*****Romanian Naval Academy “Mircea cel Batran”***

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**Ref**: ***KA203 project proposal, HED Strategic Partnership***

 *Initiative of the LoD 11 International Naval Semester*

**a. PROJECT PROPOSAL**

**,,International Naval Semester Development Applying the Intelligent Technologies and the Innovative Tools in the European Navy Defence System – NAVY-INS-Tech”**

**Acronym: NAVY-INS-Tech**

**b. PROJECT PARTNERS**

**Leading partner**: Romanian Naval Academy “Mircea cel Batran”, Constanta, Romania (RNA)

**Partners:**

**P1: Nikola Vaptsarov Naval Academy, Varna, Bulgaria (NVNA)**

**P2: Italian Naval Academy, Livorno, Italy (INA)**

**P3: Polish Naval Academy, Gdynia, Poland (PNA)**

**Project director**: Rear Admiral Alecu TOMA, Associate Professor, PhD, Rector-Commandant of the Romanian Naval Academy;

**Executive director**: Colonel Cătălin POPA, Associate Professor, PhD, Vice-rector for International Programs of the Romanian Naval Academy and LoD11 Chairman/EMILYO program;

**RNA’s Institutional Coordinator**: LtCdr Marius CUCU, Erasmus+ Institutional Coordinator of the Romanian Naval Academy;

**Project implementation team**: TBD

**Duration**: 24 months

**Budget**: 250.000 Euro

**c. project description**

The major aim of the project is to develop a **harmonized framework for teaching and research practices within an International Naval Semester,** **applying the intelligent technologies and the innovative tools in the European Navy Defence System**.

The actual geopolitical and strategic volatile context, especially in the Black Sea and Baltic regions, creates an unstable environment arising new challenges for the European and regional security systems. Following up the *EU Security and Defence Policy (ESDP)*, updated with the *Strategic Compass for strengthening the EU security and defence policy by 2030*, in order to overcome the security needs, the Military Higher Education Area (MHEA) requires a higher need of reforming the curricular area, to meet the updated technological realities in the field of Navy warfare and tactics, using the new equipment, with inter and trans disciplinary approaches. In line with the assumed political mandate, the declaration on the European initiative for the exchange of Military Young Officers (EMILYO) inspired by Erasmus, has been signed by the European Ministers of Defence in November 2008. It is believed that maintaining a secure and stable EU, demands a creation of certain conditions that allow military students, during their Basic Officer Education, to actively participate in the mobility forms of education. It would provide them with the opportunity to spent time in international context, getting in contact with different cultures and improving their STEM skills but also the EU civic perspective in the leadership new context of updated skills, competences and knowledge.

A particular focus will be granted to provide equal opportunities for military education both in relation with the Maritime European Higher Education and with the IMO and STCW standards, but also with the SQF-MILOF implementation in the EU Navy Higher Education network, where mostly the civilian institutions have been granted with funds and strategic projects in the last year of Erasmus+ implementation. The Navy students need in particular at the utmost, digitalized resources and a higher flexibility of the learning process, being in the position to serve both as traditional students in the classrooms, but also as midshipmen onboard the Navy ships, during their compulsory cadetship, on each year of study.

Moreover, the project objective and the enhancement of the Navy students’/teachers’ mobility, will be favoured by an **already functional partnership**, proved by the following settled initiatives that will offer **effectiveness**, **consistency** and **sustainability** of the NAV-INS-Tech project proposal, as following:

- Strategic Partnership enclosed among the Navy Higher Education Institutions (universities, colleges, academies) under the **EMILYO program** , developed in the **European Security and Defence College** framework (Line of Development 11 – International Naval Semester), in which context all miliary higher education systems are meeting in working groups, on each 3 months in Implementation groups IG meeting ([http://emilyo.eu](http://emilyo.eu/));

* - the NHEI are all part of a settled network of cooperation under the ENASC - European Naval Academies Superintendents Forum (<https://www.anmb.ro/enasc>), EUMACS - European Union Military Academic Conference and IMAF - International Military Academic Forum (<http://www.emilyo.eu/node/179>);
* The European Navy HQ are connected by the CHONS Network (EU Chief of Navies Seminars);
* NHEI are connected to the European Defence Program as active partners of European Defence Agency, the premises for military scientific research being granted.

Therefore, the NAVY-INS-Tech initiative will aim to **develop a Common Program Curriculum Framework of studies in the field of Navy Higher Education**, namely the “**International Naval Semester**”, where the partners, under the LoD 11 auspices, will depict and implement a joint and harmonized learning and teaching framework, applying the modern technologies and innovative tools, valued by all involved NHEI from European Union. The “**International Naval Semester**”, will address to acquire the strategic needs determined on European Higher Education Area (EHEA), as well as those of the Bologna Process, providing the Navy students (officer cadets) with the opportunity to study in EU countries on regular basis, as an important step toward the European Universities initiative, without facing problems to the study recognition.

**d. PROJECT GOALS AND Objectives**

The assumed goals for NAVY-INS-Tech project are in full compliance with the general Erasmus+ program objectives, in regard of **horizontal and vertical EU priorities and strategies**, as following:

* improve the **digital perspective of Navy Higher Education** around the Europe, offering a virtual platform (VNeC) and modern digital courses for students, using modern technologies and innovative tools;
* enhancing the **students’ participation and involvement**, sharing the European cultural and societal values, by implementing specialized social courses in the framework of the International Naval Semester;
* promote the **environmental protection**, by using the paperless education and also the Erasmus without paper strategy (EWP), within an enriched virtual educational space and using the digital resources (by implementation of *VNeC-Virtual Navy Education e-Campus*);
* promote the **inclusion and diversity**, by introducing a course of Maritime Leadership, with specific topics on gender management and diversity leadership courses;
* **stimulation of STEM education in European Navy Defence System**, using the **modern technologies and innovative tools** for improving the graduates’ competencies in the new European Education Area;
* smooth the road map, **toward European Universities strategy**, by building **an inclusive, harmonized, competitive and effective Navy Higher Education network**, under the Erasmus+ and EMILYO program framework;
* **stimulating the exchanges of students and teachers**, based on common harmonized curriculum, to improve the Erasmus+ implementation and the European Universities strategy implementation in compliance with the EHEI and ERA areas imperatives;

Checking the **sectorial priorities for Higher Education**, the NAVY-INS-Tech project aims to:

* promote the **inter-connected Higher Education system on European level**, joining the Navy academic system, in agreement with EMILYO imperatives - European Initiative for the Exchange of Young Officers inspired by Erasmus program, by improving the students/teachers mobility, facilitated by a harmonized curriculum under an International Naval Semester framework;
* implement the imperatives of building a European Higher Education Area, adapting the Navy Higher Education System to be more compatible and strengthening their quality assurance mechanisms, by **increasing the staff and students' mobility and by facilitating the harmonization and qualitfication framework SQF-MILOF under the framework of the International Naval Semester** (<http://www.ehea.info>);
* stimulation of **innovative methods of teaching and learning** for Navy Higher Education by: student centered curriculum, modern course content, trans-disciplinary approaches, combining STEM with HASS competences, for a sustainable learning self-strategy awareness;
* enhance the implementation road-map for the agreed **SQF-MILOF** (*Sectorial Qualification Framework For Military Officers*) **standards for Navy Higher Education**, that would serve as an interface or ‘translation tool’ between the education and training opportunities offered around EU countries, which makes easier to recognise equivalent education and training programs to further enhance **the creation of a common security and defence culture**;
* **STEM competencies enrichment in Navy HEI curriculum** to improve the competitiveness of EU HEI system, in relation with both the European Research Area and with the European Defence Strategy, polarizing the technological progress toward the EU defence system, but also to improve the women’s access and retention in the military profession in Navy;
* **rewarding the excellence in teaching and didactic processes by enhancing the academic exchanges and faculty training on STEM content development**, using the newest technologies and innovative tools, by promoting the learning by simulation, modelling and applied research practice in the academic curricular content (12 courses will be harmonized, using the updated technologies for practical skill and abilities achievement);
* **improvement of students’ digital skills** using the digital content and simulation learning environment developed on international level, under a harmonized perspective of learning outcomes (knowledge, skills and responsibility) applied on digitization perspective;
* **building an inclusion perspective of Navy Higher Education**, ready to host and offer active support to the EU Accessing Members States students, especially coming from the conflict zone as Ukrainian cadets – the project consortium will actively participate as EU offer for the Navy DEEP program (*NATO Defence Education Enhancement Program*), having as main beneficiary the Odessa National Maritime Academy (ONMA);
* **stimulating the innovation and knowledge transfer** in compliance with ERA imperatives toward building a competitive European Defence System, by promoting the applied research in the STEM curriculum as follow up to the *European Defence Skills Partnership 2020-2024*;
* the partners will **apply innovative technologies in teaching** applying the learning by simulating/ learning by doing/ modelling/ techniques or using the Virtual Reality/Artificial Intelligence modern concepts in HEI, with an emphasis on valuing the scientific research potential;
* the added value will be also offered by the **new educational technologies and networking facilities**, the project aiming to bring the **teaching methods in the new era of digitalization**, building **new and innovative video tutorials and digital materials**, thus offering flexibility in time and space to the education processes, in case of the Navy students, using **blending learning methods** and the **digital tools** for enhancing the independency and autonomy of the students carrying out the learning process either in the classrooms, or onboard the Navy ships during the cadetship;
* the **project will develop a EU cultural, social and technical synergy**, by which the partners will enhance the **NHEI international competitiveness** granting to the partners an enriched access to a **larger base of educational resources and joint training facilities** in order to share the networking expertise among the European Higher Education Institutions on international level.

**European Union’s strategies and policies to be valued in Navy-INS-Tech:**

* alignment to the European Education Area 2025 and European Higher Education Area (EHEA) imperatives, for a better access to quality education in Navy Higher Education Network (<https://education.ec.europa.eu>);
* smooth the MHEI road map, toward the European Universities strategy, by building an inclusive, harmonized, competitive and effective Navy Higher Education network, under the EMILYO program framework (<https://education.ec.europa.eu/sites/default/files/2022-01/communication-european-strategy-for-universities.pdf> );
* implement the imperatives of building a European Higher Education Area, adapting the Navy Higher Education System to be more compatible and strengthening their quality assurance mechanisms, by increasing the staff and students' mobility and by facilitating the harmonization and qualitfication framework SQF-MILOF (<http://www.ehea.info>);
* paperless education and also the Erasmus without paper strategy (EWP) (<https://erasmus-plus.ec.europa.eu/european-student-card-initiative/ewp>);
* SQF-MILOF policy (<https://esdc.europa.eu/documentation/the-sectoral-qualifications-framework-for-the-military-officer-profession-sqf-milof-package>) - The Sectoral Qualifications Framework for the Military Officer Profession SQF-MILOF relates to lifelong learning for a particular sector: military officers. It is fully in line with the European Qualification Framework that is applicable in the general education system throughout the EU and partner countries in the Bologna process.
* enhance the implementation road-map for the agreed SQF-MILOF standards for Navy Higher Education, that would serve as an interface or ‘translation tool’ between the education and training opportunities offered around EU countries, which makes easier to recognise **equivalent education and training programs** to further **enhance** **the creation of a common security and defence culture**.
* European Defence Strategy – CSDP in compliance with the newest policies drawn by the *Strategic Compass for strengthening the EU security and defence policy by 2030* (<https://www.eeas.europa.eu/eeas/strategic-compass-security-and-defence-0_en>);
* The provisions of the *European Defence Skills Partnership 2020-2024* (<https://www.eudsp.eu>) seeking to bring together the Navy HEI, the Navy EU authorities, the defence innovation and research to foster the cooperation in building skills for the European defence industry;
* EMILYO (*European Initiative for the Exchange of Young Officers*) program strategy (<http://emilyo.eu>) and further agreements and arrangements under ENASC - *European Naval Academies Superintendents Forum* (<https://www.anmb.ro/enasc>), EUMACS - *European Union Military Academic Conference* and IMAF - *International Military Academic Forum* (<http://www.emilyo.eu/node/179>);
* European Research Area policies and recommendations (<https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/our-digital-future/european-research-area_en>);
* European Maritime Education System – STCW and IMO standards (<https://www.imo.org/en/ourwork/humanelement/pages/stcw-conv-link.aspx>);

**e. Working Packages, Activities and results**

**WP1: Project management**

**A1.1 Project management documents** – **results**: 1 PMP, 1 QMP, 1 COM, 2 progress reports

**A1.2 Project management and dissemination events** – **results**:

 **5 Transnational Meetings**

**TPM 1** – Project Kick-off meeting (RNA, Romania) – 2 days residential (2 pax)

**TPM 2** – Project meeting – STEM curriculum design (NVNA, Bulgaria) – 2 days residential (2 pax)

**TPM 3** – Project meeting – HASS curriculum design (PNA, Poland) – 1 day online

**TPM 4** – Project meeting – Military EQF curriculum design (RNA, Romania) – 1 day online

**TPM 5** – Project meeting – dissemination of INS results (INA, Italy) – 2 days residential (2 pax)

**1 network of Navy Higher Education institutions, 4 events**

**Event 1** – Scientific conference - STEM curriculum in Navy Education (NVNA, Bulgaria)

**Event 2** – Scientific conference - HASS curriculum in Navy Education (PNA, Poland)

**Event 3** – Closure conference – dissemination of INS results (RNA, Romania)

**WP2. Development of a harmonized International Naval Semester curriculum, using the intelligent technologies and innovative tools in NHEI-Navy Higher Education Institutions, to enhance the STEM competences** (8 syllabuses as already approved within the framework of the LoD11 - IG Emilyo) - NVNA;

**A2.1 European Navy curricular design** **for improving STEM skills** **in Navy higher education** – **results**: 1 curriculum, 12 harmonized syllabuses, out of which 8 STEM and 4 HASS courses to combine the new innovative technologies with the European values assimilation competence improvement;

For STEM abilities improvement, the following course curriculum/syllabuses will be developed and implemented in joint by the project partners, containing innovative up-to-date knowledge:

- harmonized curriculum for digital skills and IT technology abilities - ”Computer networks” and ”Maritime Cyber Threats” (responsible PNA, Poland);

- harmonized curriculum for competencies in Hi Tech, Electronics and Telecommunications - ”Naval Electronics” and ”Naval Communications” modules in International Naval Semester (responsible NVNA, Bulgaria);

- harmonized curriculum for competencies in Navy Engineering and Intelligent Weapon Systems - Power plants and Naval Sensors (responsible INA, Italy);

- harmonized curriculum for competencies in Naval Sciences – Oceanography (METOC) and Naval Architecture (responsible RNA, Romania).

**A2.2 Course design using the modern technologies and innovative tools for improving STEM competencies** **in Navy higher education** – **results**: 8 STEM courses to be developed by partners, as full learning packages: textbox, seminar presentations and modern laboratory handbooks (*Power Plants, Computer Networks, Naval Electronics, Naval Sensors, Maritime Cyber Threats, Oceanography, Naval Architecture, Naval Communications*) – 2 courses to be assigned to each partner;

**A2.3 Train the students’ abilities in STEM to improve the tech knowledge and skill in NHEI-Navy Higher Education** **Institutions** – **results**: 8 training sessions (4 students x 4 = 16 students/session, of 5 days each) to be organized in each partner academy;

**LS1** for students: **NHEI STEM harmonized digital skills and IT** **technology abilities** - *Computer networks* and *Maritime Cyber Threats* – blended learning mobility (PNA, Poland);

**LS2** for students: **NHEI STEM harmonized competencies in Hi Tech, Electronics and Naval Communications** - *Naval Electronics* and *Naval Communications* modules in International Naval Semester – blended learning mobility (NVNA, Bulgaria);

**LS3** for students: **NHEI STEM harmonized competencies in Navy Engineering and Intelligent Weapon Systems** - *Power plants* and *Naval Sensors* – blended learning mobility (INA, Italy);

**LS4** for students: **NHEI STEM harmonized competencies in Naval Sciences** – *Oceanography (METOC*) and *Naval Architecture* – blended learning mobility (RNA, Romania).

**WP3. Development of a European Security and Defence culture within the International Naval Semester framework, building the social competences in NHEI-Navy Higher Education Institutions** (4 syllabuses as already approved within the framework of the LoD11 - IG EMILYO) - PNA;

**A3.1 Course design for building a European culture and European Security and Defence awareness improving HASS competencies** – **results**: 4 HASS courses to be developed as learning packages: textbox, and seminar presentations (*Maritime Security and NCGAS (Naval Cooperation and Guidance for Shipping), Naval Leadership, Military Leadership, CSDP – Common Security and Defence Policy*) – 1 course to be assigned to each partner;

**A3.2 Gender perspective in Navy education, part of an equitable modern Leadership perspective** – **results**: 1 questionnaire for 1 study to be conducted in regard the Navy Gender Perspectives, as part of Maritime Leadership topic;

**A3.3 Train the students’ abilities in social sciences and diversity management in Navy Higher Education** – **results**: 4 training sessions (4 students x 4 = 16 students/session, of 5 days each) to be organized by each partner academy;

**LS5** for students: **NHEI HASS harmonized competencies in leadership** - *Naval Leadership* seminar (INA, Italy)

**LS6** for students: **NHEI harmonized competencies in EU maritime policies** - *Maritime Security* seminar (NVNA, Bulgaria)

**LS7** for students: **NHEI harmonized competencies in ESDP policies** - *CSDP* seminar (RNA, Romania)

**LS8** for students: **NHEI EU diversity competencies and diversity management awareness** - *Gender Navy Perspectives* seminar (PNA, Poland).

**WP4. Building a teaching network for the Navy Higher Education to enhance the implementation of the International Naval Semester using the STEM intelligent technologies and innovative tools in Navy Higher Education in harmonization with the HASS European values (RNA)**

**A4.1 Designing and building a virtual e-campus for Navy Higher Education network** – **results**: 1 virtual online campus for Navy Higher Education - ***VNeC-Virtual Navy Education e-Campus***;

**A4.2 Develop and implement a virtual online platform for Navy Higher Education network** – **results**: 8 STEM Courses and 4 HASS Courses to be uploaded as digital resources on VNeC; 1 tutorial for users

**Notes:**

**\*STEM - Science, Technology, Engineering and Mathematics**: *Power Plants, Computer Networks, Naval Electronics, Naval Sensors, Maritime Cyber Threats, Oceanography, Naval Architecture, Naval Communications*

**\*\*HASS - Humanities, Arts, and Social Sciences**: *Maritime Security and NCGAS (Naval Cooperation and Guidance for Shipping), Naval Leadership, Military Leadership, CSDP – Common Security and Defence Policy*

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