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S.O.S. – STRESS ON SHIPS

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Executive Summary

“Stress On Ships” is a project addressed to the maritime transport field. In particular, to what is known as *human element*, as a key factor for effectiveness, efficiency and safety of maritime transports. Ships carry persons, vehicles or cargoes of several types, some of which highly dangerous (oil, chemicals, etc.) for persons or environment, and are requested to be fast and safe at one time. Two concepts usually hard to integrate. The responsibility to do it is up to ship crews, and here is the human element S.O.S. project is aiming at.

Unlike machines, humans are fickle, exposed to changing feelings, with subjective needs and complex inner mechanisms. All features that, at work, often may entail lack of efficiency, effectiveness and safety. Crews able to monitor and control the most influencing side of their human nature can ensure safer and generally better managed performances during the work at sea. Meeting at the same time the needs of workers, enterprises, clients, institutions and environment. This is the reason for S.O.S. targets the audience of all the on board workers, generally identified with the term “seafarers”, with a specific focus on those who are charger of the greatest responsibilities: the maritime officers.

In particular, the project objectives have been defined with reference to researches and reports released by the main international and European maritime institutions (IMO, EMSA), all emphasizing the need to improve crews education and training to limit the effects of some human element related issues occurring on board, and often leading to accidents of various seriousness. Researches and reports were and are elaborated on the light of the core function maritime transports have among the whole of transport means in the current global market and, as consequence, they recognize the importance of the human element and its management on board.

What has been detected as the main issue affecting the work of crews is generally define as “stress”. Every work is more or less stressful, but working at sea brings a very peculiar kind of stress, made of different issues connecting and acting simultaneously. S.O.S. project has been planned to release a training programme to teach/train seafarers, especially officers, to detect and recognize the arising of the first signs of this kind of stress, in themselves or in others (i.e.: colleagues, subordinates), and to carry out some first coping procedures, to manage and reduce its effects on the working activities.

The consortium charged to conceive the training programme has been built trying to collect the most authoritative and different approaches on a well known problem in the maritime field. It gathers the expertise developed by northern European countries (Sweden, Finland, Poland, Lithuania) and Mediterranean countries (Italy, Turkey). On another level it puts side by side maritime education and training institutions of different level: research centres (Finland), Universities (Lithuania, Poland, Sweden, Turkey), Academies (Italy) and secondary schools (Italy).

By the organization point of view, consortium has been organized with a *mind* (universities and research centres), with the task of conceiving the training programme, and two *hands* (Academy and secondary school), with the task to actually test it, both cooperating and integrating in every phase. To enrich the

consortium, it must be quoted also the significant whole of “Associated partners”, made of a substantial number of enterprises (private shipping companies in the passengers, ferry and cargo sector) from different European countries (Italy, Turkey, Lithuania), leading institutions, such as Ministries of Education, and other significant and authoritative bodies belonging to the maritime “cluster”. What is worth to be emphasized is that those associated are expected to actively participate to the project works: for example the involved shipping companies are expected to host on board trainees to perform a practical testing of the training programme.

These partners acted with a continuous sharing of documents, idea, implementations, taking advantage of the most advanced cooperative web platforms and communication means. This allowed to organize the works in order to identify the most relevant issues included in the ship work related stress, in particular those that can be tackled with a targeted education and training. Every partner get in depth of a single issue, reporting and sharing results and implementation with the rest of consortium, always called to release feedbacks to furtherly improve the elaboration of training programme contents.

A boost to this continuous improvement approach has been given by the two planned (and carried out) quality assessments, made by external experts. Consortium, on this purpose, took care of choosing professionals not involved in the partners institutions, coming with different backgrounds and intervening in two different phases: after the releasing of the first training programme draft, and before the releasing of the its final version. To improve and make clearer the quality external or self assessment, consortium also acquired a tool providing evaluation and scoring criteria, developed in another EU project (Maritime Training Platform).

The results reached so far are in full compliance with what was expected by the initial project: a sequence of subsequent training programme versions, always improving from one to the following, in relation with the increasing contributions of partners to the joint drafting of every unit. Everything has been obtained through common procedures, carried on thanks to the new technological tools for sharing the work. And everything has been carried out strictly following the given tracks established either in the initial project, and adjusted throughout the direct discussions occurred during the periodical partner meetings.

Consortium achieved also some by-results, always planned in the initial project, through the quality controls performed by some external experts, who had the task of checking the work done, suggesting further improvements and emphasizing the need to fill important missing details. This path led the partnership to a further awareness of the need of providing for unplanned contents, such as a preamble explaining the rationale base of the whole training programme, and some course instructions to guide the teachers/trainers approach.

As the project has come to the half of its path, plans and prospects for the future are closely linked with what is planned to happen in the next future: as the training programme has been released in its final version, consortium will sustain its action for the target groups benefit actually testing it, in two following phases. The first will be what has been called “theoretical testing”: a pilot group of trainees will be gathered and taught/trained by selected teachers and trainers, delivering to them the training programme contents. The same target group will be then put through

what has been called “practical testing”: they will be taken on board working on different kind of ships, provided by companies which are also associated partners of the project, and will be monitored by external experts during their experience, to check if they had the chance to take advantage of the received training on stress recognition and management.

The crossed comparison between both testing results will help consortium to release some conclusions, at the end of the project’s path, about the developed training programme and its actual possible benefits for seafarers, enterprises, institutions, and Europe.

What the consortium evaluated as worth to be brought at public knowledge has been put into the project’s website. Other than a general description of project’s rationale, goals and path, and a description of the partner institutions, every meeting outcome has been summarized in the devoted website section, always with a recall on the linked social network profiles. The website hosts also all the dissemination activities carried out by partners, classified in broadcasts, press releases, meetings, internal dissemination and printing materials.

Table of Contents

1. PROJECT OBJECTIVES.....	7
2. PROJECT APPROACH.....	9
3. PROJECT OUTCOMES & RESULTS.....	11
4. PARTNERSHIPS	13
5. PLANS FOR THE FUTURE	14
6. CONTRIBUTION TO EU POLICIES	16
7. EXTRA HEADING/SECTION.....	ERRORE. IL SEGNALIBRO NON È DEFINITO.

1. Project Objectives

The general objective of the first half of project's lifetime was to finalize both the implementation phases planned, through the planned methodologies, ensuring a continuous dissemination activity and the requested quality assessments of the work done.

During the first 15 months, the scientific bodies part of project's consortium shared their expertise on the stress on ship subject, in order to detect the borders of the common training programme drafting, and to implement the training programme itself. The objective was to preliminarily decide which stress sources/ would have been taken into consideration, choosing those among them which can be effectively addressed with a targeted education and training, to be experimented then on a reduced scale.

Once defined the borders of consortium's scope, each scientific institution worked with their own researchers groups to implement the single education and training answers to single issues, in order to release, within six/seven months from the beginning of the project's lifetime, a first rough training programme draft. The objective has been reached in the planned time.

As planned, the first draft has been put under an external expert's evaluation, who has been charged by the consortium to quality assess the work done, releasing a specific report containing suggestions and hints for the training programme's improvement. The objective of the quality assessment has been to provide consortium with a tool of reference to set at best the course, looking forward for the second implementation phase and the releasing of the final training programme version.

During the following six/seven months, the consortium's scientific members made use of other internal researchers to reach the objective of releasing the second and final version of the training programme, keeping always into consideration the external expert's suggestions. Each of them revised the units implemented during the first phase, simplifying the overall training programme structure, on one hand, and on the other hand adding and setting an introductory preamble and some course instructions useful for teachers and trainers in the following planned testing perspective.

At the end of the second implementation phase, the consortium asked again two quality assessments, one about the developed training programme contents, and one more procedural about the mere project management carried out until that moment. The objectives have been on one hand to have some suggestions in addition for a final implementation of the training programme, before its final version releasing, and on the other hand to verify the accuracy of project's procedures to organize activities and manage financial resources.

Even if the final training programme version has been officially released out of the present progress report scope (15th April), due to the time needed to organize and write down the very last implementations, the objective of ending the whole implementation and quality assessment phase within the first 15 months of project's lifetime can be considered reached.

During the entire period, the consortium's non-research and non-scientific bodies supported the training programme drafting always reminding the need to keep it into the defined borders of the experimental scope of the project. This helped to reach the objective of conceiving a training programme which was immediately and easily deliverable to target groups, and focused on issues that can be actually tackled with training.

One last objective planned was an ongoing dissemination activity, always activated during the whole project's lifetime. The objective has been reached through traditional means (leaflets, dissemination materials, articles, quoting during internal and external meetings and/or conferences, etc.), but with a method that a quality assessor evaluated as effective but too much extemporaneous by the methodological point of view. The objective of a good dissemination efficacy has been reached, and the consortium improved its organization and recording procedures.

No specific community of users has been directly involved in this first phase, but the targets of the training programme have always been well present in partners' minds while drafting its contents. All consortium's members deal in different ways with seafaring, maritime activities, crews, transports. All know what is the matter of shipping and working on board, as their ordinary trainees are future or current or past seafarers of different ranks. The project has been built and carried out until the half of its path looking forward at long term to their benefits while conducting their professional activities on board, and also at short term, as the related training programme has been planned for an actual conveying to a selected pilot group of trainees.

In both cases, the potential impact seems significant. On one hand, partners shared all their scientific background and expertise to create an effective training programme which, once delivered, seems to have the potentiality to actually improve the way of living such a peculiar kind of job. A potentiality that will be checked during the planned testings. On the other hand, consortium worked with full awareness that the general goal is to set and manage an experiment at reduced scale, where the conceived training programme should have been actually deliverable to a pilot target group. This awareness supported the general consortium's approach in building a tailor-made training programme for the benefit of the trainees that will be involved in the following testing phases.

2. Project Approach

The project approach is closely connected with its subject, nature and general scope. The scope, taken from the project's name, is very huge: it deals with the work-related stress, where "work" is meant as a very peculiar activity, such as the one carried out on board of a ship. The nature is often claimed, either in the initial project and in its development: it is, and it has been set for being, a trial, an experiment. Something to be conceived for a reduced-scale testing, in order to create also verified pre-conditions for further implementations.

The difficulty of setting a correct project approach derives by this contrast between a huge subject and an experiment to be carried out at a microscopical level. Consortium took some time and engagement to discuss and define the more logical and sustainable scope within which the training programme should have been developed, reaching a common frame accepted and shared by all partners.

It gathers all the issues that can be actually tackled through a targeted education and training, keeping out of the scope all those which surely contribute to the rising of stress on board, but that no training can teach how cope with. There's no subject to be taught to learn, for example, how to adapt to an uncomfortable accommodation; how to resist during long and exhausting work shifts decided by the company and allowed by law; how to deal with unsatisfactory salaries, and so on. These (and other similar) issues are out of S.O.S. scope, even if, as they are actual *stressors*, consortium decided to leave some clarifying words about them in a specific training programme's opening section, called "Preamble". Partners are persuaded that, even if there's no training programme for such issues, teachers and trainers should be aware of their existence, also to manage possible discussions with trainees.

Part of the project approach is the continuous research of internal and external checks and controls over the work done. Everything, during the implementation phase, has been shared among partners. There hasn't been any "reserved field" of engagement, but every elaboration has been put under the evaluation of the whole consortium, to find the right balance between the different expertises and approaches. Moreover it has been strictly respected what is planned in the initial project for what concerns the quality assessment. External experts, chosen outside the participating institutions, and never in contact each other, have been involved in analysing and evaluating the implementations done. Their suggestions and hints, as well as their reports, have been always taken into consideration by the consortium while revising and correcting the general approach to the different tasks.

After the final implementation of training programme, consortium has come aware of the need to add also some course instruction for teachers and trainers, implementing the training programme with new non-planned contents, and this proves the actually attentive partners approach on the creation of a complete and ready-to-use training programme.

The dissemination approach has been corrected, thanks to the advise of an external expert, during the first period of project's lifetime. Many initiatives have been taken by all partners to disseminate rationale, goals, contents, and scope of S.O.S.

project, some of them taking advantage of some unplanned chances like international sectorial conferences, but there were no systematic method to record and share them. After some criticism raised by the external expert towards this “extemporary” way to keep dissemination under control, consortium provides a specific tool shared among all partners, to record every dissemination activity carried out during project’s lifetime.

3. Project Outcomes & Results

In the first 15 months of activity, consortium reached the type and number of outcomes and results expected and planned in the initial project. Partners activated different internal workgroups to work on S.O.S. training programme first and final draft, this way ensuring crossed checks and implementations in different subjects' contents. The implementation phases have been articulated per legs culminating in the different subsequent partner meetings, following the planned schedule.

During every partner meeting, consortium set the point of the work done, correcting the course, when needed, and jointly clarifying dark points. This made possible the releasing of different versions of the training programme, as soon as it was significantly implemented. Globally it is possible to detect two stages, which produced the two main project's results, as planned for the first phase: at the first stage consortium released the first rough training programme version, followed, at the end of the second phase, of the final version.

During these phases, consortium shared an important outcome: a set of milestones/criteria to reach a clear quality assessment of the work done. Taking advantage of some tools already produced within other European projects, partners agreed in acquiring a list of items on the basis of which every quality assessment will be set, either if made internally or by external experts.

Two outcomes have been produced, during the path for quality assessment of the training programme. Two different experts, external from project's partner institutions, coming from two different countries, with two different backgrounds, assessed the work done after the first and the second drafting phase. In both cases, it has been released a quality assessment report, collecting suggestions, hints, and a general evaluation of procedures and contents developed by the consortium. Those reports have been considered by partners as tools of reference to boost the quality and the balance within the subjects implemented in the training programme.

Good results have been reached since the kick-off meeting by the dissemination side. A wide and good coverage has been ensured by all main local-national media, with video broadcasts and articles on known newspapers. The dissemination plan went on during all the project's lifetime: every partner took every available chance to spread S.O.S. updates internally and externally. In particular, some financial savings on the operational costs have been invested, under EACEA's permissions, for the participation of one partner, representant of the whole consortium, to authoritative international conferences on maritime subjects, where S.O.S. project's rationale, scope and goals have been introduced and explained, raising interested and proactive reactions. As support to the dissemination plan, a devoted website and Facebook profile have been opened.

Such outcomes and results hasn't had any direct impact on target groups. But it must be said that it was planned, as the first phase has been dedicated, following what was planned in the initial project, to the conceiving of the training programme. Target groups were only indirectly involved, as consortium always kept in mind the need to create something immediately and actually deliverable during the following testing, collecting contents and concepts actually useful for on board workers.

Except for the dissemination activities and a short summary of every partner meetings conclusions, all always published on project's website, consortium jointly decided not to disclose the main results achieved so far, that is the final training programme version, until its theoretical and practical testings have been carried out, and the entire training programme fully validated.

4. Partnerships

The concepts at the base of the partnership built for S.O.S. project are “sharing” and “covering”.

Sharing comes from the goal of putting on the table the scientific results and the expertise developed so far by different institutions, from very different countries, with different approaches and natures, about one issue. The North Europe area-approach to the study of the stress on ships is brought by some of the most advanced country in the field: Sweden, Poland, Finland, Lithuania. Their approach has as interlocutor a quite different one, from Mediterranean area, with the contribution of Italian and Turkish scientific results and expertise.

These different approaches are requested to search and find an integration not only related to the different way to develop the scientific research, but also to the different settings and level of study and researches. Different scopes should integrate into the same consortium, from the secondary school to the broader university, getting through the academic, all with the *fil rouge* of the maritime field of application. This different kind of diversities are gathered within the consortium, and must find a common point to tackle a jointly recognized issue affecting all crews.

Covering comes from the geographical and cultural distribution of partners, which ensure enough heterogeneity to the general approach. In the same consortium it is possible to find a full traditional European-Mediterranean country, like Italy, side by side with another Southern one, but traditionally with only external relations with Europe, like Turkey. In addition also the Northern and traditionally on the anglo-saxon cultural track area is covered with Sweden, together with an Eastern oriented approach ensured by Poland and Lithuania, and a very peculiar Northern one with Finland.

Despite what usually happens in European projects, in S.O.S. associated partners are not quoted and included only to give “political weight” to the project, or to express a mere theoretical support. In S.O.S. they are, in most (and significant) cases, active part of the project’s activities: a shipping corporate and a shipping company active in passengers sector, and another shipping company in cargo sector will participate, with no additional costs for the project, to the practical testing of the training programme, hosting the trainees on board. In addition, there is the authoritative support of ruling institutions like ministries, chambers of shipping and associations related to the maritime cluster. Actually, associated partners in S.O.S. are to be an active added value for the whole project.

It must be also considered, as indirect part of the consortium, the pilot group that will be involved in theoretical and practical testing: trainees will be recruited, in every country the testings will be performed, among maritime workers (with a specific focus on officers) and maritime secondary school students. As they will directly experiment S.O.S. contents, while the project’s carrying out is still running, they can be considered as key members of the S.O.S. consortium.

5. Plans for the Future

The second half of S.O.S. project is as important as the first one, given that it is expected to perform activities that will help validating the whole work done, either for what concerns its contents and the procedures compliances to a good management system.

Once the training programme has been conceived thanks to the activity carried out mainly by the “brain” partners, in the second half the “hands” partners are expected to actually deliver the training programme contents to a pilot group of trainees and then monitor and observe their behaviour and reaction during an actual experience on board. Initially only two institutions, both from Italy, were planned to cooperate for this delivering. During the work together, other partner institutions expressed their will to perform the testing too, following some interests and requests rose thanks to the good and targeted dissemination done at national level.

So, what should be planned for the future is not only one testing performance, but also to coordinate several of them, occurring in Finland (theoretical testing), Lithuania and Turkey (both theoretical and practical testings), with different approaches and, hopefully, different results. It is an effort in addition to what was planned, but also, in consortium’s opinion, a great added value that will allow a rich comparison between results and outcomes. All this must be organized and managed to produce the best possible results.

The delivering procedures for the Italian institutions have been defined as follows:

- Definition and gathering of trainees
- Definition of theoretical testing schedule
- Selection of teachers/trainers on the basis of CVs and expertise on the subject
- Schedule and ship type definition for practical testing
- Monitoring of trainees during the on board experience

Institutions aiming to replicate the Italian experience will be requested to be in compliance as much as possible with these procedures, respecting also, as much as they can, the same time schedule.

Teachers and trainers won’t preferably charged with the task of monitoring the on board experience. After the end of both testings, teachers/trainers and observers will release a report evaluating the effect and effectiveness of the training programme. The testing results will be examined by the consortium in order to release a whole or partial validation. In case of partial validation, consortium will release also some improvement suggestions.

The last step will be, after a dissemination carried out throughout the whole project’s lifetime, to set an effective exploitation activity, bringing the project results to the tables of the top decision makers and international rulers. The minimum goal will be to make them aware about the results achieved by S.O.S. consortium, aiming to a

formal recognition or to an experimental input of the training programme in the education and training path for maritime students/trainees.

6. Contribution to EU policies

Consortium developed so far the core part of the project: a training programme that, once validated by the following testing, will support the realisation of a European area for lifelong learning, as it can be acquired by maritime education and training institutions, and also maritime secondary schools, within their ordinary curriculum, in order to help tackling an issue recognized as spread and common among all seafarers: the stress while working on board of ships. The outcome is expected to be a more effective education and training for individuals engaged in this professions, in order to make them able to cope with problems that often cause the loss of qualified workforce in the maritime field.

All this has been and will be reached through a continuous integration between the approaches of institutions coming from different cultures and geographical areas, each with a different nature (university, academy, secondary school). The exchange of good practices and the actual crossover of their expertises in the field is the basis for the improvement of the quality of education and training.

The project subject and goals deal directly with the need to increase and improve the work performances in a peculiar work environment. Being able to cope with stress, in a highly stressing context such as in a sailing ship, means being more productive and efficient, other than an actual personal improvement. This facts meet the demand for personal development, employability and a stronger participation in the European labour market, and all goes on trainees benefit.

The training programme conceived in this first half of project's lifetime is new in the maritime education and training landscape. As the stress problem on board has been often quoted as one of the more serious among those affecting seafarers, no one ever thought about tackling it through a targeted education and training. What has been conceived so far by S.O.S. consortium is a clear innovation that, once validate, can innovate the vocational education and training systems, institutions and practices.

The whole consortium, considered including the associated partners, active part of the project path, is one of the best results on the perspective of increasing the volume of cooperation between education and training institutions, enterprises, social partners and institutional relevant bodies throughout and also, as in Turkish case, outside Europe.

Another added value is the validation planned for the theoretical testing, made through a practical testing. This is an innovative practice in the field of vocational education and training projecting, that can be taken as model for all those who want to develop new sectorial training paths, establishing also an actual alliance between education/training, enterprises, social bodies, ruling institutions and sectorial associations.

An unexpected and unplanned European added value is the training programme testing replicas that will be carried out in Finland, Lithuania and Turkey, in addition to what was planned for Italy. It will be possible to S.O.S. consortium to compare different experiences and approaches to maritime students / workers training, applying what has been conceived by either theoretical and practical point of view.

