Director, and Dr Stephen Cross, Director of Projects and academic staff members of Maritime Institute Willem Barentsz for their supports and contributions to our pilot study visit.

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Appendices

- A Meeting minutes
 - A-1 Integrated kick-off meeting in Gdynia and Malmo
 - A-2 2nd meeting in Opatija
- B Power point files of presentations
 - B-1 Presentation in AGA12 of IAMU in Gdynia
 - B-2 Presentation in IMLA19 in Opatija
- C Paper published in the proceedings for IMLA19
- D Pilot study visit schedule
- E Pre-visit workbook
- F Peer assessment visit workbook
- G Sample questions for interviews
- H Programme assessment report - Sample

Integrated Minutes of the kick-off meetings ACCREDIMET Phase II

“A feasibility study on the establishment of an IAMU accreditation scheme”

Date and venue: 1st meeting: 12-14 June 2011, Gdynia, Poland

2nd meeting: 23-25 June 2011, Malmö, Sweden

Participants: 1st meeting: Takeshi Nakazawa(TN), Damir Zec(DZ) and Boris Pritchard(BP)

2nd meeting Takeshi Nakazawa(TN), Boris Butman(BB)

Minutes

A. Confirmation of the contract conditions of ACCRDIMET II in 2011

TN explained the contract condition in 2011 to DZ, BP and BB. All team members are confirmed and signed the agreement papers respectively.

B. Consideration of Boris Butman’s comments

DZ, BP and TN accepted BB’s comments*¹ as a valuable contribution to the project, in particular the following: (BB’s additional comments are also included)

- The subject of accreditation is to refer to **programs of study** rather than to schools (MET institutions)
- Two levels of accreditation –informal and formal: **informal level has been accepted** involving a peer visit and evaluation, with preparation of a report, supported by evidence, and providing suggestions for improvement. For an association like IAMU, the informal accreditation might be the best case scenario though it could, in some elements, assume a formal character.
- The team agreed with the numerous advantages of accreditation as listed in the report. Obviously, the subject of **clearly identifying and stressing specific benefits** for the IAMU member institutions is the condition of a success of the entire project. Also, where will IAMU accreditation be used or be valid.
- Among the benefits or advantages, the following might be looked into:
 - .1 Mobility of students and transfer of credits (cf. ECTS etc.).
 - .2 Joint use of training facilities and vessels.
 - .3 Promotion of the maritime field as a profession.
 - .4 Initiating an information bulletin on accreditation (Accreditation Bulletin of IAMU), Main purpose is to provide the IAMU members with the information related to improvements identified by the evaluators.
 - Providing information to the institutions expecting accreditation regarding shortcomings to be considered to be dealt with.
 - Providing information to all member institutions, regardless of accreditation, on the shortcomings of accreditation and the way to deal with them. THIS Is possibly the

most important benefit of accreditation. (confidentiality should be considered)

- The bulletin might be also distributed among the non-IAMU members in order to provide them with the better teaching practices and the problems to avoid. This must be the global contribution of the IAMU.
- .5 Establishing a benefit package may be considered, such as an IAMU prize to the top graduate who completed an accredited program, scholarship programs for students and supporting programs for the faculty members to improve their academic career. (Can we be more specific with the benefits or awards?)

C. Overall strategy and research procedure

In considering the items in the “Application form for research projects in FY2011” the project team has adopted the following changes:

- Task 1 should become Task 2 and v.v.
- In the existing Application Form, bullet three in Task 2 should be deleted and inserted into Task 3.

Therefore the new Form 3 of the Application form should read as follows:

- Task 1: Potential and capacity of the IAMU as an accreditation body
 - to define the area that the IAMU can cover
 - to develop principles and rules for the IAMU accreditation
- Task 2: Building a framework of the accreditation scheme
 - to list up the items to be checked during the accreditation visit
 - to define the criterion for the items to be checked
- Task 3: Human resources - training and experts required for the accreditation visit
 - to define qualifications required for visiting experts
 - to develop knowledge and skills for the visiting experts
 - to develop a training program for the accreditation officers
 - role of IAMU in developing and training human resources

Having taken into account Section 7 of BB’s suggestions and comments and adopting the tasks set out in the “Application form for research projects in FY2011”, the project team has proposed the following Table of Contents for the final report:

No	Contents	Allocation of duties
1.	Introduction - Objectives - Purpose of the 2nd stage of the project - Potential and capacity of the accreditation (Task1)	 TN TN TN, BB

2.	Framework of the accreditation scheme (Task 2) <ul style="list-style-type: none"> - General theoretical framework - IAMU accreditation principles - Accreditation visit - Accreditation standards - Results of the pilot Study 	BP DZ BB DZ TN, BB
3.	Qualifications and Training of evaluators (Task 3) <ul style="list-style-type: none"> - Drawing up an Evaluator's Manual - Develop a list of evaluators 	BP, DZ, BB
4.	Conclusions	TN
5.	Appendix <ul style="list-style-type: none"> - Minutes and related material - Document for Pilot study etc. 	ALL

Remarks: This Table of Contents translates into the appropriate Accreditation Visit Program and will therefore also affect corresponding changes in the Research Schedule which will be amended accordingly.

BB suggested in the 2nd meeting that some extended tasks for the ACCREDIMET may be needed to develop a list of evaluators to be included into the accreditation panel:

- specialists by subjects and programs
- affiliation – preferably from the leading schools
- wide use of retirees

D. Plan for pilot study

The pilot accreditation visit should be done by the project team members. The team considered eligibility of the following IAMU member-institutions based on the feedback on the questionnaire:

1. Maritime Institution Willem Barentz Terschelling, the Netherlands
2. Maritime University at Cataluna, Spain
3. ITU, Faculty of Maritime Studies, Istanbul, Turkey
4. Admiral Makarov State Maritime Academy, St. Petersburg, Russia
5. Gdynia Maritime University, Poland
6. Constanta Maritime University, Romania

The evaluation should be a combination of direct evaluation with a decision YES or NO and graded accreditation with a score or a grade (two steps).

The pilot accreditation visit to the selected MET-institution should be planned for the period in the week 46 or 47 (November 2011) of the Project and should take place from Tuesday through Thursday. TN will contact MIWB for their acceptance.

It would be wise reconsidering the definitions of the terms such as: evaluation, assessment,

certification, etc. BB suggested that “Evaluator” is appropriate to use instead of “Auditor”, especially for an accreditation visit.

The team has taken due note of the comment that the list of programs should be condensed, or rather generalized. (e.g. several engineering programs with different names for the purpose of accreditation might be simply considered “Marine Engineering programs”)

Elements of accreditation: Any form of IAMU accreditation should answer the key question: What can an MET program (Institution) do with the accreditation document? or What is the benefit of accreditation for an MET institution or program of study? The team has accepted the elements of accreditation below:

- setting standards, criteria (benchmarks)
- setting metrics or yardsticks (measuring or evaluating tools)
- collection or selection of data for accreditation
- survey of metrics

The team maintains that simple observation visit is preferred to the pilot study.

Although we have agreed that the amount of work the institution is asked to do should be limited, some work is still required. The scope of this pilot-study should be identified.

Administrative items to be considered and developed are as follows:

- agenda and timing,
- financial arrangements
- legal and proprietary issues
- evaluating team composition
- final report and/or statement – content and timing

The accreditation visit agenda and a table of contents of the visit report:

The following principles shall be applied in obtaining relevant information on the MET program to be evaluated / accredited:

- the brunt of the information on the MET institution to be accredited must come from already available sources (website info, mission statements, programs of study, student life etc)
- during the project team will try to gather most information via interviews and discussion.
- the team will avoid burdening the MET institution personnel with any extra clerical work or provision of any special-aimed materials.

For this purpose the project team will draw up an appropriate Evaluator’s Manual.

The project team has accepted the accreditation visit agenda as suggested by BB on 3 June 2011, with minor amendments, which is shown as follows:

I. MANAGEMENT OF ACADEMIC POLICY

1. Mission of the institution. Implementation of educational policy.

2. Conformity with national and international standards and requirements
3. Organizational structure and monitoring faculty and student performance
4. Quality Management System

II. STUDENTS

1. Student body
2. Students' motivation and guidance
3. Study load and learning conditions
4. Student participation and involvement

III. THE CURRICULUM

1. Learning outcomes for the program; credits and credit transfer
2. Curriculum conformity with requirements of Standards
3. Aims and objectives of the curriculum
4. Curriculum specifics
5. Subject structure, balance and adequacy of curriculum
6. Correspondence to international standards and labor market
7. Admission and graduation requirements.
8. Mobility issues (programs, students, teaching staff)

IV THE EDUCATIONAL (TEACHING) PROCESS

1. Teaching methods
2. Information Technology in teaching process
3. Development of practical skills of students
4. Pedagogical standards (space in m² per student, lecture rooms, labs, specialized workshops)
5. Simulators
6. Teaching aids/tools/equipment
7. Teaching resources and materials (textbooks, video, CD, software)
8. Training ships and on-board training

V. ORGANISATION OF STUDIES

1. Academic calendar.
2. Learning assessment system
3. Organization of practical training
4. Number of student/teaching staff ratio

VI. TEACHING STAFF

1. Faculty, content, qualification and experience
2. Faculty selection and retention
3. Faculty/administration relations
4. Requirements as to holding STCW certificates of competence
5. Research requirements on the teaching staff/faculty (publications in journals, etc.)

VII. FEEDBACK AND QUALITY ASSURANCE

1. Quality assurance system
2. Industry involvement – stakeholders' expectations and involvement
3. Relationships with foreign educational institutions.

VIII. LIFE LONG LEARNING OPPORTUNITIES

BB developed another version of the visit agenda as well as the information to be collected from institutions, which are attached at the end of the minutes for members' consideration.

E. Time and place of next meeting

The Project team will hold a meeting on the occasion of IMLA19 conference (28 Sep – 1 Oct, 2011, Opatija, Croatia)

F. Any other business

In the 2nd meeting in Malmo, BB proposed the following items, which are related to the role of WMU on the accreditation scheme. DZ and BP are invited to consider the following items and comment on whether these items should be included in our project in 2011. This issue will continuously discuss with all of you.

- I. WMU as a possible vehicle or rather formal body for the accreditation:
 - By participating in the accreditation, WMU ascertains its role as a leading institution in the maritime education, the one that is setting benchmarks and identifies the drawbacks in the maritime education programs.
 - It adds a lot to the WMU visibility as a participant of the program evaluations.
 - On the other side, the actual involvement of the WMU is limited by formally recording and administering the process which is practically carried out by the Panel of Industry Experts from the IAMU member institutions and their retirees.
 - WMU might also be involved in publication and distribution of the Accreditation Bulletin, which will also add to the school visibility.

- II. Based on the IAMU member accreditation system, WMU might establish its own accreditation of the schools the WMU getting the undergraduate students from.
 - It will be required to assemble the list of schools for a few years of admission and develop a statistically valid representation.
 - Identify schools that are not IAMU members and treat them with more attention.
 - Set a system of assigning scores for other type of accreditation (STCW, ABS and other class. Societies, professional bodies, etc.)
 - Total evaluation result better be not quantified.
 - Most important is to have the evaluation mainly geared on improvement of the programs.
 - Principal benefit for the WMU is to prove the value of the graduation degree and also to provide an assistance to some of the schools in bringing the level of their education to the higher level.

III. WMU might also consider establishing and running its own courses for auditors in accreditation

Integrated by TN based on the draft minutes made by BP and BB
9 July 2011

Part A. PRINCIPAL ASSESSMENT CATEGORIES AND SUB-CATEGORIES

I. PROGRAM ORGANIZATION AND MANAGEMENT

1. Institution and Program History
2. Program content (tracks and concentrations)
3. Program implementation (delivery mode, location, co-op arrangements)
4. Conformity with national and international standards and requirements
5. Program organizational structure
6. Monitoring faculty performance

II. STUDENTS

1. Student body
2. Student admission system (admission and evaluation, student transfer, credit acceptance)
3. Evaluating student performance
4. Students' motivation and guidance
5. Study load and learning conditions
6. Student participation and involvement
7. Monitoring graduation requirements

III. PROGRAM OBJECTIVES

1. Mission of institution.
2. Program educational objectives (content, consistency with mission)
3. Program community (stakeholders)
4. Monitoring fulfillment of educational objectives
5. Program specific subjects

IV. STUDENT LEARNING OUTCOMES AND CURRICULUM

1. Proficiency in profession
 - a). an ability to apply knowledge of mathematics, science and general education
 - b). an ability to identify, formulate, and solve professional problems
 - c). an ability to use the techniques, skills, and modern tools of the profession
2. Ability to apply effective work standards and responsible attitude
 - a). an understanding of professional and ethical responsibility
 - b). an ability to communicate effectively
 - c). an ability to function on multi-disciplinary teams
3. Attaining a well-rounded education
 - a). a recognition of the need for, and an ability to engage in life-long learning
 - b). understanding of contemporary issues of the profession
 - c). global and societal aspects of the program
4. Curriculum conformity with educational objectives
5. Curriculum conformity with outcomes
6. Curriculum conformity with requirements of Standards

7. Subject structure, balance and adequacy of curriculum
8. Correspondence to international standards and labor market

V. EDUCATIONAL (TEACHING) PROCESS

1. Teaching methods
2. Information technology in teaching process
3. Development of practical skills of students
4. Educational quality management

VI. ORGANISATION OF STUDIES

1. Academic calendar.
2. Learning assessment system
3. Organization of practical training

VII. TEACHING STAFF

1. Faculty, content, qualification and experience
2. Faculty professional development
3. Faculty size and workload
4. Faculty selection and retention
5. Faculty/administration relations, responsibility and authority

VIII. FEEDBACK AND QUALITY ASSURANCE

1. Quality assurance system
2. Industry involvement
3. Relationships with foreign educational institutions.

IX. FACILITIES

1. Offices, classrooms and laboratories
2. IT facilities
3. Library facilities
4. Maintenance and upgrading of facilities

X. PROGRAM INSTITUTIONAL SUPPORT

1. Staffing
2. Financial support
3. Faculty hiring and retention
4. Faculty professional development (support)
5. Academic support department
6. Non-Academic support units (regimental, etc.)

Part B: INFORMATION FROM INSTITUTION

The following is the possible information to be requested (preferably what the institution has recently submitted to other accreditors):

1. Enrolment and Graduation History
2. Curriculum Table
3. Faculty list with qualifications, employment history, load, etc.
4. Work Placement History
5. Support personnel

23 June 2011

Prepared by Dr Boris Butman

Minutes of the 2nd meeting in Opatija for ACCREDIMET Phase II

“A feasibility study on the establishment of an IAMU accreditation scheme”

Date and venue: 28 - 30 September 2011, Hotel Milenij in Opatija, Croatia

Participants: Takeshi Nakazawa(TN), World Maritime University
Damir Zec (DZ), University of Rijeka
Boris Pritchard (BP), University of Rijeka
Boris Butman (BB), US Merchant Marine Academy
Vlado Frančić (VF), Ph.D candidate, University of Rijeka

Advisors

Jaime Veiga, (European Maritime Safety Agency)
Stephen Cross (Maritime Institute of Willem Barentsz)

Minutes

1. Confirmation of the minutes of the kick-off meeting in June 2011.

In fact, the minutes have been confirmed and agreed by all members in early July on e-mail base but TN distributed the copy to all members to refresh their memories on ACCREDIMET phase II.

2. Preparation for the pilot study

Based on the material prepared by BB, all members exchanged opinions and comments to develop the first draft of the guideline for the pilot study which the members visit to Maritime Institute of Willem Barentsz (MIWB), which is attached to this minutes.

3. Structure of the final report

Members agreed that this item should be discussed at the end of the pilot study which will be held in November at MIWB.

4. Any other business

Meeting with Dr Jaime Veiga, EMSA (28 September 1730 – 1800)

Members invited Dr Veiga to obtain the inspection procedure and some points to be considered based on his experience as the lead inspector of EMSA's inspection visits to maritime administrations and institutions in several countries.

- There are nine inspectors who can take the inspection visits to the maritime administration and institutions.
- Inspectors have the lead auditor's certificate on ISO 9000 series.

Meeting with Dr Stephen Cross, MIWB (29 September 1700 – 1830)

Members invited SJC to confirm the schedule of our pilot study and agreed the following points.

- The visit to MIWB will be for 3 days in week 45 or 47. SJC will inform available days to TN.

- Courses reviewed are MarOff and Ocean Technology courses, which are on BSc level.
- The objectives of the visit are to confirm the items and contents of the visit guideline which developed during the members' stay in Opatija.
- Preparation of visit:
Documents related to the visit will be drafted by BB on around 25 October.
BB sends them to all members to check and TN sends the final documents to SJC.
- The flight tickets for the visit members will be arranged by WMU.

1 October 2011, drafted by TN

15 October 2011, Confirmed by DZ, BP, BB and VF

**PRELIMINARY LIST OF ITEMS FOR AN ON-SITE PEER ASSESSMENT VISIT
(Ten Commandments)**

- I. Program organization and management
 - a. general information
 - program history,
 - program options and concentrations
 - delivery modes
 - previous evaluation attempts
 - b. mission of the institution and objectives of the program
 - c. admission policy
 - d. conformity of the program with the national and international standards and requirements
 - e. organizational structure of the program
 - f. system of monitoring faculty and student performance
 - g. program funding
- II. Students
 - a. admission requirements
 - b. scholarship opportunities
 - c. student body structure and retention practices
 - d. evaluating student performance
 - e. transfer students and transfer courses - mobility
 - f. graduation requirements and graduation audits
 - g. development of critical thinking skills, student participation and involvement
 - h. mentoring and advising system
- III. Curriculum
 - a. assessing the curriculum vs. the educational objectives of program and the learning outcomes
 - b. analysis of the specific curriculum areas, and their share in the total credit load
 - c. textbooks and reference materials available
 - d. course outlines, and completed course work, projects and papers, assessments
 - e. development of communication skills, as well as broad understanding of global, economic, cultural and societal issues
 - f. teamwork development skills
 - g. development cultural awareness
- IV. Teaching process
 - a. primary teaching modes employed by faculty
 - b. modern techniques (multimedia devices, internet-based information exchange, CBT, distance learning)

- V. Study process and student workload
 - a. combination of classroom teaching and after hours studying
 - b. academic calendar and its impact on student performance
 - c. availability and suitability of facilities for study

- VI. Faculty and support personnel
 - a. composition, size, credentials, and experience of faculty and support personnel
 - b. faculty selection, promotion and retention
 - c. faculty professional development and scholarly activities
 - d. faculty interaction with students

- VII. Professional training and internship
 - a. certification
 - b. organization and monitoring of professional training
 - c. feedback from on-board training and other types of internship

- VIII. Facilities and resources
 - a. classrooms and laboratories (simulators, training ships, pool ...)
 - b. institutional support and resources
 - c. library and other support facilities (computer, multimedia facilities...)
 - d. student support facilities

- IX. Program objectives and stakeholders involvement
 - a. stakeholders involvement
 - b. industry feedback
 - c. program improvement actions
 - d. changes of objectives to reflect stakeholders feedback
 - e. rate of employment in the industry

- X. Continuing education
 - a. graduate school enrolment
 - b. upgrading licenses, obtaining new certificates
 - c. keeping track of graduate professional development

ACCREDIMET

A Feasibility Study on the Establishment of an IAMU Accreditation Scheme

IAMU, AGA12, Gdynia, 2011

Takeshi Nakazawa
Boris Pritchard
Damir Zec

ACCREDIMET

- **Task 1: Fundamental investigation**
 - Quality assurance - present situation
 - Brief review of exemplar accreditation systems
 - External examiner system

- **Task 2: Questionnaire**
 - Existing accreditation schemes
 - member institutions' opinions

- **Task 3: Feasibility study**
 - IAMU's potentials
 - Relationship between stakeholders
 - Conclusion and recommendations

Accreditation - Definitions

- Accreditation is a formal, published statement regarding the quality of an institution or a programme, following a cyclical evaluation based on agreed standards. (CRE, 2001)
- Accreditation is a process of external quality review used by higher education to scrutinise colleges, universities and higher education programs for quality assurance and quality improvement. (CHEA, 2000)

Accreditation - Definitions

- Accreditation is the award of a status. Accreditation as a process is generally based on the application of predefined standards. It is primarily an outcome of evaluation. (The European Training Foundation, 1998)
- Accreditation - the formal recognition that a body or a person is competent to carry out specific tasks – assesses compliance with predefined objectives and permits regular examination of progress made (CEDEFOP)

Accreditation & MET

- STCW I/8
 - all training [...] activities carried out by non-governmental agencies or entities under its authority are continuously monitored through a quality standards system
 - evaluation is periodically undertaken by qualified persons who are not themselves involved in the activities concerned

Accreditation - Reasons

- Accreditation helps students and their parents to choose quality college programs.
- Accreditation enables employers to recruit graduates they know are well-prepared.
- Accreditation is used by registration, licensure, and certification boards to screen applicants.
- Accreditation gives institutions a structured mechanism to assess, evaluate, and improve the quality of their programs.

Accreditation – EU approach

- A tool used to ensure:
 - improvement and enhancement of quality;
 - safeguarding of national academic standards;
 - recognition of programmes and/or institutions;
 - accountability (in return for autonomy);
 - independently-verified information about programmes and/or institutions.

Accreditation - Examples

- The Accreditation Board for Engineering and Technology (ABET)
- The Institute of Marine Engineering, Science and Technology (IMarEST)
- Accreditation in EU higher education
- Quality Assurance in the Nordic Higher Education

Accreditation - Issues

- Who awards accreditation?
- What is accredited?
- What types/levels of accreditation are appropriate?
- What criteria (aspects, elements) should be applied?
- What procedures should be applied ?

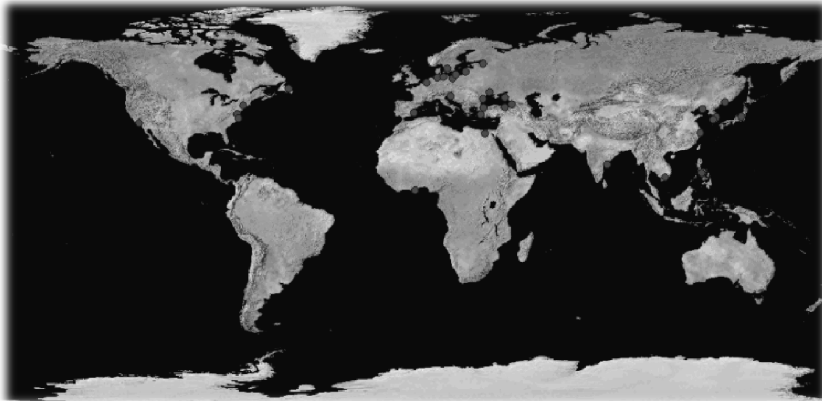
Task 2 - Questionnaire

Main parts:

- Basic information,
- International accreditation,
- External examiner system, and
- General views.

Questionnaire

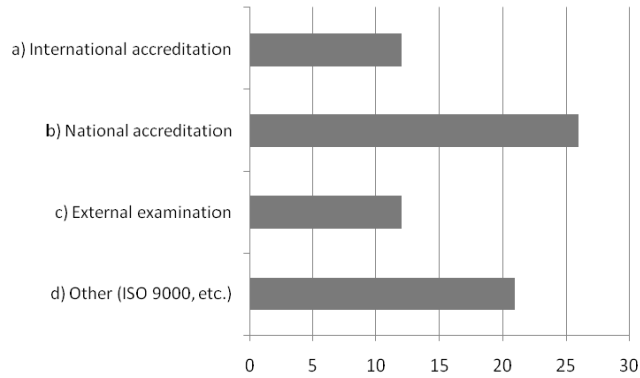
- Replies received from 33 IAMU member institutions



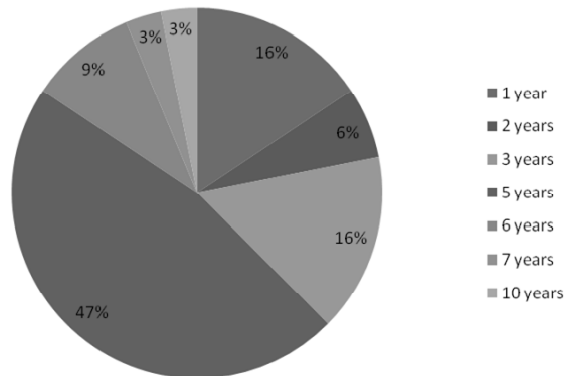
Questionnaire

- 33 institutions replied to questionnaire
- 144 BSc programmes
- 98 MSc programmes
- 27 programmes (1 institution)
- 33 institutions undergone some kind of quality assessment

1.3.1 What type of assessment was applied?



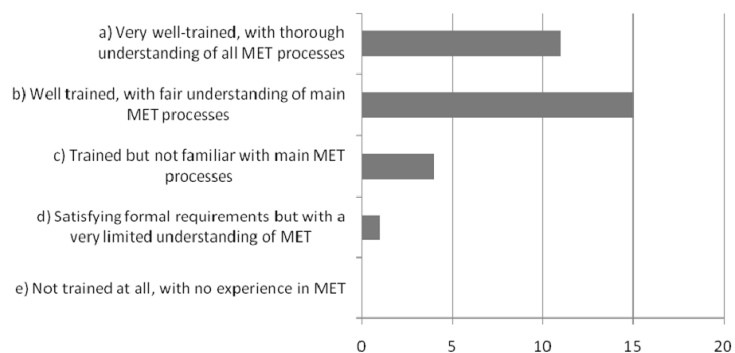
1.5 How long is the validity period of the accreditation?



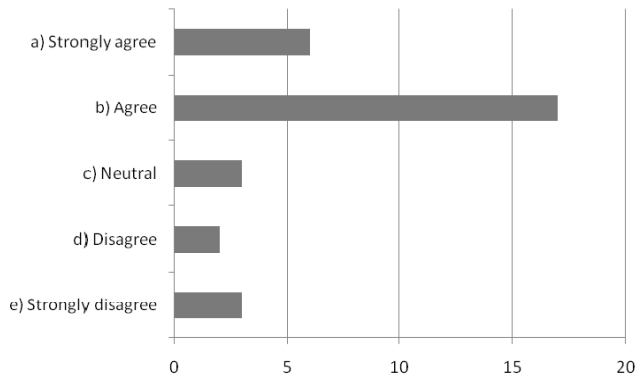
2.1 Do the various forms of external assessment that your institution has undergone so far meet your INSTITUTION'S NEEDS?

-
- Of all replies 29 replies confirm that the present external assessment does satisfy the institution's needs.
- However:
 - Several respondents do not support present systems,
 - Certain reluctance to additional accreditation scheme is presented.

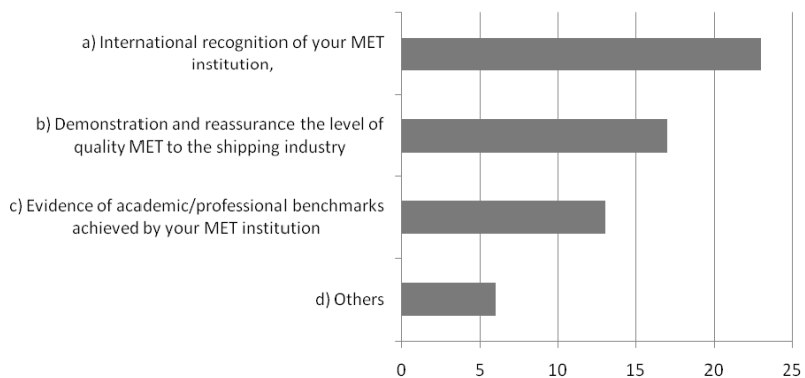
2.3. External assessors



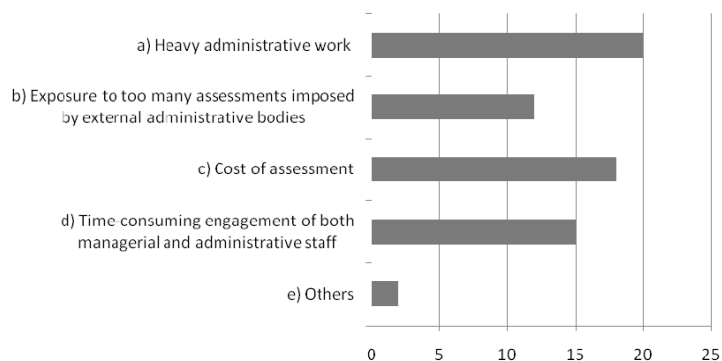
2.5 Do you think that some sort of a possible IAMU accreditation scheme would ASSIST your institution in maintaining or improving your status or reputation with your stakeholders ?



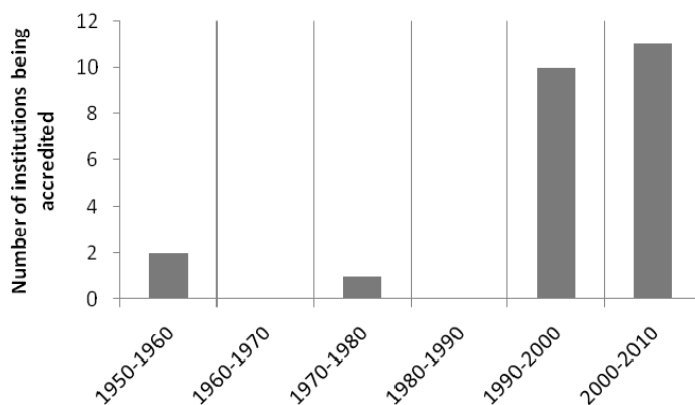
2.6.1 How can a possible IAMU accreditation scheme be BENEFICIAL to your institution or to some of your programmes of study?



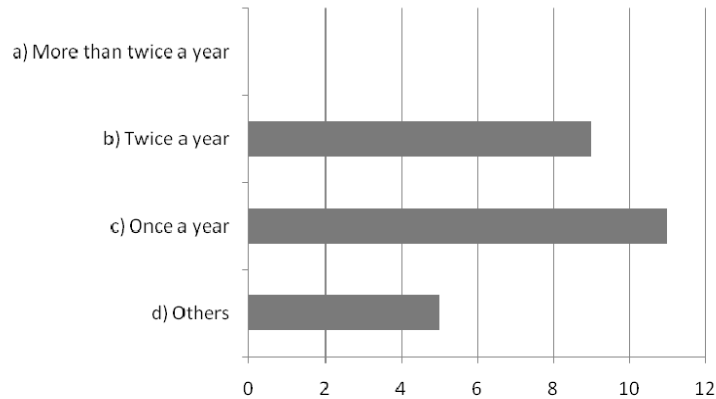
2.7.1 Please select the *NEGATIVE* aspects or effects of previous cases of external assessment in your institution:



3.1. External Examiner System



3.2 How often do you have visits and/or reports from the external examiner/s?

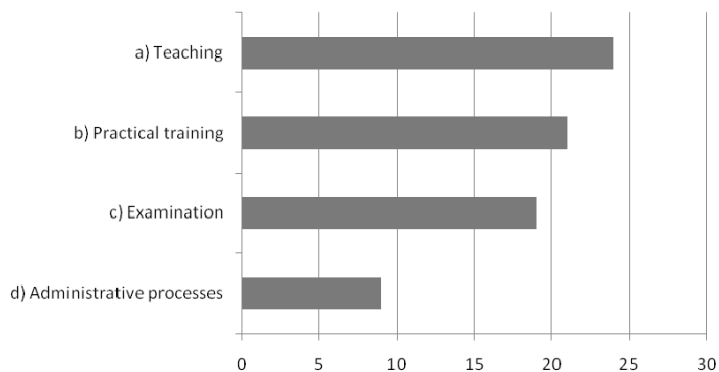


Section 4: General Views

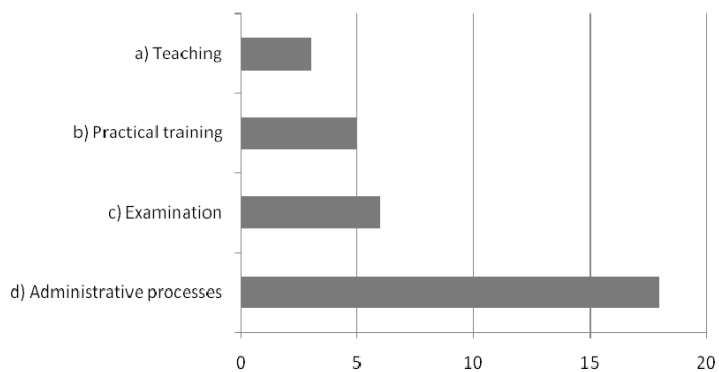
- ***4.1.1 Do you think that preparing a pilot IAMU accreditation scheme will be beneficial to IAMU member institutions?***
 - 26 institutions consider a pilot IAMU accreditation scheme as beneficial,

- ***4.1.2 Would you (your institution) be willing to take part in such a pilot IAMU accreditation scheme?***
 - 18 are ready to participate.

4.1.3 In which areas can the IAMU accreditation system offer major improvements?



4.1.4 In your opinion, which areas should be excluded from the IAMU accreditation scheme?



4.2.1 If the IAMU member institutions agree to prepare a PILOT accreditation scheme, on voluntary basis, to who should such accreditation be entrusted to?



Conclusions

- A possible IAMU accreditation scheme should be designed “by the member institutions for the member institution” (“internal accreditation”).
- Therefore, accreditation is seen not as rewarding process for the chosen elite but as a tool for improving the quality of each and every member institution, provided such an institution is willing to commit itself to additional efforts and to be subjected (or partly subjected) to accreditation.

Conclusions

- The accreditation process should be clearly defined and made available to all member institutions, not only to those being accredited.
- The IAMU accreditation scheme should not be designed as replacement for ISO 9001 system or any other quality assurance system, external examiners system or a national accreditation system.

Conclusions

- The IAMU members are the institutions providing university-level education; consequently, the teaching standards referred to in the IAMU accreditation process must be those commonly associated with university education.

Conclusions

- The IAMU accreditation scheme should focus on education processes and academic excellence.
- Issues considering internal organization, technical support and other organizational structures should be dealt with only if they significantly affect education processes.

Conclusions

- The IAMU accreditation scheme, if proposed and adopted, should not create additional workload on educational institutions and, in order to be successful, should apply a much softer - "collegial", peer approach.
- The IAMU accreditation scheme should be tied to particular study programme.

Conclusions

- It should not require any preparatory work; moreover, it should not require preparation or provision of any additional documentation apart from what is routinely maintained by the institution (available on the web or otherwise).
- The costs of accreditation should be kept as low as possible, thus making process available to as many members as practicable.

Next step – > Phase 2

- Task 0: Project objectives and methodology for an IAMU accreditation
 - to define the scope and timeframe of accreditation processes
 - to define methods of accreditation involving IAMU member institutions

Next step – > Phase 2

- **Task 1: Building a framework of the accreditation scheme**
 - to list up the items to be checked during the accreditation visit
 - to define criterion for the items to be checked

Next step – > Phase 2

- **Task 2: Potential and capacity of the IAMU as an accreditation body**
 - to define the area that the IAMU can cover
 - to develop principles and rules for the IAMU accreditation
 - to define qualifications required for visiting experts

Next step – > Phase 2

- **Task 3: Human resources - training and expertise required for the accreditation visit**
 - to develop knowledge and skills for the visiting experts
 - to develop a training programme for the accreditation officers
 - To define role of IAMU in developing and training human resources

Thank you for your attention!

PEER ASSESSMENT OF MARITIME COLLEGE PROGRAMMES

*Boris Butman, USMMA
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IMLA, Opatija, 2011



Objective and expected results

Apart from specific mandatory requirements, the principal objective of assessment and accreditation of an educational programme is improving its quality and bringing it up to a level commensurate with the leading educational institutions



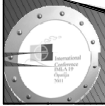
Variety of accreditations

A. Formal accreditation

1. as a college level programme –
by a National Higher Education Body
2. as a marine license programme –
by an IMO/STCW associated Government Body
3. as a specialized programme –
by a professional associations
4. as an engineering programme –
by ABET, British Engineering Counsel, etc.

B. Informal accreditation

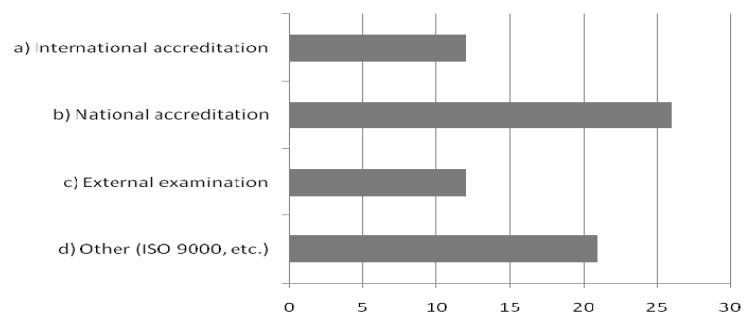
peer assessment



Survey of maritime educational institutions

- Scope:*
- 33 institutions
 - 144 BS programmes
 - 98 MS programmes

Assessment experience:



Benefits of program assessment and accreditation

- *Internationalization of higher MET that requires continuous improvement of existing programmes*
- *Close co-operation with principal stakeholders (maritime administrations, shipping industry, national educational authorities, alumni, accreditation agencies and networks, etc.)*
- *Cooperation among MET institutions and individuals by establishing new mechanisms of collaboration*
- *Increased role and respect of MET institutions within the national system of higher education*



Peer assessment vs. formal accreditation

Principal advantages:

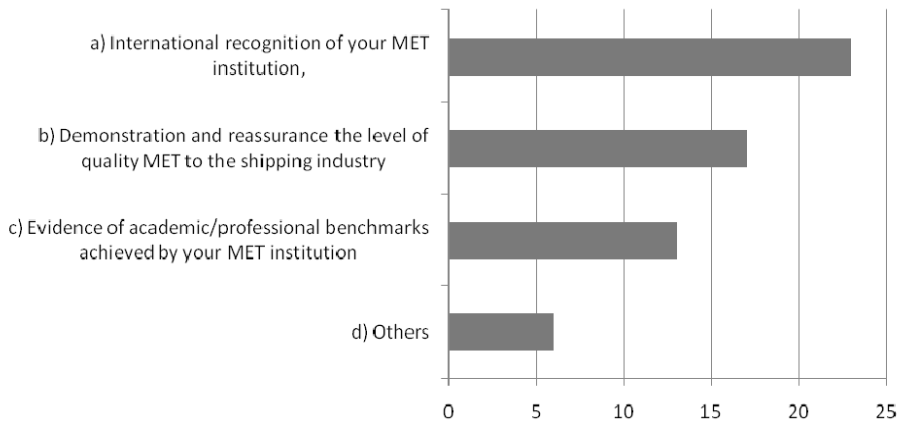
- a. No massive data collection system created*
- b. No exhausting self-study reports required*
- c. Instant results are provided and immediate implementation is possible*

Principal shortcomings:

- a. Less thorough and loosely structured*
- b. No formal recognition and reward*



Expected benefits of assessment (as per survey)



Classification of maritime programmes

Variety of maritime educational programs might be subdivided into four groups:

I. Navigation

(Ship Operations, Maritime Logistics, Marine Transportation, etc.)

II. Maritime Business and Economics

- a. Maritime Business and Management
- b. Maritime Economics and Finance

Classification of maritime programmes (cont.)

III. Marine Engineering

a. Marine Electrical Engineering

(incl. Control and Automation, Radio Engineering, Computer Engineering and similar titles)

b. Marine Engineering

(incl. related programmes like Ocean and Transport Engineering, Safety and Environmental Engineering, Other Ocean Engineering, General Engineering and Facilities. etc.)

c. Shipbuilding and Offshore Structures

IV. Other Maritime-related Programmes

Maritime Law, Maritime Professional Communications,

etc

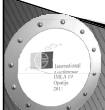


Peer assessment principles and tasks

Primary element is on-site visit by a team of peer-experts and preparation of an assessment report with recommendations

Preliminary actions:

- a. generating the agenda and guidelines for an on-site assessment,
- b. developing standards and metrics for assessment,
- c. assembling a Panel of Experts or a Committee to be involved in peer assessment activities



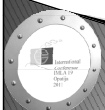
Assessment parameters

1. *Programme organization and management*
2. *Students*
3. *Curriculum*
4. *Teaching process*
5. *Study process*
6. *Faculty and support personnel*
7. *Internship and professional training*
8. *Facilities and resources*
9. *Outcome evaluation*
10. *Continuing education*



1. Programme organization and management

- a. *general information (the programme history, options and concentrations, the delivery modes, and also the previous evaluation attempts)*
- b. *mission of the institution and objectives of the programme*
- c. *conformity of the programme with the national and international standards and requirements*
- d. *organizational structure of the programme and system of monitoring faculty and student performance*



2. Students

- a. student body structure and retention practices*
- b. evaluating student performance*
- c. transfer students and transfer courses*
- d. graduation requirements and graduation audits*
- e. student calendar, work load and learning conditions*
- f. development of critical thinking skills, student participation and involvement*



3. Curriculum

- a. assessing the curriculum vs. the educational objectives of programme and the learning outcomes*
- b. analysis of the specific curriculum areas, and their share in the total credit load*
- c. textbooks and reference materials available*
- d. course outlines, and completed course work, projects and papers, tests and exams*
- e. development of communication skills, as well as broad understanding of global, economic, cultural and societal issues*



4. Teaching Process

- a. primary teaching modes employed by faculty*
- b. modern techniques (multimedia devices, internet-based information exchange)*

5. Study process

- a. combination of classroom teaching and after hours studying*
- b. academic calendar and its impact on student performance*
- c. availability of facilities for study*



6. Faculty and Support Personnel

- a. composition, size, credentials, and experience of faculty and support personnel*
- b. faculty selection and retention*
- c. faculty professional development and scholarly activities*
- d. faculty interaction with students*

7. Internship and Professional Training

- a. organization and monitoring of professional training*
- b. feedback from internship sites*



8. Facilities and Resources

- a. classrooms and laboratory base*
- b. institutional support and resources*
- c. library and other support facilities*

9. Outcome Assessment

- a. shareholder involvement in programme*
- b. industry feedback and programme improvement*

10. Continuing Education

- a. graduate school enrolment*
- b. upgrading licenses, obtaining new certificates*



Accreditation metrics

- Use of assessment metrics is encouraged but limited due to time-consuming and labor-intensive development process*
- Readily available metrics should be employed (literature sources, SAT scores, high school ranking, class sizes, student/faculty ratio, etc.)*
- For licensed programmes special metrics are used: number of certificates received, data on license exam passing, average time to graduate*



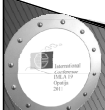
Visit agenda

- ▶ *meeting with programme leaders and heads of the institution*
- ▶ *interviews with groups of students (in small groups)*
- ▶ *individual interview with faculty and staff*
- ▶ *survey of curriculum, completed work, tests and exams*
- ▶ *on-site visits of facilities*
- ▶ *interviews with representatives from relevant industry*



Assessment Report

- ▶ *Report contains findings: simple statements of fact along ten assessment categories*
- ▶ *Findings are compared with predetermined standards or benchmarks*
- ▶ *A set of recommendations on possible programme improvement is offered*
- ▶ *Personal experience and qualification of assessor play a major role in analysis and recommendations*



Specifics and limitations

- *Assessment process should be clearly defined and made available to all participating institutions, not only to those being accredited*
- *Assessment process should not create additional workload for educational institutions and, in order to be successful, should apply a much softer – “collegial”, peer approach*
- *Assessment procedure should be tied to particular study programme*

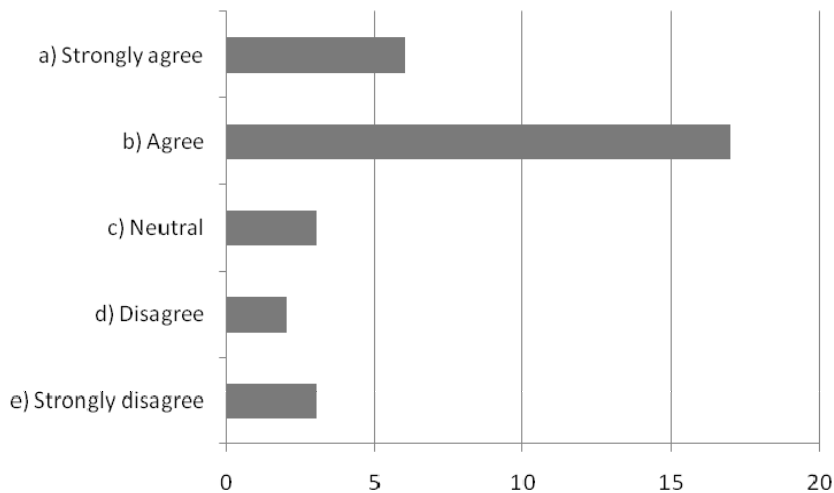


Specifics and limitations (cont.)

- *It should not require any substantial preparatory work; moreover, it should not require preparation or provision of any additional documentation apart from what is routinely maintained by the institution (available on the web or otherwise).*
- *Costs of accreditation should be kept as low as possible, thus making process available to as many members as practicable.*



Readiness to participate in assessment/accreditation process (as per survey)



Conclusion and Further Tasks

Development and implementation of peer assessment practices are very useful.

The further study tasks are:

- *draft of agenda and procedures,*
- *pilot visit of a maritime institution for an on-site assessment of a program,*
- *agenda and procedures based on pilot visit results,*
- *assembly of a panel of educators and industry professionals, including retirees, with high reputation and knowledge in specific subjects to offer an opinion on programme content and quality.*

Thanks for your attention!

Any questions?





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Conference
IMLA 19
Opatija
2011

Peer Assessment of Maritime College Programmes

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Abstract

This paper discusses some of practical aspects of maritime programme review when it is carried out by highly experienced professionals in order to identify weaknesses and shortcomings and provide recommendations for the programme improvement. This approach is used on occasions and primarily on a consulting basis. There are quite substantial dividends that peer assessment of a programme provides. Arguably, a qualified review of a programme far exceeds the value of professional conferences where typically a limited number of topics are covered. Moreover, the relevance of conference discussions to specific programmes is often unclear. Programme review made by an expert brings instant results ready an immediate implementation. If such an assessment is carried out under the umbrella of a professional association, its value substantially increases and the corresponding costs decline. The paper examines the advantages of a peer assessment, and also the benefits for both, the programme which is being assessed and the assessor. Based on thorough analysis of widely used methods of programme evaluation and accreditation, principal components or categories of a programme peer review are identified bearing in mind the requirement to limit the scope and to avoid lengthy preparations especially by the subject of the assessment. The attempt is made to propose a variety of assessment tools in the form of direct and indirect metrics for the categories of assessment.

Key words: maritime education and training, college maritime programmes, accreditation, evaluation metrics

1. Introduction

Realising that the demand for competent seafarers and graduates of non-licensed maritime-related programmes will grow in the years to come, it is essential to continuously improve maritime education and training in order to meet this demand and expectations. This has also been acknowledged in the revised STCW 95 Convention, which incorporates requirements to quality assurance principles in all mandatory maritime education and training and in the operation of related facilities.

Globalization has increased the tendency of maritime practice to be international in scope, and thus has led to the need for the certification of graduates who want to practice in venues other than the one in which they were educated. Assessment and subsequent accreditation of maritime educational programmes had evolved as the primary basis upon which mutual recognition across national borders is based – both for educational equivalency, and increasingly for practice. The principal objective of the assessment and accreditation of an educational programme is improving its quality and bringing it up to a level commensurate with the leading educational institutions. Similar to other higher education programmes, undergraduate maritime-related programmes are routinely subjected to an obligatory accreditation by national accreditation bodies. Due to the specifics of the maritime programmes, many of them, especially the license programmes, undergo a two-tier accreditation: a) as college level programmes – by a National Higher Education Body, like a Ministry of Higher Education in many countries, or the Middle States Association of Colleges and Schools, like in the case of the U.S. Merchant Marine Academy in New York, and b) as marine license programmes – by a STCW associated Government Body, like the U.S. Coast Guard in the USA, Technical Panel for Maritime Education in the Philippines, or Russian Ministry of Transport. In addition, many marine engineering programmes are also accredited by a Government or non-Government Accreditation institution, like American Accreditation Board for Engineering and Technology (ABET), or the UK Engineering Council.

2. Scope of Study

The authors carried out a feasibility study of possibility of establishing an accreditation system for the college-level maritime educational programmes based on a comprehensive survey of over thirty leading maritime institutions. Relevant to the content of this paper, the principal conclusions of the study are as follows:

- a. Wide variety of definitions has been narrowed to the following: “accreditation is a process of a formal quality assessment of a programme by evaluating its compliance with predefined objectives and standards, which is resulting in a formal published statement and an award of a status with subsequent regular examinations of a progress made”
- b. Irrespective of the challenges and caveats of accreditation, and based on the study of the developments in international higher education and training, the following advantages of accreditation in MET can be predicted:
 - Internationalization of higher MET requiring improvement of the existing programmes,
 - Close co-operation with principal stakeholders (maritime administrations, shipping industry, national educational authorities, degree students, accreditation agencies and networks, recognition centres, etc.),
 - Cooperation among MET institutions and individuals by establishing new mechanisms of cooperation,

Increased role and respect of MET institutions within the national system of higher education.

Although widely acknowledged as a valuable procedure, non-compulsory academic accreditation primarily applies to technically oriented or applied scientific programmes, such as marine

engineering or information technology. Relative to non-technical maritime fields, the concept of formal accreditation has not been fully developed and tested yet. Besides, a sufficient database is also not available. Recognizing that formal accreditation is a complex process which starts with an assessment or evaluation, and gradually shifts to an accreditation, the authors decided to concentrate on the assessment stage of the process.

The paper discusses some of practical aspects of a quite specific type of maritime programme assessment when it is carried out by highly experienced professionals in order to identify weaknesses and shortcomings and provide recommendations for the programme improvement. This approach is used on occasions and primarily on a consulting basis. There are quite substantial dividends that peer assessment of a programme provides. Arguably, a qualified review of a programme far exceeds the value of professional conferences where typically a limited number of topics are covered. Moreover, the relevance of conference discussions to specific programmes is often unclear. Programme review made by an expert brings instant results ready an immediate implementation. If such an assessment is carried out under the umbrella of a professional association, its value substantially increases and the corresponding costs decline.

3. Peer assessment principles

Several hundred educational institutions in the world provide various types of maritime education. All of them might be subdivided into four groups:

- a. Maritime schools and academies offering programmes leading to a license of a marine officer
- b. Maritime academies and universities offering combined programmes leading to a marine license and to an academic degree
- c. Universities and colleges offering non-licensed programmes leading to an academic degree
- d. Maritime schools, union schools and training centers offering individual maritime courses (advanced courses intended for upgrading the license, various certificate courses, such as ISM, security, new engine/equipment operation, etc. and various re-training courses)

The three first groups of the educational institutions are the primary subjects of this paper.

The above mentioned feasibility study included a comprehensive survey of over thirty leading maritime institutions which are offering over 250 various programs in total. In order to develop procedures for assessing the programme, this variety has to be drastically condensed. Firstly, only maritime related programmes are considered, and secondly, all programmes are subdivided into four principal divisions: *Navigation, Business and Management, Engineering and Others*. The following programme groups are considered for this paper:

- I. Navigation including Ship Operations, Maritime Logistics, Marine Transportation, and similar titles.
- II. Maritime Business and Economics
 - II.1. Maritime Business and Management
 - II.2. Maritime Economics and Finance
- III. Marine Engineering
 - III.1. Marine Electrical Engineering, including Automation and Control, Radio and Communication Engineering, Computer Engineering and similar titles
 - III.2. Marine Engineering, including related programmes (Ocean and Transport Engineering, Safety and Environmental Engineering, Other Ocean Engineering Programmes, General Engineering and Facilities. etc.)
 - III.3. Shipbuilding and Offshore Structures

IV. Other Maritime-related Programmes like Maritime Law, Maritime Professional Communications, etc.

This condensed assortment of maritime programmes allows formalizing the assessment routine. A peer assessment agenda and procedures might be developed for a typical programme representing each of the above groups. In terms of practical implementation of the assessment, the above group titles might be used to identify the initial panels of evaluators (assessors) and the initial assessment plans, or rather agendas. The assessment team might consist of two-three experts, and one of them should be an expert in the appropriate group of programmes. For instance, if the programme to be assessed is Maritime Economics, one of the members should be intimately familiar with the Maritime Business Subjects.

Practical implementation of peer assessment of maritime programmes should include several necessary steps:

- a. generating agenda and procedures for peer assessment,
- b. developing standards and metrics for assessment of programmes,
- c. assembling a Panel of Experts or a Committee that should be involved in peer assessment

4. Assessment parameters

Bearing in mind that any college-level educational programme is a complex, multi-faceted entity, it is important to structure the assessing procedure by setting the principal parameters or categories to be assessed. The authors have undertaken a comprehensive analysis of the existing accreditation procedures, both formal and informal ones. The European Union approach, as well as several National accreditation systems, have been reviewed. The international maritime training and certification requirements of the STCW Convention which were introduced into legislations of all maritime countries, setting the minimum level of training of seafarers.

In the US and UK many engineering programmes are accredited by ABET and IMarEST. These accreditations are actually based on a programme assessment by a group of experts, although very structured and formalized. Some colleges and universities use on occasion less formalized and structured approach, although also based on the expert evaluation. For instance, DNV has created a Committee of Experts made up of members from the Industry with in-depth knowledge and experience in the specific areas and in STCW standards. This Committee is involved in certification of the maritime educational programmes “with an objective to ensure uniform quality of training in the maritime industry, regardless of location, operation and training methods”.

Based on a survey of existing programme assessment methods and also on the personal experience, the authors propose a set of ten parameters or categories to be used in assessing maritime programmes by a panel of experts from the leading maritime educational institutions:

- a. Programme organization and management
- b. Students
- c. Curriculum
- d. Teaching process
- e. Study process
- f. Faculty and support personnel
- g. Internship and professional training
- h. Facilities and resources
- i. Outcome evaluation
- j. Continuing education

The following are the brief outlines of the suggested specific areas and subjects to be analyzed in each of the assessment categories:

a. Programme Organization and Management

This is an introductory category which sets the foundation for the entire assessment process. General information on the programme is collected and analyzed including the programme history, options and concentrations, delivery modes, and also previous evaluation attempts. A discussion of the educational policy of the institution and the programme might be required. The mission of the institution is compared with the objectives of the programme. Special attention is given to the conformity of the programme with national and international standards and requirements. The assessor evaluates the organizational structure of the programme and the system of monitoring faculty and student performance. Recently many educational institutions have established a quality management system which is often based on the ISO-9000 standard. If available, the actual functioning of the system, and the audits and corrective actions should be evaluated.

b. Students

The analysis of the student body in terms of its structure and retention practices is the subject of this category. The entire process of handling students from admission requirements through graduation should be thoroughly evaluated. The points of a specific interest are evaluating student performance, transfer students, transfer courses, graduation requirements and graduation audits to assure that every student completes the course of studies. Transcripts of recent graduates might be reviewed. Another area of interest is the student calendar, work load and learning conditions – these are very important components of student learning. The results of meeting with students and their feedback are analyzed. Development of critical thinking skills, student participation and involvement are also studied.

c. Curriculum

This category should provide an opportunity to delve into the academic content of the programme. A great deal depends on the personal experience of the evaluator, his/her previous exposure to similar programmes, and choice of a benchmarks. The goal is to assess how the curriculum corresponds with educational objectives of the programme, and the level of support that the curriculum provides to the achievement of the learning outcomes by all students. The assessment of the curriculum might be supported by developing a flow-chart of the prerequisite structure of the programme's required courses.

It is absolutely necessary to subdivide the entire curriculum into the specific areas, and analyze their share in the total credit load. Such a subdivision is highly dependent on the programme orientation. For instance, the engineering programmes should address the following curricula areas: mathematics, science, engineering science, marine engineering, humanities and general education. For each curricular area a specific analysis is carried out in order to assess how the programme satisfies the requirements for the learning skills and outcomes to be acquired. The textbooks and reference materials available for the students should be evaluated in terms of the subject coverage and their academic level. It is imperative for the evaluator to familiarize himself with the course outlines, and also with the samples of completed course assignments, projects and papers, tests and exams. Very valuable information might be obtained in the personal interviews of the instructors involved in the specific curricular areas.

The ultimate goal of any college-level programme is to develop a well-rounded graduate who combines good professional skills and knowledge with a high quality general education outcome. The latter means that the graduate should possess good communication skills, as well as broad understanding of global, economic, cultural and societal issues.

d. Teaching Process

The evaluator appraises the primary teaching modes employed by the faculty – lectures, seminars, practical recitals, discussions. The use of modern techniques such as multimedia devices, internet-based information exchange and grading should be stressed. For professional maritime programmes another item of high importance should be assessed – the development of the practical skills of students.

e. Study Process

Learning is a combination of classroom teaching and after hours studying. Therefore, the availability of facilities which might be used for study is an important component of a programme. For instance, computing resources (workstations, servers, storage, networks including software) should be available to all students via various locations such as student housing, library, student union, off-campus, etc. They should also be sufficient to support the scholarly and professional activities of the students and faculty in the programme. Another important area for evaluation is the academic calendar and its impact on student performance. Overloading and broken course sequence should be avoided. Interviewing students and analyzing the calendar are the needed elements of assessment.

f. Faculty and Support Personnel

This category should be devoted to a comprehensive evaluation of the qualifications of the faculty and the personnel that supports the teaching process – secretaries, teaching assistants, laboratory technicians, computer and multimedia professionals, maintenance people, and others. The principal subjects of the evaluation are the composition, size, credentials, and experience. The underlying question for the evaluator is the ability of the faculty to adequately cover all the curricular areas of the programme.

Among other important items for the analysis are faculty selection and retention, professional development, scholarly activities and participation in symposiums and conferences. The level of faculty interaction with students should be assessed, as well as faculty involvement in the maritime industry. For the licensed instructors who are teaching professional subjects an important factor is proper upgrading of their credentials. The authority and responsibility of the faculty, the role they are playing in the development and implementation of the programme components and in the continuous improvement of the programme should be adequately addressed.

g. Internship and Professional Training

License-oriented maritime programmes normally involve a great deal of professional training, onboard training ships, or as cadets on commercial ships. Organization and monitoring of the professional training is a vital element of the programme and should be evaluated based on the information from the training department and also by analyzing the training documentation. In the case of non-licensed programmes, the professional training often takes the form of internships in ports, shipping companies, shipyards or other industry outfits. How well it is organized and monitored and feedback from the internship sites provide a good indication of the programme outcome.

h. Facilities and Resources

This category serves to assess the teaching environment including the classrooms and laboratory base in terms of their ability to support the achievement of intended programme outcomes. The faculty offices and the classrooms are evaluated for their capability to provide a learning atmosphere. The laboratory facilities should be sufficient to meet the programme requirements and also reflect the current level of the industry. It concerns especially the computer resources in the laboratories as well as in the classrooms. Special attention should be given to assessing capability of the library to serve the programme including the adequacy of the library's collection

relative to the needs of the programme and the faculty. It might be useful to evaluate the process by which faculty may request the library to order books or subscriptions, and to locate and obtain electronic information.

Institutional support through the allocation of resources and organizational arrangements is an essential part of programme resources. The assessment should reveal how resources are provided to acquire, maintain and upgrade infrastructure, facilities and equipment. In addition, the assessment should also detail how teaching is supported by the institution in terms of teaching assistants, teaching workshops, etc. It is essential to develop an understanding of the involvement of the programme leaders in the decisions that affect the programme.

i. Outcome Assessment

Any educational programme is only as good as the grades it receives from customers. The customers of the programme are normally the industry and the employers of graduates. From this standpoint it is highly desirable for the assessment team to meet with customer representatives and to obtain their perspectives regarding the quality of the programme. If the quality assurance system has been adapted by the institution, the latest audit report might be quite useful. Another effective indication of the programme outcome is the industry involvement in its functioning. Various industry advisory panels, direct involvement of the industry representatives into the teaching process, feedback from the internship sites – are all valuable indicators of the programme quality.

Even more important is to evaluate the efforts aimed on the programme continuous improvement based on the routine analysis of the industry feedback, and also on the faculty observations and on the student recommendations. Any significant future programme improvement plans should be analyzed.

j. Continuing Education

High quality educational programmes should provide an incentive for further education after graduating from the programme. The assessment of this category includes graduate school enrolment, upgrading licenses, obtaining new certificates and other professional licenses, etc. The employment history indicating the professional development of former graduates might be a good indication of the life-long teaching habits developed in the programme.

5. Accreditation metrics

According to the widely accepted definition, assessment is a process that identifies, collects, and prepares data in order to evaluate how the programme achieved the predetermined educational objectives and outcomes. In the formal accreditation process the principal tools of the assessment are qualitative and quantitative metrics, which are to be developed prior to the commencement of the process by the institution which wants to be accredited. This is a tedious and labour intensive endeavour. Given that one of the principal requirements of peer assessment is to minimize the amount of work needed to be done by the institution, the system of assessment metrics should be simplified as much as possible.

The process of setting the assessment metrics requires a thorough analysis of the assessment categories in order to identify the principal tools to be used. Most of these tools are of the qualitative nature allowing the assessor to be able to compare with a benchmark primarily on the basis of *better than*, *worse than* or *equal*. Quantitative metrics allow a more objective approach, but their development requires analyzing tons of information. Besides, in order for the metrics to be used, a system of data collection is required. As was discussed above, the peer assessment should be simplified, and only widely used metrics are proposed. Good examples are provided by the bodies that offer ranking of colleges based on the standard set of metrics. Several of them

appear useful in our case: SAT scores for admission, high school ranking, class sizes, tuition, student to faculty ratio, etc.

Some specific metrics have been developed by maritime schools, primarily for licensed programmes: number of certificates received, percent of students passing license exam, average time to graduation, etc. A more complex metric is obtained by a thorough statistical analysis of similar maritime programmes offered by different institutions: a statistical average of the weight of the programme components. Based on this metric the programmes might be compared with the statistical average which is considered a benchmark. This approach is available for the marine engineering programmes where the statistical average curriculum has been developed.

6. Accreditation report

The agenda of the peer assessment visit has, in general, the same format as the formal accreditation process. However, due to the requirement to minimize the pre-visit paperwork, the assessor develops his own data prior to and during the visit. The principal elements of the visit agenda are as follows:

- meeting with the programme leaders and heads of the institution
- interviews with groups of students (in small groups)
- individual interview with the faculty and staff
- survey of the curriculum, completed work, tests and exams
- on-site visits of the facilities
- interviews with representatives from the relevant industry.

The report should contain the findings along the ten assessment categories based on the preset metrics. The findings are simple statements of fact and/or shortcomings related to a specific assessment category. The assessor then compares the findings and the metrics with the predetermined standards or benchmarks, and offers recommendations on the possible improvement of the programme. Due to the fact that the metrics are considerably simplified, the personal experience and qualification of the assessor will initially play a major role in the analysis of the findings and the subsequent recommendations. As the system develops and substantial experience is attained, the database will be more readily available and reliance on the qualification of the individual will diminish.

7. Conclusions

It is the firm opinion of the authors that the continuous analysis of assessment and accreditation practices related to maritime programmes should become a permanent task of the maritime education community.

Based on the feasibility study and the survey of the leading maritime schools, the authors intend to continue the study which will include:

- Development of the draft of agenda and procedures,
- Conducting a pilot visit of a maritime institution for an on-site assessment of a program,
- Further development of the agenda and procedures based on the results of the pilot visit,
- Identifying a panel of educators and possibly industry professionals, active as well as retirees, who have achieved high reputation and substantial knowledge in the specific programme related subjects, and who would offer an expert opinion on the programme content and quality. This panel might eventually be turned into an accreditation body.

One of the most important reasons for the assessment of a maritime programme is the ability of the graduate from the Programme not only to serve on the ship of another country, but also to be able to continue his education in the maritime college of another country. It is therefore vital to have a professional association and/or a reputable institution involved in assessment, which will assure that the academic credits are recognized.

Acknowledgement

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Pilot study visit to Maritime Institute Willem Barentsz

ACCREDIMET Phase II

Date: 9 – 12 November 2011

Visitors: Takeshi Nakazawa, Professor, World Maritime University
 Damir Zec, Vice Rector, University of Rijeka
 Vlado Frančić, PhD Candidate, University of Rijeka, Faculty of Maritime Studies
 Boris Butman, Professor, United State Merchant Marine Academy

Time	Items	Participants (except the visitors)	Venue
9 November (Arrival day)			
1500 – 1700	Visitors' meeting (kick-off) - Confirmation of tasks of the visit		On a Ferry
1800 – 2000	Visitors' meeting - Visit procedure & points to be confirmed		Hotel Skylge, Terschelling
10 November (Day ONE)			
0900 – 0930	Opening meeting Introduction of visitors & objectives of the visit	Mr.G. van Leunen, Director Mr.Krijnen, Dean Mr.Cupido, Assistant	MIWB
0930 – 1100	Technical tour in the institution - Class room, laboratories, simulation centre and library	Mr.Cupido, Assistant	
1100 – 1300	Interview with teaching staff - Issues on teaching and staffing	Mr. W. van Leunen, Lecturer	
1300 – 1430	Working Lunch - Issues on teaching and staffing (continued)		
1430 – 1450	Participation to a class room - Engine room watch II (17 students of 2 nd year) - Practical lecture using PC based simulators	Mr.Cupido, Assistant Mr.Bonnema, Lecturer	
1450 – 1520	Interviews with the lecture and students of the class - Lecturers' qualifications - Students' comments on the lecture	Mr.Bonnema, Lecturer 3 students (2 nd year) <i>Interviews were done separately</i>	
1530 – 1615	Interview with the dean of study	Mr.Krijnen, Dean	
1700 – 2000	Visitors meeting - Drafting the visit report		Hotel Skylge, Terschelling
11 November (Day TWO)			
0900 – 1030	Interview with the quality manager - Program and course curriculum	Mr.Spanjer, Lecturer	MIWB
1030 – 1100	Interview with teaching staff - Program and course curriculum	Mr. van den Oever, Head of Engineering	
1100 – 1140	Presentation of educational activities - Outline of training activities at MIWB	Mr. Werner, Head of training	
1140 – 1240	Interview with students (4 th year) - Students' comments on the whole program and campus life	4 students (4 th year)	
1240 – 1345	Lunch		
1345 – 1600	Visitors meeting - Drafting the visit report		
1600 – 1645	Closing meeting - Appreciation for ACCREDIMET activity - Development of the project report	Mr.Krijnen, Dean	
1730 – 1930	Visitors meeting - Drafting the visit report and preparation for the final report		Hotel Skylge, Terschelling
12 November (Departure day)			
1230 – 1400	Visitors' meeting (wrap-up) - Further development of ACCREDIMET		Ibis hotel, Amsterdam

Pre-Visit Workbook

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General information		
Assessment Items	Preliminary findings	Sources (Catalogue, Brochures and Website)
a) Institution (Official Name)		
b) Programme (Official title)		
c) Visit date		
d) Assessment team members	(Leader evaluator) (Evaluator) (Evaluator) (Evaluator)	
e) Visit agenda and itinerary		

1. Programme organisation and management		
Assessment Items	Preliminary findings	Sources (Catalogue, Brochures and Website)
a) Institution provides general information as well as information on programme history, options and concentrations, delivery modes and previous evaluation attempts.		
b) Mission of the institution and objectives of the programme are clearly presented to the students (both prospective students and those already enrolled).		
c) Study programmes are in compliance with national and international applicable standards and requirements (formal proofs of compliance are presented to evaluators).		
d) Organizational structure of the programme is presented to the evaluators.		
e) System of monitoring faculty members and student performance is in place.		
f) Programme funding is ensured and resources are available for all students to successfully graduate.		

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2. Students	Assessment Items	Preliminary findings	Sources (Catalogue, Brochures and Website)
a)	Admission requirements are clearly stated and appropriate for the programme evaluated.		
b)	Enrolment policy ensures appropriate student body structure.		
c)	Expected study load and learning conditions are adequate for the programme evaluated.		
d)	Programme includes significant development of critical thinking skills.		
e)	Programme requires extensive student participation/involvement.		
f)	Evaluation system of student performance is in place and appropriate for the programme goals.		
g)	Programmes organization provides measures to minimize drop-out rates.		
h)	Mentoring and advising system for underperformers is in place.		
i)	Graduation requirements are clearly presented and procedures for graduation audits are in place.		
j)	There are scholarship opportunities for at least certain group of students.		
k)	There are possibilities for students' mobility and for transfer courses among different programmes.		

3. Curriculum		
Assessment Items	Preliminary findings	Sources (Catalogue, Brochures and Website)
a) Curriculum as a whole is appropriate and has requisite qualities for proclaimed educational objectives and learning outcomes.		
b) Curriculum suitably covers specific areas and their share in total credit load is appropriate.		
c) Required textbooks and other reference materials are appropriate and available.		
d) Course outlines and completed course work, projects and papers, tests and exams are appropriate for proclaimed educational objectives and learning outcomes.		
e) Curriculum contains courses dedicated to development of communication skills, including appropriate proficiency in English language.		
f) Curriculum contains general formative courses i.e. those dedicated to understanding of global, economic, cultural and societal issues.		
g) There are mandatory courses dedicated to develop teamwork skills.		
4. Teaching process		
Assessment Items	Preliminary findings	Sources (Catalogue, Brochures and Website)
a) Teaching modes are appropriately distributed among front-end lecturing, use of simulators and practical laboratories and exercises.		
b) Modern techniques (multimedia devices, internet-based education, information services) are available and appropriate for the proclaimed educational objectives and learning outcomes.		

5. Study process and student workload		
Assessment Items	Preliminary findings	Sources (Catalogue, Brochures and Website)
a) Distribution between classroom teaching and after hours studying is appropriate.		
b) Academic calendar is appropriate and does not negatively impact student performance.		
c) Appropriate facilities for studying are available and suitable for intended purpose.		
6. Faculty and support personnel		
Assessment Items	Preliminary findings	Sources (Catalogue, Brochures and Website)
a) Composition, size, educational credentials and experience of faculty members and support personnel are appropriate for the accredited programme.		
b) There is sufficient number of academic staff holding appropriate academic degrees.		
c) Student/lecturer ratio is appropriate for the available facilities and in line with proclaimed educational objectives and learning outcomes.		
d) Average on-board experience of academic staff and other personnel is appropriate for the accredited programme.		
e) The system of selection, promotion and retention of academic staff is in place.		
f) Measures for encouraging and ensuring professional development of academic staff are in place.		
g) There are appropriate level of interactions between academic staff and students.		

7. Professional training and internships		
Assessment Items	Preliminary findings	Sources (Catalogue, Brochures and Website)
a) The number and level of responsibility of certificates of competence awarded to the students are appropriate for the proclaimed educational objectives and learning outcomes and in line with on-board experience acquired during education at the institution.		
b) The system for monitoring professional training on board is in place (for institutions that issue CoCs).		
8. Facilities and resources		
Assessment Items	Preliminary findings	Sources (Catalogue, Brochures and Website)
a) Classrooms, laboratories and simulators correspond to the programme requirements.		
b) Institutional support and resources required for maintaining day-to-day education process are appropriate.		
c) Library and other learning-related support facilities are appropriate.		
d) Student support facilities (campus, playing grounds, supplies, cultural facilities) are appropriate.		

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9. Programme objectives and stakeholders involvement		
Assessment Items	Preliminary findings	Sources (Catalogue, Brochures and Website)
a) Stakeholders' participation in programme revision and further development is timely, well-organized and appropriate.		
b) The system to respond to stakeholders' feedback is in place.		
c) The system to track students' employment history and personal development is in place.		
10. Continuing education		
Assessment Items	Preliminary findings	Sources (Catalogue, Brochures and Website)
a) The institution provides opportunities for graduated students to continue their education, either at the institution or at other universities, and to get academic degrees.		
b) The institution provides opportunities for graduated students to obtain additional professional certificates (STCW) or other professional competencies.		

Peer Assessment Visit Workbook

1/6

1. Programme organisation and management		
Assessment items	Findings and Observations	Recommendations
a) Institution provides general information as well as information on programme history, options and concentrations, delivery modes and previous evaluation attempts.		
b) Mission of the institution and objectives of the programme are clearly presented to the students (both prospective students and those already enrolled).		
c) Study programmes are in compliance with national and international applicable standards and requirements (formal proofs of compliance are presented to evaluators).		
d) Organizational structure of the programme is presented to the evaluators.		
e) System of monitoring faculty members and student performance is in place.		
f) Programme funding is ensured and resources are available for all students to successfully graduate.		

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2. Students		
Assessment items	Findings and Observations	Recommendations
a) Admission requirements are clearly stated and appropriate for the programme evaluated.		
b) Enrolment policy ensures appropriate student body structure.		
c) Expected study load and learning conditions are adequate for the programme evaluated.		
d) Programme includes significant development of critical thinking skills.		
e) Programme requires extensive student participation/involvement.		
f) Evaluation system of student performance is in place and appropriate for the programme goals.		
g) Programmes organization provides measures to minimize drop-out rates.		
h) Mentoring and advising system for underperformers is in place.		
i) Graduation requirements are clearly presented and procedures for graduation audits are in place.		
j) There are scholarship opportunities for at least certain group of students.		
k) There are possibilities for students' mobility and for transfer courses among different programmes.		

3. Curriculum		
Assessment items	Findings and Observations	Recommendations
a) Curriculum as a whole is appropriate and has requisite qualities for proclaimed educational objectives and learning outcomes.		
b) Curriculum suitably covers specific areas and their share in total credit load is appropriate.		
c) Required textbooks and other reference materials are appropriate and available.		
d) Course outlines and completed course work, projects and papers, tests and exams are appropriate for proclaimed educational objectives and learning outcomes.		
e) Curriculum contains courses dedicated to development of communication skills, including appropriate proficiency in English language.		
f) Curriculum contains general formative courses i.e. those dedicated to understanding of global, economic, cultural and societal issues.		
g) There are mandatory courses dedicated to develop teamwork skills.		
4. Teaching process		
Assessment items	Findings and Observations	Recommendations
a) Teaching modes are appropriately distributed among front-end lecturing, use of simulators and practical laboratories and exercises.		
b) Modern techniques (multimedia devices, internet-based education, information services) are available and appropriate for the proclaimed educational objectives and learning outcomes.		

5. Study process and student workload		
Assessment items	Findings and Observations	Recommendations
a) Distribution between classroom teaching and after hours studying is appropriate.		
b) Academic calendar is appropriate and does not negatively impact student performance.		
c) Appropriate facilities for studying are available and suitable for intended purpose.		
6. Teaching and support personnel		
Assessment items	Findings and Observations	Recommendations
a) Composition, size, educational credentials and experience of faculty members and support personnel are appropriate for the accredited programme.		
b) There is sufficient number of academic staff holding appropriate academic degrees.		
c) Student/lecturer ratio is appropriate for the available facilities and in line with proclaimed educational objectives and learning outcomes.		
d) Average on-board experience of academic staff and other personnel is appropriate for the accredited programme.		
e) The system of selection, promotion and retention of academic staff is in place.		
f) Measures for encouraging and ensuring professional development of academic staff are in place.		
g) There are appropriate level of interactions between academic staff and students.		

7. Professional training and internships		
Assessment Items	Findings and Observations	Recommendations
a) The number and level of responsibility of certificates of competence awarded to the students are appropriate for the proclaimed educational objectives and learning outcomes and in line with on-board experience acquired during education at the institution.		
b) The system for monitoring professional training on board is in place (for institutions that issue CoCs).		
8. Facilities and resources		
Assessment Items	Findings and Observations	Recommendations
a) Classrooms, laboratories and simulators correspond to the programme requirements.		
b) Institutional support and resources required for maintaining day-to-day education process are appropriate.		
c) Library and other learning-related support facilities are appropriate.		
d) Student support facilities (campus, playing grounds, supplies, cultural facilities) are appropriate.		

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9. Programme objectives and stakeholders involvement		
Assessment Items	Findings and Observations	Recommendations
a) Stakeholders' participation in programme revision and further development is timely, well-organized and appropriate.		
b) The system to respond to stakeholders' feedback is in place.		
c) The system to track students' employment history and personal development is in place.		
10. Continuing education		
Assessment Items	Findings and Observations	Recommendations
a) The institution provides opportunities for graduated students to continue their education, either at the institution or at other universities, and to get academic degrees.		
b) The institution provides opportunities for graduated students to obtain additional professional certificates (STCW) and/or other professional competencies.		

Sample questions for interviews

1. For the programme leader

- What are the programme educational objectives, or what skills are student expected to obtain at graduation?
- What is your process for assessing the programme effectiveness?
- What changes have been made to the programme as a result of the assessment?
- Is a continuous improvement plan in place? (Ask for a copy of the plan if it is not included in the questionnaire or in the display material.)
- What is your process for making changes to the programme?
- How is the faculty performance assessed?
- Do the programme faculty credentials relate to the programme educational objectives and student outcomes?
- How successful is your graduate placement - job titles, starting salaries, placement rate, etc.
- How active is the industry advisory committee?
- What programme changes have been made because of their input?
- What are the strengths and weaknesses of your department and support departments?
- Are any major curriculum changes planned? What? When?
- What are the major needs for growth and development of the curriculum?
- Do you control a budget? Covering what?
- Do you make recommendations for faculty salary? For advancement?
- Do you have a plan for faculty professional development?
- How much time is available to the faculty for professional development?
- What is the budget for faculty professional development (travel funds, etc.)?
- What does the faculty do during the summer months?
- Who is responsible for certifying that students have completed requirements before graduating?
- What is the procedure for approving transfer credit, course substitutions, etc.?

2. For the individual staff members

- What graduate outcomes do the courses you teach support?
- Are you involved in the assessment/evaluation of programme effectiveness? How?
- Are you involved in programme improvements? How?
- Is reimbursement or other assistance available for professional development activities?
- How much time do you spend on professional development?
- What professional society are you a member of? Are you active? Hold any offices?
- How do you go about obtaining needed laboratory equipment?
- Does the same instructor usually teach both lecture and laboratory portions of related courses? If not, how are they coordinated?
- Is the salary structure satisfactory? What benefits are included?
- What unique or unusual teaching methods are used in your department?

- How has the industrial advisory committee affected this programme?
- How does curriculum change come about?
- Do you maintain regular contacts with industry? How?
- What changes should be made to improve the programme?
- Are the support departments providing appropriate educational services for your students?
- Is there adequate secretarial and technician service available to you?
- How large are the classes for lectures and for laboratories?
- How many contact hours are typical in a full-time workload of instruction?
- How do you consider yourself qualified to instruct in the programme?
- How is your industrial experience relevant to this programme?
- What is your role in the programme's continuous improvement plan?
- How is it the plan impacting the curriculum?
- Do you have and use a copy of the plan? How?

3. For the students (groups or individuals)

- Why did you choose this school and/or this programme?
- Do you know what skills you are expected to acquire (i.e., student outcomes) by graduation time?
- Are you acquiring the required skills?
- Are the faculty members competent in the subjects they teach?
- Are they available and helpful to you at times convenient to you?
- Are the laboratories well-equipped?
- Is the laboratory equipment well-maintained?
- How good is the hands-on experience?
- Do you plan to continue your education after graduation? Where? When?
- Do you plan to accept a job after graduation? Where? When?
- What type of job can you get as a graduate of this programme? At what salary?
- What is your overall view of the programme?
- Would you recommend it to a friend?
- Either you or your folks are paying for this education. Are you getting your "money's worth"?

PROGRAMME ASSESSMENT REPORT

Sample

Institution: SEASIDE Maritime Academy

Visit Dates: 1 – 5 January 2012

Assessment team: Prof. A. World Maritime University (Team leader)
Prof. B. American Maritime Academy
Prof. C. European Maritime University
Prof. D. Asian Maritime Academy

I. GENERAL OVERVIEW

Upon invitation from the Seaside Maritime Academy, the team evaluated the academic programmes. The primary goal of the assessment was providing assistance to the Seaside Maritime Academy in harmonizing their programmes with similar programmes in the leading world maritime institutions.

The assessed programmes

- BSc in Marine Engineering
- BSc in Maritime Navigation
- MSc in Maritime Economics and Management

The visit's agenda

The preliminary review and assessment has been done prior to the visit during the period of 15-20 November 2011 based on the materials provided by the SMA, and also on the data from the Academy's website.

The programme and working method

Prior to the visit, there was a general discussion about the tasks as seen by the team and about the Seaside state higher education standards with the Provost of the Academy Prof. J. During the discussions over the phone and by email correspondence, the frame of reference has been set.

The programme of the visit had in general the following format:

- meeting and interviews with the leaders/heads of the institutions
- meetings and discussions with the professors and instructors,
- familiarization with the laboratories and facilities,
- class observations,
- participation in professional sessions,
- informal discussion of various programme related subjects with the members of the Governing Board of the Academy, and the with representatives from the industry.

The assessment format

The outcome assessment systems are widely used in the evaluation of university programmes in European and American higher education institutions. The principal ideas of these systems were employed in this case. During the on-site discussions and observation, the undersigned tried to assess especially the organisation of the programmes, the way the curricula had been designed, the way the quality is being assured, the qualification of the staff, the research activities and all other specific points that most of academic programmes at maritime institutions have in common. The following parts are an example form for a BSc course for marine Engineering.

I. FINDINGS AND RECOMMENDATIONS

1. Programme organisation and management

- a) *Institution provides general information as well as information on programme history, options and concentrations, delivery modes and previous evaluation attempts.*

Findings: The SEASIDE Maritime Academy (SMA) is a higher education institution providing top quality maritime education and training, combining its own traditions and the latest international standards in developing seafarers, and also highly qualified specialists for other areas of maritime industry. The curriculum prepares students to take on leadership roles, encourages rigorous self-discipline, and provides graduates with the skills and knowledge needed to succeed in the global economy.

The Government of the SEASIDE Republic has founded the Academy and has been running it for the last 53 years. The following are the major steps in the Academy organization and development:

- in 1948 established as SEASIDE Maritime School,
- in 1998 renamed as University Maritime Institute College,
- in 2008 renamed as SEASIDE Maritime Academy

The Engineering Department is one of three educational departments (faculties) at the Academy

- Marine Navigation;
- Marine Engineering;
- Maritime Economics and Management;

- b) *Mission of the institution and objectives of the programme are clearly presented to the students (both perspective students and those already enrolled).*

Findings: The Academy has a clearly-defined mission and understanding of its duty to the society. Besides the Academy teaching and support staff, the representatives of employers have participated in formulating the Academy's mission: to be an internationally recognised professional higher education institution, to provide quality maritime education and to conduct applied research. The programme objectives correspond and based on the Academy mission.

- c) *Study programmes are in compliance with national and international applicable standards and requirements (formal proofs of compliance are presented to evaluators).*

Findings: The SEASIDE Maritime Academy educates marine engineers at professional higher education level. The education in this field has long traditions in SEASIDE Republic. The Academy takes into account the requirements caused by constant amendments to acts and regulations and updates frequently its curricula. The curriculum of marine engineering fulfils the requirements of the Standard of Higher Education. The curriculum is internationally recognised.

A special feature of marine engineering curricula is to meet requirements of the national as well as international governing bodies. On one side, the SMA's marine engineering programme reflects the National Standard of Higher Education, on the other side the curricula of the Academy correspond to the standards of the International Maritime Organization, specifically STCW, and also other maritime conventions and organizations.

- d) *Organizational structure of the programme is presented to the evaluators.*

Findings: The Rector of the Academy, Prof. E. is actively involved in both, development of the Academy curricula, and development of facilities and laboratories. The day-to-day operation of the faculty is managed by the Provost. Prof. G. The Marine Engineering Programme is headed by Prof. H. (An organizational structure of the Programme should be shown as appropriate.)

- e) *System of monitoring faculty members and student performance is in place.*

Findings: The procedures and regulations of the Faculty are laid down in the faculty bylaws, approved by the Academy Rector, and by the Governing Board.

- f) *Programme funding is ensured and resources are available for all students to successfully graduate.*

Findings: The programme is funded from the Government budget and from the student tuition.

RECOMMENDATIONS

- a. **Some terminology clarification might be suggested regarding the Academy organizational structure:**
- b. **Graduating (professional) department titles: Marine Engineering, Maritime Navigation, and Maritime Economics and Management**
- c. **Two support departments (or divisions): General Education (humanities and social science – language, history, philosophy, etc.) and Mathematics and Science (Math., Physics, Chemistry, etc.)**

2. Students

- a) *Admission requirements are clearly stated and appropriate for the programme evaluated.*

Findings: Admission requirements are set in the catalogue and are readily available to the candidates. Not very active flow of admission applications limits the development of range of the admission requirements.

- b) *Enrolment policy ensures appropriate student body structure.*

Findings: There is an abundance of higher educational institutions in Seaside Republic, therefore the Academy has to compete with other colleges and universities. The Academy is actively working on promoting the information of its programmes and facilities. The possibility of joining the specialized maritime school into the Academy is under consideration, which might bring additional enrolment.

Total number of full time students fluctuates between 420 and 450. The structure of the full time student body in 2008 was as follows:

Table 1 Structure of the full time student body in 2008

Specialisation	Share, %	No. of Graduates in 2008
Marine Navigation	45	33
Marine Engineering	37	24
Port and Shipping management	13	20
Port and Shipping finance	5	21

- c) *Expected study load and learning conditions are adequate for the programme evaluated.*

Findings: In general, study load does not appear to be an important issue. Only in the first year, the high number and variety of courses require a lot of work, too much for many students. When coming to professional studies the load is felt lighter, also because of their increasing of interest.

- d) *Programme includes significant development of critical thinking skills.*

Findings: No special programme for development of critical thinking skills.

- e) *Programme requires extensive student participation/involvement.*

Findings: Students have their representative in the Academy's Governing Board. However, it appears to be a subject for substantial improvement effort among the Administration and the faculty members.

- f) *Evaluation system of student performance is in place and appropriate for the programme goals.*

Findings: Normal procedure for monitoring the students achievements are examinations and exercises.

- g) *Programmes organization provides measures to minimize drop-out rates.*

Findings: No special measures are taken to minimize drop-out rates.

h) *Mentoring and advising system for underperformers is in place.*

Findings: No mentoring system is employed for the programme. Various type of informal counselling is available for the students. They get information they need from the instructors, as well as from the parents and relatives. The formal advising is limited to discussions on the choice of electives.

i) *Graduation requirements are clearly presented and procedures for graduation audits are in place.*

Findings: Graduation requirements are clearly stated in the curriculum listing and followed by the Registrar. No special graduation audits are maintained.

j) *There are scholarship opportunities for at least certain group of students.*

Findings: Due to a structured nature of this very demanding programme the scholarship opportunities are not offered to the students.

k) *There are possibilities for students' mobility and for transfer courses among different programmes.*

Findings: Student mobility is limited.

RECOMMENDATIONS

- a. **More information to potential students at high schools should be delivered**
- b. **A subject of student self-management might be considered based on the experience of Maritime schools with a stricter regimental system. Actually, basic features of a regimental system might be considered**

3. Curriculum

a) *Curriculum as a whole is appropriate and has requisite qualities for proclaimed educational objectives and learning outcomes.*

Findings: It is observed that the present content and structure of the curriculum is in compliance with the requirements of the National Standard of Higher Education, and also of the Standards of Training, Certification and Watchkeeping (STCW 95).

The objective of the curriculum is to enable students to build specified knowledge and skills, and gain qualifications which equip them for employment onboard ships as engineering officer, and to obtain knowledge and skills required for marine engineering profession, both onboard and ashore. The curriculum design is in correspondence with the aims and objectives for relatively strictly vocational curricula. Practical capabilities are emphasised instead of relations to research.

b) *Curriculum suitably covers specific areas and their share in total credit load is appropriate.*

Findings: The structure is balanced: first basic courses, then core courses, finally practical training. There are not too many options, but again that is in correspondence with the aim of the institution, which is to educate professional personnel for a certain capabilities required for these positions onboard.

Based on the available research data on standardization of marine engineering curricula, a comparative analysis has been made: the content of marine engineering programme at SMA was set against the standard marine engineering curriculum. The latter is a statistically averaged programme content based on the analysis of over 25 marine engineering curricula of various maritime universities and academies of the world. The Table 2 presents the results of this comparison.

As might be seen, the curriculum of the SEASIDE Maritime Academy compares quite closely with the average marine engineering programme. The total credit hour difference might be mainly attributed to the variation in methods of accounting for physical education courses, and also for practical work and internship. The principal discrepancy areas are in the Mathematics and Science area (at least, two courses shortage), and also in special marine engineering (at least three courses shortage). On the other side, two extra courses are offered in management and economics.

Table 2 Standard Marine Engineering Programme vs. SMA's Curriculum

Bachelor of Science in Marine Engineering (BSMarE) (4 years programme)					
Curriculum Components		Standard Programme		SEASIDE Maritime Academy	
No	Subject group	Weight, %	Credit Hours	Credit Hours	Difference
I. Mathematics & Science		11.6	20	13	-7
1	Mathematics	8.1	14	6	-8
2	Science	3.5	6	7	+1
II. Engineering Science		17.4	30	34	+4
1	Mechanics	3.5	6	3	-3
2	Materials	2.9	5	9	+4
3	Electrical	2.9	5	2.5	-2.5
4	Fluids	1.2	2	2	0
5	Thermodynamics	3.5	6	11.5	5.5
6	Naval Architecture	1.2	2	2	0
7	Computer Science	2.3	4	4	0
III. Marine Engineering		25.6	44	33.5	-10.5
1	Drafting	2.6	4.5	4	-0.5
2	Propulsion Plant	5.2	9	9	0
3	Machinery	7.0	12	5	-7
4	Practical NARC	2.6	4.5	4	-0.5
5	Electrical Engineering	2.9	5	3	-2
6	Electronics Engineering	3.5	6	4	-2
7	Engineering Design	1.7	3	4.5	+1.5
IV. Operations		7.0	12	7	-5
1	Engineering Operations	3.5	6	3	-3
2	Ship Operations	3.5	6	4	-2
V. Safety and Medicine		1.2	2	1.5	-0.5
1	Safety and medicine	1.2	2	1.5	-0.5
VI. Humanities and Social Sciences		10.5	18	15	-3
1	Social Sciences	3.5	6	13	+7
2	Humanities	7	12	2	-10
VII. Economics and Management		3.5	6	12	+6
1	Economics	1.7	3	2.5	-0.5
2	Management	1.7	3	9.5	+6.5
VIII. Physical Education		2.3	4	0	-4
1	Physical education	2.3	4	0	-4
IX. Sea Training and Internships		17.4	30	40	+10
1	Sea Training	15.1	26	31	+5
2	Internships	2.3	4	9	+5
X. Final Examinations		3.5	6	2	-4
PROGRAMME TOTAL		100	172	158	-14

c) *Required textbooks and other reference materials are appropriate and available.*

Findings: Majority of textbooks are quite old. Most of reference materials are the instructions and procedures from private shipping companies and equipment manufacturers which allow to replace the outdated information in the textbooks.

d) *Course outlines and completed course work, projects and papers, tests and exams are appropriate for proclaimed educational objectives and learning outcomes.*

Findings: The course outlines having been analysed by the visiting team show sufficient information presented. However, there is no mentioning of the expected learning outcomes, and also of the programme and course objectives.

e) *Curriculum contains courses dedicated to development of communication skills, including appropriate proficiency in English language.*

Findings: Several courses include oral presentation on the results of assignments. Multiple lab. reports and course project reports are prepared.

f) *Curriculum contains general formative courses i.e. those dedicated to understanding of global, economic, cultural and societal issues.*

g) *There are mandatory courses dedicated to develop teamwork skills.*

Findings: Some course projects are developed by teams of students.

RECOMMENDATIONS

- a. **A revision of engineering science courses is suggested in order to add theory subjects, and substantially reduce the so-called compensation, or bridge programme offered by the partner, Klaipeda University for a University level bachelor degree in marine engineering**
- b. **A revision of math and science courses might be undertaken with the idea of deepening the subject matter, and eventually strengthen the programme making it closer to the university level as it is understood by the Klaipeda University. For the same purpose, two-three new courses in math and science might be added to the programme.**
- c. **Two months of shop practice in the freshmen class appears excessive, especially considering the fact that a very limited amount of home work is required during this period. It might be suggested to offer during this period two-three introductory courses, like Intro to Ships, Engineering Graphics, etc.**
- d. **It is suggested to replace the outdated textbooks. As an option, the use of English language textbooks might be encouraged. This approach would definitely benefit the English language training.**
- e. **It is suggested to verify and clarify certain terminology confusions related to the programme titles and definitions, at least in the English language version**
- f. **While the students are adequately provided with the compulsory subjects in the curriculum, they have not got as many choices in elective courses and individual studies.**

4. Teaching process

a) *Teaching modes are appropriately distributed among front-end lecturing, use of simulators and practical laboratories and exercises.*

Findings: The teaching relies heavily on lecturing. However, quite adequate amount of lab. classes and simulator exercises is employed. Information technology has been introduced, including several new simulation system.

b) *Modern techniques (multimedia devices, internet-based education, information services) are available and appropriate for the proclaimed educational objectives and learning outcomes.*

Findings: All students are using computers, both in class and for after-class work. Computer classes are available and computer-equipped library. Various simulators are used for training purposes such as GMDSS, Radar, ARPA, electronic cartography and etc. A new multimedia classroom and engine room simulator were introduced in the training process in 2002, Time Bridge Management Simulator – in 2003. The Academy has started the implementation of other new projects in 2004. Computer classes with Internet are open for students' self-study work. There are 16 laboratories, 4 workshops and 31 classrooms in the Academy, and also sports ground, meeting hall and cafeteria. The Academy library contains 70 thousand books including the newest textbooks from England and the USA. There are more than a thousand readers who use books and periodicals from the library funds.

RECOMMENDATIONS

- a. **It is suggested to work on educational methods aimed on assisting students in development of individual thinking and creative skills.**
- b. **To improve the education and practical experience it is suggested to arrange a system of comprehensive sea assignments for students to be completed during the sea time onboard, primarily in line with the competences required by the STCW standards.**

5. Study process and student workload

- a) *Distribution between classroom teaching and after hours studying is appropriate.*

Findings: Organisation of studies is based on a detailed academic calendar. The study is separated into three components: basic studies, core studies, and practical training.

- b) *Academic calendar is appropriate and does not negatively impact student performance.*

Findings: The Academy maintains a standard four-year academic calendar with summer training onboard voyages and two internships: at a shipyard and in port.

- c) *Appropriate facilities for studying are available and suitable for intended purpose.*

Findings: As a whole, the Academy provides to the students sufficient set of study sites and lounges. However, the library is not properly equipped for studies. There is also insufficient access to Internet.

RECOMMENDATIONS

- a. **It is suggested to arrange for the students to be able to study in the library. A special study hall might be a good addition.**
- b. **A wireless Internet system might be very helpful addition to the student study facilities**

6. Faculty and support personnel

- a) *Composition, size, educational credentials and experience of faculty members and support personnel are appropriate for the accredited programme.*

- b) *There is sufficient number of academic staff holding appropriate academic degrees.*

- c) *Student/lecturer ratio is appropriate for the available facilities and in line with proclaimed educational objectives and learning outcomes.*

- d) *Average on-board experience of academic staff and other personnel is appropriate for the accredited programme.*

Findings: The total number of faculty members, both full time and part time, is 22. The distribution by qualification is presented in the table 3.

Table 3 Academic faculty structure

Number of faculty (full and part time job)		22
Professional Qualifications	Chief Engineer	2
	2nd Engineer	4
	Engineer OOW	1
	1 class RO	1
Academic Degrees	Ph.D.	4
	M.Sc. (or equal)	18

The engineering department has sufficient teaching staff, that meets the requirements for a higher education institution' However, promotions to a higher teaching rank are very limited. There is only one full professor at the Academy. Research activities are not very popular, as well as the upgrading of the academic degree.

- e) *The system of selection, promotion and retention of academic staff is in place.*

Findings: Selection of the teaching staff is regulated by the national regulations and tradition. Due to the uniqueness of the field and high requirements to the candidates, the available pool is limited. Better salary opportunities for sea-going personnel even more limit the pool of qualified candidates.

- f) *Measures for encouraging and ensuring professional development of academic staff are in place.*

Findings: More than half of the faculty members are in pre-retirement age. Although the plan of faculty professional development is properly developed and maintained, actual results appear to be inadequate

- g) *There are appropriate level of interactions between academic staff and students*

Findings: One of the greatest strengths of the Seaside Maritime Academy is the cohesiveness of its faculty, students and administration. Due to the size of the institution, there is a very personal scope of the interaction which is clearly directed towards the betterment of the programme offerings.

RECOMMENDATIONS

- a. **It appears necessary to increase the number of faculty members with higher academic rank. It is suggested to analyse and upgrade the system of selecting and promoting to higher academic rank.**
- b. **The Academy needs to improve the process of seaching and selecting new faculty members.**
- c. **Faculty professional deveopment and interaction with the industry requires substantial enhancement. It might be suggested to encourage the participation in the international professional associations like IAMU and IMLA.**

7. Professional training and internships

- a) *The number and level of responsibility of certificates of competence awarded to the students are appropriate for the proclaimed educational objectives and learning outcomes and in line with on-board experience acquired during education at the institution.*

Findings: The Academy realizes the value of providing students with opportunities to obtain professional certificates like the tanker man, LNG, etc. However, the certifications are still quite limited.

- b) *The system for monitoring professional training on board is in place (for institutions that issue CoCs).*

Findings: During the freshman and sophomore years basic practical skills in a machine shop and in the welding lab are presented. Basic safety and fire-fighting methods are trained. In the later years, every student in the marine engineering programme gets quite comprehensive sailing experience onboard Government and commercial ships. As a result of mutual cooperation agreements with foreign shipping companies (Dutch, English and others), SMA students acquire their practical skills on foreign ships as well. This cooperation is very useful while solving questions concerning organization of students' practice and development of material training base.

Student evaluations are collected and analysed, but only after sailing sessions onboard Government and domestic commercial ships.

RECOMMENDATIONS

- a. It is suggested to work on increasing the number of certificate related courses and training.
- b. Practical assignments given to the students to be completed during their sailing onboard might improve the system of crediting professional competences, and also might allow freeing some vitally needed time in classes.
- c. Student evaluations after sailing on foreign ships, and also after internships at shipyards and ports are quite useful tools for monitoring student performance. The procedure needs to be developed.

8. Facilities and resources

- a) *Classrooms, laboratories and simulators correspond to the programme requirements.*

Findings: The Engineering building of The Seaside Maritime Academy is big enough for teaching, offices and laboratories but structure not so well configured due to its original purpose as hostel. Bigger laboratories are located in nearby buildings. There is a set of machinery laboratories including diesel generations, steam and gas turbines, and also auxiliary units while laboratories for refrigeration technology are modest. A modern simulation tool is provided for operation and troubleshooting of maritime engines.

- b) *Institutional support and resources required for maintaining day-to-day education process are appropriate.*

Findings: The shortage and in many cases high age of laboratory equipment has been recognized and there are attempts to update their level to that of the more maritime directed study programmes already have. Integration of functions in simulators is going on.

- c) *Library and other learning-related support facilities are appropriate.*

Findings: A medium size library is located in the main building. The literature is quite old. It has a modern information system, however, it is impossible to borrow books via data network from other libraries. The textbooks are available in the library in a satisfactory number of copies for each student of the ongoing courses. Students can read and download lecture notes and other study material from Intranet.

- d) *Student support facilities (campus, playing grounds, supplies, cultural facilities) are appropriate.*

Findings: The Academy has a stadium, Olympic size pool and a modern gym.

RECOMMENDATIONS

- a. It is suggested to develop the laboratory systems with different measuring possibilities, important to measure the powers, temperatures, pressures indication diagrams, etc.
- b. It is also suggested to wider use the assistance of the foreign shipping companies for development of the laboratory base in exchange for allowing certain company-related inclusions in the curriculum.

9. Programme objectives and stakeholders involvement

- a) *Stakeholders' participation in programme revision and further development is timely, well-organized and appropriate.*

Findings: The principal programme stakeholders, besides students and the faculty, are the Government, industry and the graduates. Several revisions to the programmes during the last ten years have been necessitated by the fluctuation in the fleet structure, introduction of STCW, and also by the Government request to initiate training of NAVY officers.

- b) *The system to respond to stakeholders' feedback is in place.*

Findings: Contacts are vital due to the practices of arranging training and various memberships of faculty members in associations of the field.

Marine engineering has international contacts, especially with Maritime institutions of Baltic countries (Latvia and Estonia), and also Poland, Finland and Russia.

- c) *The system to track students' employment history and personal development is in place.*

Findings: No formal system of data collection and analysis for the employment of the graduates is available.

RECOMMENDATIONS

- a. **The outcome assessment of the programmes might be improved by developing a closed-loop continuous assessment mechanism.**
- b. **It is suggested to develop a comprehensive system of continuous programme evaluation based on wide involvement of the industry in setting and upgrading the programme objectives.**

10. Continuing education

- a) *The institution provides opportunities for graduated students to continue their education, either at the institution or at other universities, and to get academic degrees.*

Findings: Graduates have good opportunities to continue their education. The Academy works in close co-operation with the Shore side University, which maintains two departments at the Academy campus, and actively uses the facilities of the Academy. Besides, those graduates of the University programme, also called Marine Engineering, who decide to become sea-going officers, are getting the required practical experience at the Academy.

- b) *The institution provides opportunities for graduated students to obtain additional professional certificates (STCW) or other professional competencies.*

Findings: Majority of graduates sail onboard foreign ships, and follow the procedures for license upgrading which are used in those countries. For the same reason (see above) keeping track of the graduate professional development is a difficult task.

RECOMMENDATIONS

- a. **Many maritime schools created various types of continuing education units where the former graduates have opportunities to upgrade licenses and obtain new certificates. SMA is suggested to consider developing its own institution.**
- b. **Bearing in mind the close proximity of the Seaside University, it might be suggested to arrange for the University faculty to teach certain courses in the Academy programme.**

II. CONCLUSIONS

The Marine Engineering programme at SMA has a dedicated and competent faculty. The students of the programmes are very interested in their field and possess honest respect for their teachers.

The number of students in high schools is decreasing and orientation towards mathematics is not as popular as before. The Academy and its study programmes are in a competition situation for attracting good students and this competition is increasing.

There are some concerns to be emphasized:

1. To increase the entrance competition, more information to potential students in high schools is recommend. One way might be to create illustrative web pages, which tell about the job possibilities and career of engineers graduated from the Academy.
2. The age of the teaching personnel might soon become a problem, which needs to be solved.
3. The further development of the curricula could include more individual work and problem solving tasks. Training in own training ship could be more effective than today in commercial ships. The scope of the curricula could include more automation techniques and electrical engineering.
4. The Academy needs more financial, physical, and human resources in order to develop its programmes.

The final conclusion of the team, based on the assessment of the Programme and on the comparison with the similar programmes in other Maritime Academies:

The Marine Engineering Programme at the Seaside Maritime Academy

- a. **is a fully developed and functional university level programme,**
- b. **which meets the requirements of the regulating bodies, both National Higher Education and International Maritime Education and Training,**
- c. **it is a truly bachelor level engineering degree, and**
- d. **it is STCW-based professional maritime license oriented programme**

Signed

(Date)

(Team members)



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