



# PROGRAM BOOK

## **1<sup>st</sup> International Conference In Maritime Education and Training In Southeast Asia (COMETSEA ) 2023**

**"Enhancing Maritime Education and Training  
in Southeast Asia"**

**September 26th - 27th , 2023  
Grand Mercure - Kemayoran Jakarta, Indonesia**

Hosted and Organized by: Sekolah Tinggi Ilmu Pelayaran - Jakarta

# TABLE OF **CONTENT**

**03** Organizing Committee

**05** Forewords

**07** Keynote Speakers

**28** Event Rundown

**33** Table of Contents

**37** Abstract

**70** Conference Area

**71** Sponsors



# ORGANIZING COMMITTEE

## 1<sup>st</sup> International Conference In Maritime Education and Training In Southeast Asia (COMETSEA ) 2023

*“Enhancing Maritime Education and Training in Southeast Asia”*

**September 26<sup>th</sup> -27<sup>th</sup> ,2023**

**Jakarta, Indonesia**

Organized by :

**Sekolah Tinggi Ilmu Pelayaran**

### **Committee :**

#### **Honorary Chair**

Ir. H. Ahmad Wahid, S.T., M.T., M.Mar.E, Sekolah Tinggi Ilmu Pelayaran, Indonesia.

#### **Advisory Board Chairs**

Capt. Chanra Purnama, M.MTr, M.Mar, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Dr. Capt. Jaja Suparman, MM, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Supardi, M.Si., M.Mar.E, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Capt. Ariandy Syamsul Bhahri, M.Si, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

dr. Hesti Ekawati, M.MTr, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

#### **Reviewers**

Prof. Hoga Saragih, ST.,MT.,IPM, Universitas Bakrie, Jakarta.

Dr. Damoyanto Purba, S.Si.T., M.Pd, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Dr. April Gunawan Malau, S.Si., MM, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Dr. Markus Yando, S.Si.T., MM, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Dr. Abdul Rachman, MM, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Dr. Drs. Bambang Sumali, M. Sc, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Dr. Larsen Barasa, S.E., M.MTr, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Dr. Isdawimah, ST.,MT, Politeknik Negeri Jakarta, Jakarta.

Dr. Eng. Muslimin, ST.,MT, Politeknik Negeri Jakarta, Jakarta.

Dr. Eka Budi Tjahjono, S.H., MH, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Dr. Dra. Yogi Widiawati, M.Hum, Politeknik Negeri Jakarta, Jakarta.

Dr. Vidya Selasдини, S.Si.T., M.MTr, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Dr. Meilinasari Nurhasanah Hutagaol, S.Si.T., M. M Tr, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Dr. Rr Retno Sawitri Wulandari, S.SiT.,M.MTr, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Haolia Rahman,Ph.D, Politeknik Negeri Jakarta, Jakarta.

A Chalid Pasyah, Dip.Tesl., M.Pd, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Purnama N.F. Lumban Batu, S.Pd.,M.Hum, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Laila Puspitasari Anggraini, S.Pd., M.Pd, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Vega Fonsula Andromeda, S.ST., S.Pd., M.Hum, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Pargaulan Dwikora Sianjuntak, S. Si. T., MM, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

Bagaskoro, S.Kom., MM, Sekolah Tinggi Ilmu Pelayaran, Jakarta.

### **Conference Committee Chair**

Dr. April Gunawan Malau.S.Si.,MM

### **Conference Committee Co- Chair**

Dr. Vidya Selasdini, M.MTr.

Imam Fahcruddin, S.Si., M.Sc.

### **Program Committee**

Dr. Markus Yando, S.SiT., MM.

Dr. Meilinasari Nurhasanah Hutagaol, S.SiT., M. MTr.

Agus Leonard Togatorop, M.Si.

Capt. Suhartini, S.SiT., M.MTr .

Dr. Rr. Retno Sawitri Wulandari,S.SiT.,M.MTr., QRMO.

### **Registration Committee**

Mukhlas Hamdani, ST., M. Si.

Denny Fitriall, S.Si., MT.

Yudhiyono, S.Si., MT.

Israa Ferdinan.

Suharto Tri Sayoga.

### **Registration Committee**

Dr. Drs. Bambang Sumali.,M.Sc.

Laila Puspitasari Anggraini, S.Pd, M.Pd.

Nurul Rahmani Eliana.

Sari Kusumaningrum, S.S., M.Hum.

Muhammad Marzuki.

Niken Imas Dhanar Santika, S. Tr. Pel.

### **Registration Committee**

Nafi Almuzani, M. MTr., M. Mar. E.

Titis Ari Wibowo, S.SiT., M. MTr.

Marlin, S.Pd., MM.

Lucinda Nurrahma, S.Sos.

Edy Kurniawan, ST., MM.

### **Logistics Committee**

Nafi Almuzani, M. MTr., M. Mar. E.

Titis Ari Wibowo, S.SiT., M. MTr.

Marlin, S.Pd., MM.

Lucinda Nurrahma, S.Sos.

Edy Kurniawan, ST., MM.

### **Publications Committee**

Asman Ala, ST., MT.

Dr. Abdul Rachman, MM.

Trisianti, S.S., M. Pd.

Diah Zakiah, ST., MT.

Nasri, MT., M. Mar. E.

Gigih Prastyantoko, S. Tr. Pel.

Triyul Bagus Bangun P.

### **Publications Committee**

Dr.Capt. Damoyanto Purba, M.Mar., M.Pd.

Dr. Didik Sulisty Kurniawan, ST., M. Si.

Dyah Ratna Pandu Pertiwi, S.Si.





## **PREFACE :** **CONFERENCE ON MARITIME EDUCATION AND TRAINING IN SOUTHEAST ASIA (COMETSEA)**

We begin by expressing our gratitude to the divine providence for the realization of the Conference on Maritime Education and Training in Southeast Asia (COMETSEA), held at Sekolah Tinggi Ilmu Pelayaran on September 26th - 27th, 2023.

The role of maritime education and training cannot be understated; it stands as a cornerstone of significance. In this context, the establishment of the Association for Maritime Education and Training in Southeast Asia (AMETSEA) assumes a pivotal position. AMETSEA is poised to emerge as a collaborative nexus for maritime education and training institutions across the ASEAN region, providing a platform to exchange knowledge, share experiences, and pool resources with the aim of enhancing the caliber and pertinence of maritime education curricula and programs.

With an ethos of inclusivity and mutual reinforcement, AMETSEA endeavors to orchestrate a symbiotic relationship between educational establishments and the maritime industry. This alignment is anticipated to bridge the gap between industry requisites and graduates of maritime education, thereby cultivating adept human capital capable of thriving in the competitive global and regional job markets. The establishment of the Association for Maritime Education and Training in Southeast Asia (AMETSEA), or the Association of Maritime Education and Training Institutions in Southeast Asia, stands as a seminal step towards rectifying skills shortages and addressing maritime and port workforce deficiencies within the ASEAN member states.

Concurrently, this Conference on Maritime Education and Training in Southeast Asia (COMETSEA) unfolds under the thematic umbrella of “Enhancing Maritime Education and Training in Southeast Asia.” This thematic choice stands as a compelling means to fortify our roles as educators and researchers, enabling us to contribute substantively to the advancement of maritime knowledge. Moreover, it facilitates a productive exchange of ideas germane to the conference’s overarching theme.

Our aspirations are attuned to acquiring novel insights, tools, and resources emanating from this conference, thereby fostering the professional maturation of the maritime sphere. The spectrum of sessions afforded participants the prospect to cultivate connections with peers and colleagues, thereby broadening their networks. The eminent keynote speakers, including Prof. Maximo Q. Mejia, Jr. (President of the World Maritime University), Dr. Manivannan Subramaniam (MMA - Malaysia), Angelica M. Baylon (Pioneer MMAP External Relations Director), Anthony Khoo (SNIMI - Singapore), Ir. H. Ahmad Wahid, S.T., M.T., M.Mar.E (Principal of Sekolah Tinggi Ilmu Pelayaran), and distinguished moderators such as Dr. Capt. Wisnu Handoko, M.Sc (Secretary of HRD, Transportation Agency) and Dr. Capt. Mugen S. Sartoto, M.Sc (Head of Tanjung Perak Navigation District Class I), augmented the event's stature.

This event served as an exemplary forum for the maritime education community, drawing close to 200 participants. The conference committee conveys their best wishes for the resounding success of the Conference on Maritime Education and Training in Southeast Asia (COMETSEA) 2023 and the subsequent indexing of proceedings in Scopus publications. The concerted diligence, unwavering support, and fervent dedication of each of these individuals, who collectively constitute the conference's bedrock, have paved the way for participants and attendees to glean from the richness of the presentations and papers presented.

In closing, the realization of the Conference on Maritime Education and Training in Southeast Asia (COMETSEA) stands as a testament to the collective commitment to advancing maritime education and fostering collaborative innovation. The coming together of esteemed educators, researchers, industry professionals, and policymakers underlines the shared aspiration for a more vibrant and proficient maritime sector in the ASEAN region. We extend our heartfelt appreciation to all contributors, attendees, and supporters who have made this event a resounding success.

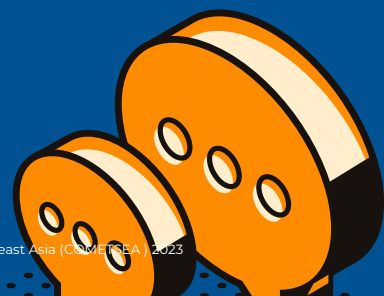
As we navigate the currents of progress, let us harness the knowledge and connections forged during this conference to chart a course toward elevated maritime education and training. Together, we forge a path that not only meets the evolving demands of the industry but also nurtures a new generation of maritime leaders capable of shaping a dynamic and prosperous maritime landscape.

**With gratitude and anticipation,**

**Ahmad Wahid**

Principal

Sekolah Tinggi Ilmu Pelayaran





### **A keynote speech**

Delivered at the Conference in Maritime Education and Training  
in Southeast Asia 2023

**Ir. H. Ahmad Wahid, ST., M.T., M.Mar. E.**

Principal at Sekolah Tinggi Ilmu Pelayaran, Jakarta, Indonesia

## **ADVANCING MARITIME EDUCATION IN SOUTHEAST ASIA THROUGH AMETSEA**

**Ladies and gentlemen,  
Esteemed guests,**

A very good day to all of you. Today marks a significant milestone as we gather here at the inaugural meeting of the Association of Maritime Education and Training in Southeast Asia, or AMETSEA. As the Principal of the esteemed STIP Jakarta, I am deeply honored to address this distinguished assembly and share my thoughts on the profound impact and promising future that AMETSEA holds for maritime education and training in our region.

The maritime industry stands as the lifeblood of our economies within the ASEAN community. Its integral role in fostering economic growth and global connectivity cannot be overstated. As the demand for proficient maritime professionals continues to surge, it becomes imperative that we bolster the quality and capacity of our educational institutions to meet this demand. The establishment of AMETSEA signifies a turning point in our region's commitment to elevating maritime education and training to new heights.

Our ASEAN region, with its sprawling coastlines and strategic maritime positioning, bears immense maritime potential. This very potential places us in a unique position on the global maritime stage. The ASEAN Free Trade Area 2025 adds momentum to our aspirations, solidifying our resolve to nurture a maritime industry that fosters not only economic competitiveness but also holistic growth across our ASEAN community.

At its core, AMETSEA represents a consortium of collaboration. It is a platform that transcends borders, bringing together maritime education and training institutions from across our member states. This association fosters an environment of shared insights, knowledge exchange, and best practices. In essence, AMETSEA encapsulates the spirit of unity that underscores our collective commitment to advancing the maritime sector and equipping it with a skilled workforce that will drive regional and global progress.

As we embark on this collective endeavor, it is incumbent upon us to acknowledge and address the challenges faced by our seafarers. These individuals, who devote their lives to navigating the high seas and ensuring the smooth flow of global trade, often find themselves undervalued and overlooked. It is our solemn duty to empower them through comprehensive academic and operational training, fostering their integration into the broader fabric of society.

Furthermore, the maritime industry is undergoing a rapid transformation. Emerging technologies, environmental consciousness, and research and development are reshaping its landscape. Through AMETSEA, we are poised to design curricula that not only imbue our seafarers with technical proficiency but also prepare them as leaders in this dynamic maritime ecosystem.

Ladies and gentlemen, while we embrace the boundless opportunities that AMETSEA presents, we must also be cognizant of the challenges that lie ahead. By devising standardized guidelines, sharing knowledge, and strategizing comprehensive plans for maritime education and training, we can bridge the existing gaps, amplify competencies, and catalyze the maritime industry's evolution.

In this pursuit, our commitment resonates harmoniously with the ASEAN Connectivity 2025 vision. This vision underscores the importance of mobility, skills development, and the reduction of gaps in the vocational skills market. Through AMETSEA, we embark on a journey of collaboration and learning, positioning our students to excel in an increasingly multicultural maritime environment. They will emerge not just as skilled professionals but as agents of change, propelling our industry to new horizons.

In closing, let us remember that the path we tread today is one that will shape not just the maritime industry but the future trajectory of our nations. By cultivating a skilled, unified maritime workforce, we are paving the way for ASEAN's progress on the global stage.

I extend my deepest gratitude to each one of you for your dedication to this transformative cause. Together, let us chart a course towards a brighter, more connected, and prosperous future for maritime education and training in Southeast Asia through AMETSEA.

**Thank you.**







**A keynote speech**

Delivered at the Conference in Maritime Education and Training  
in Southeast Asia 2023

**Prof. Maximo Q. Mejia, Jr.**

President of World Maritime University, Sweden

## **THE ROLE OF MARITIME EDUCATION AND TRAINING IN THE DECARBONIZATION OF SHIPPING**

### **All protocols observed,**

Distinguished Guests, Ladies and Gentlemen,

As President of the World Maritime University (WMU), it gives me great pleasure to address you today on the topic “The Role of Maritime Education and Training in the Decarbonization of Shipping.”

Shipping has played an indispensable role in facilitating trade throughout most of human civilization’s history. The ascendancy of the importance of shipping, especially since the industrial revolution, is no coincidence. Its ability to transport large volumes of goods cost-effectively, leveraging the advantage of “economies of scale,” has propelled it to the forefront of the global economy.

The present-day shipping industry, renowned for its economic and efficient long-distance transport, occupies a pivotal position in the world economy. Often celebrated as the cornerstone of international trade and a steadfast contributor to globalization, maritime transport is not just a conduit; it is one of the invisible pillars of modern life.

Indeed, shipping serves as the lifeblood of the global economy. When the maritime sector encounters difficulties, the entire global economic machinery comes to a halt. Nevertheless, while shipping boasts significant scale, it also grapples with substantial risks – both in terms of physical challenges and financial uncertainties – inherent in transporting goods across vast oceans.

In recent times it has become abundantly clear that we cannot continue to treat the oceans, and nature as a whole, as we have always done – as a pristine and inexhaustible supply of natural resources that can absorb the negative aspects of every operational activity undertaken on it - without giving thought to its state and sustainability. The oceans remain the basis of all life; global as well as national systems of governance and education have to shift from a paradigm which exclusively seeks the exploitation of the ocean to one of sustainable stewardship and use of the ocean. This is perhaps the most important required paradigm shift of our time. It can be argued that the problems associated with the lack of stewardship, respect, protection and sustainable use of the oceans in many jurisdictions, arise from a lack of knowledge and appropriate education about the ocean and how humanity should interact with it.

Climate action aligned with the “Paris Agreement” has compelled the maritime industry to mitigate the negative environmental impacts of shipping activities. Industry needs are rapidly shifting towards the green and ecological operation of ships and ports.

The decarbonization of shipping has been described by many as the single biggest issue the IMO has faced in its history. However, the specific technical issues are not the only issues regarding sustainability as a whole. The concept of greener shipping must be seen as relevant to all aspects of the industry, from maritime education for sustainability, through maritime law, insurance, ship-building, repair and operation, financing, regulation, logistics, port operations, bunkering, brokering, Flag State and Port State action etc.

In July this year, the International Maritime Organization's (IMO) Marine Environment Protection Committee (MEPC) adopted the “2023 IMO Strategy on Reduction of GHG Emissions from Ships” which sent a clear and unanimous message to reach net-zero GHG emissions by around 2050.

Maritime energy transition is therefore inevitable, yet it is also an opportunity for the industry. Maritime transport is an essential pillar for world trade, carrying over 80% of international merchandise by volume and emitting around 3% of global anthropogenic emissions. The maritime industry inherently offers the lowest GHG emissions and energy consumption per transport mode, and has a wide range of technical possibilities for energy saving and replacement of fossil energy with sustainable options. Maritime transport also has great opportunities for adopting carbon-free energy sources, given the dimensions of commercial vessels, and that vast renewable energy resources are available on the world's oceans.

Given the phenomenal scale of the challenge ahead, the maritime industry as a whole, stands at the cusp of one of the greatest technical, economic and operational challenges in its modern history. The transition will require unprecedented transformations, adaptations, and changes in the way the industry works as well as the adoption of novel technical innovations. For instance, it will no doubt see ports

take a central role as energy hubs in this transition. We are already starting to witness the emergence of innovative energy saving measures, (net) zero-carbon renewable fuels, and the use of modern renewable energy technologies, such as wind and solar propulsion technologies. Greenhouse gas emissions reduction will be implemented internationally via the regulatory instruments adopted as part of the MARPOL convention. Fifty years after its adoption, the MARPOL convention has never been more important and active!

Maritime education, indeed all education, has a critical role to play in making this current generation and ones to come, appreciate – not only cognitively, but also affectively – the importance of good stewardship of the natural environment in which the maritime industry operates.

The question is what kind of education will support the diverse facets of maritime human resource management and development in this kind of ever-changing global and even national context in light of decarbonization?

It is our view that the education for the future should definitely cover the technical competencies required in the multiple professional areas of the maritime sector, whether in respect of ship operation (seafarers) or in areas such as maritime finance, shipbuilding, and maritime and ocean governance. Such technical competencies, based on well-grounded knowledge and skills, are of course essential and critical to the survival of the industry. There are many previous and ongoing research efforts to understand the specific skills that will be needed for the medium to long term in, for example, ship operations.

The nature of work will change. More sophisticated ships will be deployed and seafarers will work in a more sophisticated environment. WMU's research continues to foresee that these ships will be in greater demand in the future, together with highly-skilled seafarers. Up to 2040, the demand for seafarers is expected to increase at a steady rate, allaying any initial fears that seafaring jobs would vanish due to automation. The technological transition in the maritime industry will affect seafarers differently depending on their profession, rank and job function. Upskilling and reskilling are important interventions in support of seafarers in light of the rapid change in their working environment due to the advancement of smart and green technologies.

The next generation of seafarers will undoubtedly require a range of skills in the context of the decarbonized shipping sector. According to the WMU-ITF study on the Future of Work, seafarers will need administrative and communication skills, proficiency in preparing ships for inspections, the ability to respond to emergencies, digital and ICT skills, knowledge of maintaining cyber security, and expertise in commissioning new machinery in the short term (2022 – 2026).

In the medium term (2027 – 2030), skill requirements primarily revolve around upskilling provided by maritime technology providers who supply the latest operational

software to shipping companies. These include skills in operating and maintaining hybrid propulsion systems, ballast treatment plants, dual fuel engine technology, LNG handling systems, advanced electrical systems and automation control systems, advanced alarm and monitoring systems, and ship operational software.

Long-term (2031 – 2040) skill requirements encompass the ability, knowledge, and competence to operate and maintain real-time monitoring systems, handle alternative fuels and advanced navigational systems, work in shore control centers, employ technical energy efficiency measures, operate wind-assisted technologies and advanced electrified propulsion systems, as well as utilize pollution/emission prevention technologies.

Future skills for seafarers are not solely technology-related but also include soft skills such as interpersonal, managerial, and creative skills. The top five soft skills for the future will include quality control and safety awareness, resilience, stress tolerance and flexibility, personnel management, proficiency in using and operating digital technology, and active learning. Furthermore, above the specific technical skills needed for the maritime industry today and in the short-term, there is the need for a new paradigm of education that seeks to engender in learners, a problem-solving mindset, critical thinking, resilience, adaptability, systems thinking and collaboration (as opposed to the all too pervasive siloed approach taken by maritime actors). Just as important is the kind of education that fosters the important skill of continuous learning.

As the nature of work evolves, massive training will be needed. Institutions need to support seafarers with lifelong learning and career development as well as the importance of ensuring that the adaptation of advanced technology also promotes the health and well-being of seafarers.

The education and capacity-building of a global cadre of future maritime leaders are at the heart of WMU's mission as an international post-graduate institution of the IMO, for maritime and oceans education, research and capacity building. Most relevant in the context of the challenges facing maritime education and training in the decarbonization of shipping is the World Maritime University's longest-standing specialization – the Maritime Education and Training (MET) specialization. The MET specialization has been designed for people engaged in the leadership and administration of human development processes in the context of the maritime industry, as well as organizational management in both academic and non-academic settings. It provides the knowledge essential for the optimization of maritime education systems under international law, the creation, acquisition and transfer of knowledge across maritime knowledge clusters and the optimum leadership of contemporary organizations with emphasis on strategic planning and people management. In other words, the MET specialization is designed so that its graduates are equipped and ready to ensure that they – when they return to their home countries – that their own students are instructed, trained, and educated in a curriculum that is fully in line



with the standards adopted at the International Maritime Organization, including decarbonization.

WMU has the responsibility of instilling in its graduates a sense of purpose, a clear understanding of the importance of maritime policy and governance and an appreciation of the need to collaborate on a global basis under a common framework. We are inspiring leadership and innovation for a sustainable maritime and oceans future. Ultimately, more efficient and decarbonized shipping, working in partnership with a port sector supported by governments, will be a major driver towards global stability and sustainable development for the good of humanity.

To date, there are 5,807 WMU maritime alumni from more than 170 countries and territories. Indonesian graduates ranks the fifth largest group of WMU Graduates marking a total number 183.

WMU alumni hold positions of prominence around the world working at the forefront to ensure a safe, secure, sustainable, and efficient shipping for all. They serve as senior maritime officials in ministries, as directors of shipping companies and ports, as heads of maritime academies and naval organizations, and many represent their home countries at IMO and international forums and organizations. I myself am a WMU graduate of Class of 1994.

In a maritime world transitioning to decarbonization, education and training are needed more than ever before to ensure that future maritime professionals are equipped with cutting-edge and state-of-the-art knowledge and skills. I therefore wish to take this opportunity to congratulate the establishment of the Association for Maritime Education and Training in Southeast Asia (AMETSEA), which aims to create a platform for maritime educational institutions, industry representatives, and government agencies to collectively address common challenges, share best practices, and collaboratively develop initiatives that enhance the quality and capacity of the programmes of AMETSEA.

It is also my hope that WMU and AMETSEA will enter into fruitful collaboration and more students from the Southeast Asia region could benefit from the opportunities to pursue studies at WMU.

**Thank you!**



**A keynote speech**

Delivered at the Conference in Maritime Education and Training  
in Southeast Asia 2023

**Ts. DR. CAPT. MANIVANNAN SUBRAMANIAM**

Deputy, Ketua Eksekutif Akademi Laut Malaysia (ALAM)

## **RESPONDING TO EMERGING MARINE TECHNOLOGY (MARINETECH) – A STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS (SWOT) ANALYSIS SUMMARY FOR MARITIME EDUCATION & TRAINING (MET) ACADEMIA**

Ladies and gentlemen, distinguished guests, and esteemed colleagues,

As we gather here today, we embark on a voyage of exploration into the realm of the maritime industry, under the banner of “Responding to Emerging Marine Technology - A SWOT Analysis Summary for Maritime Education & Training Academia.”

In a world where innovation surges like the tides, it is incumbent upon us to navigate these waters with wisdom and foresight. Our focus today is the transformative force of Marine Technologies (MarineTech) and its profound influence on Maritime Education & Training Academia.

In this vast ocean of progress, we encounter a fleet of Emerging Marine Technologies that are reshaping the maritime landscape. From Green Propulsion and Alternative Fuels to the autonomy of Autonomous Vessels, these technologies are not mere tools; they signify a shift in paradigms. They herald opportunities for heightened efficiency, safety, environmental sustainability, and operational cost savings that promise to redefine the maritime narrative.

Yet, within these opportunities lie challenges that demand our attention. Challenges ranging from workforce training and regulatory compliance to the intricacies of

cybersecurity and infrastructure upgrades. Embracing these technologies isn't just a choice; it's the beacon guiding us toward a future where relevance is synonymous with adaptability.

Ladies and gentlemen, distinguished guests, and esteemed colleagues, now let's get into the summary of the Strengths, Weaknesses, Opportunities, And Threats (SWOT) analysis findings.

Many of the MET academia, being long in existence, boasts **Strengths** that are the pillars of its success. The first strength, an Established Reputation, stands as a testament to the academy's unwavering commitment to excellence. This reputation attracts students and industry partners alike, fostering collaborations that propel the maritime sector to new heights. Our second strength lies in the Experienced Faculty who navigate our students' journeys with expertise and insight. Their mentorship ensures that the education imparted here is nothing short of exceptional. State-of-the-art Facilities form our third strength, providing students with an environment that mirrors the maritime world. Equipped with modern simulation labs, ship simulators, and cutting-edge technology, the academy's facilities enable hands-on learning.

Diverse Course Offerings constitute our fourth strength, offering a constellation of paths for students to explore within the maritime tapestry. This diversity nurtures versatile professionals poised to shape the future. Industry Connections, our fifth strength, form a bridge between academia and practice. These connections empower students with internships, job placements, and research opportunities that enrich their educational journey.

However, as with any voyage, challenges await our navigation. **Weaknesses** remind us of our journey's trials. The first weakness, the High Cost of Education, challenges us to ensure accessibility for students regardless of their economic backgrounds. Limited Enrolment emerges as the second challenge, requiring innovative strategies to attract and retain students in an industry marked by unique dynamics. Competition from Rival Academies constitutes our third weakness. Amidst competition, our academy must stand out by showcasing its distinctive strengths. Aging Infrastructure emerges as the fourth weakness. Renovating our facilities safeguards the quality of training, ensuring that our students learn in a conducive environment. Compliance and Safety Regulations comprise our fifth weakness. As regulations evolve, we must remain agile to maintain compliance and uphold the highest standards.

**Opportunities** beckon, like distant horizons awaiting exploration. Emerging Maritime Technologies offer our first opportunity. By integrating courses that address autonomous vessels and green shipping practices, we equip our students for the future. Global Shipping Demand forms the second opportunity. The growing need for global trade presents avenues for skilled maritime professionals. International Collaboration emerges as the third opportunity. Partnerships with foreign maritime institutions facilitate cross-cultural exchanges and collaborative research.

The fourth opportunity is Specialized Training, allowing us to cater to niche areas like maritime law, cybersecurity, and sustainability. Embracing E-learning and Distance Education is the fifth opportunity, extending our reach to corners of the world previously beyond our grasp.

However, **Threats** cast shadows on the path ahead. Economic Downturn, our first threat, challenges job prospects during periods of uncertainty. Automation and Job Displacement, the second threat, impel us to prepare students for a shifting job landscape. A Changing Regulatory Environment forms our third threat, necessitating flexibility in curriculum updates and training methodologies. Environmental Concerns, the fourth threat, compel us to prioritize sustainable practices to comply with evolving regulations. The fifth threat, Global Health Crises, underscores the need to remain adaptable in a world marked by unpredictability.

To thrive in the ever-evolving maritime industry, the academy must harness its strengths, address its weaknesses, seize opportunities, and confront threats. This journey involves modernizing infrastructure, fostering industry partnerships, delivering specialized training, and embracing technological advancements.

Ladies and gentlemen, distinguished guests, and esteemed colleagues,

In closing, let us remember that **“ignorance” is not an option.** The maritime sector’s transformation through Emerging Marine Technologies is inexorable, and our response is pivotal.

This is more than an exposition; it is a summons to action.

A call for Maritime Education & Training Academia to rise, to channel knowledge and foresight, and to contribute significantly to the maritime industry’s evolution.

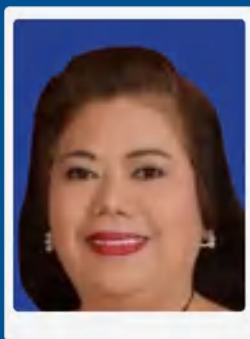
Our path ahead is one where academia and industry converge in destiny. Adapting maritime education to the currents of Emerging Marine Technology isn’t just a choice; it’s a compass guiding us to a future where academia and industry sail as allies, shaping a new generation of maritime professionals poised to navigate uncharted technological waters.

In the ever-changing seas of innovation, we must navigate with knowledge and adaptability. As we embrace Emerging Marine Technologies, let us heed the call to action and rise together, steering toward a horizon of competence, competitiveness, and sustainability.

**Thank you.**







**A keynote speech**

Delivered at the Conference in Maritime Education and Training  
in Southeast Asia 2023

**Dr. Angelica M Baylon**

MAAP ERO Director, Philippines and PAEPI Global Chair Emeritus

## **FOSTERING COLLABORATION AND PARTNERSHIPS IN SOUTHEAST ASIA REGION**

Ladies and gentlemen, esteemed members of the intended Association of Maritime Education and Training Universities in Southeast Asia or **AMETSEA**, I extend my warmest greetings to all of you. It is an immense honour to stand before you today as we discuss a topic of utmost significance: fostering **collaboration and partnerships** in our esteemed educational institutions.

We are grateful to STIP–Jakarta Indonesia for organizing this International Conference on MET for Southeast Asia or COMETSEA, providing a venue for us to meet and discuss ways and means to strengthen further collaboration and partnerships between MET institutions in the Southeast Asia Region, consisting of 11 countries: the Philippines, Vietnam, Thailand, Myanmar (Burma), Malaysia, Cambodia, Laos, Singapore, Timor-Leste (East Timor), Brunei Darussalam, and Indonesia.

One prospect in today's gathering is the inaugural Discussion for the possible establishment of the Association of MET in Southeast Asia or AMETSEA. Our presence here means we are all committed to promoting collaboration and partnerships. We, as representatives of our respective MET institutions, have undoubtedly recognized that working together is not just an option but an essential ingredient for success in our rapidly evolving maritime world.

In today's interconnected and complex society, collaboration and partnerships have become fundamental principles driving progress and innovation. Whether in maritime education and training, academia, business, or even our personal lives, collaboration

and partnerships empower us to achieve more remarkable outcomes than we could ever accomplish alone. So first, what exactly is collaboration?

Collaboration goes beyond mere cooperation. It is the active involvement of diverse individual teams of MET institutions, pooling their knowledge, skills, and resources to achieve a common goal. Collaboration requires open communication, trust, and shared vision. It is about leveraging each other's strengths, embracing differences, and finding synergy in collective efforts.

Now, let us delve into why collaboration is crucial in the maritime world.

**1. First and foremost, collaboration fosters innovation.** By bringing together individuals with unique perspectives and experiences, we create an environment conducive to creativity and out-of-the-box thinking. When diverse minds collaborate, they spark new ideas, challenge existing norms, and generate ground-breaking solutions to complex problems.

**2. Secondly, collaboration enhances productivity.** By sharing resources, information, and expertise, we can streamline processes, reduce duplication of effort, and accomplish tasks more efficiently. When collaborating, we tap into a collective intelligence that propels us forward.

**3. Thirdly, collaboration breeds resilience.** In a rapidly changing landscape, no single entity can possess the necessary skills, knowledge, or resources to address our multifaceted challenges. By collaborating, we build robust networks and partnerships that enable us to adapt, overcome obstacles, and thrive in adversity.

**4. Fourth, collaboration promotes learning and personal growth.** When we collaborate, we learn from each other experiences, perspectives, and approaches. We expand our horizons, broaden our understanding, and develop new skills. Collaboration provides a platform for continuous learning and development, both individually and collectively.

**5. Lastly, collaboration is essential for achieving Sustainable Development.** Whether addressing environmental issues, social inequalities, or economic challenges, collaboration among MET institutions, governments, businesses, industry, non-profit organizations, and individuals is vital. Sustainable development demands collective action and collaboration across disciplines and sectors.

So, how can we foster a culture of collaboration? MET institutions are composed of people or individuals.

**1. First, we must cultivate an environment of trust and mutual respect.** Collaboration thrives when individuals of MET institutions feel safe to share their ideas, express their concerns, and take risks. We must create a culture that embraces diversity, values different perspectives, and encourages open dialogue.

2. Secondly, we must break down silos and encourage cross-functional collaboration. Often, the most innovative solutions emerge when individuals from different backgrounds and areas of expertise collaborate. We must promote interdisciplinary collaboration and create platforms for knowledge sharing and collaboration.

3. Furthermore, we should leverage technology to facilitate collaboration. Technology offers us numerous tools and platforms for seamless communications, virtual collaboration, and remote teamwork in today's digital age. Embracing these technologies can bridge geographical barriers and foster collaboration on a global scale.

4. Finally, we must lead by example. As leaders, we are responsible for promoting collaboration within our respective institutions and communities and in our region as members of the Southeast Asia region. By embodying the principles of collaboration, we inspire and empower others to do the same.

In an era where challenges transcend borders and opportunities are abundant, fostering and nurturing collaborations between nations, organizations, and individuals has become more crucial. So, what exactly are partnerships?

Global partnerships embody the spirit of unity, cooperation, and shared responsibility. It recognized that no single entity can single-handedly address our complex issues, such as climate change, poverty, inequality, and global health crises. These challenges require collective action where diverse stakeholders come together, pooling their resources, expertise, and ideas to achieve common goals.

Global partnerships offer a myriad of benefits. They provide a platform for knowledge exchange, enabling nations to learn from one another's successes and failures. They foster innovation by encouraging the pooling of technological advancements, research, and development. They create economies of scale, allowing for more efficient and cost-effective solutions to global problems. Moreover, partnerships build trust and understanding among nations, paving the way for peaceful coexistence and diplomatic collaboration. However, forging effective global partnerships has its challenges. It demands overcoming barriers such as political differences, cultural diversity, and conflicting interests. It requires commitment, open dialogue, and a willingness to compromise. To overcome these obstacles, we must embrace the principles of inclusivity, mutual respect, and shared responsibility. So, how do we build successful global partnerships? Allow me to share a few fundamental principles that can guide AMETSEA efforts.

1. Firstly, we must prioritize open and transparent communication. Effective partnerships thrive on clear and honest dialogues where all stakeholders have a voice and feel heard. By promoting active listening and fostering an environment of trust, we can foster collaboration that transcends borders.

2. Secondly, we should emphasize the importance of shared goals and values. Partnerships built on common objectives, such as the United Nations Sustainable Development Goals, provide a clear framework for action. When Nations and organizations rally around a shared vision for a better world, they can align their efforts and maximize their impact.

3. Thirdly, we must promote inclusivity and diversity. Global partnerships should reflect the rich tapestry of our world, involving participants from different regions, cultures, and sectors. By harnessing the power of diverse perspectives and experiences, we can generate innovative solutions that address the needs of all communities.

4. Fourthly, we should harness the potential of technology and digital connectivity. Technology is an enabler in today's digital age, bringing people together and facilitating collaboration across borders. By leveraging digital platforms, we can overcome geographic limitations and connect individuals and organizations from around the globe.

5. Lastly, we must ensure accountability and evaluate the impact of our partnerships. Regular monitoring, evaluation, and reporting mechanisms are essential to gauge progress and identify areas of improvement. We can continuously refine our strategies by holding ourselves accountable and ensuring our partnerships yield meaningful results.

As shown, it can be surmised that collaboration and partnerships are both forms of working together towards a common goal, but they differ in their nature, scope, and level of commitment. Here are the differences and similarities between collaboration and partnerships:

### **1. Nature of Relationship:**

- Collaboration is a cooperative process where individuals or organizations work together, often temporarily, to achieve a specific objective or complete a project. It involves sharing resources, knowledge, and expertise to achieve a common goal.

- Partnership is a more formal and long-term relationship between two or more entities. It involves a legal agreement or contract that defines each partner's terms, responsibilities, and expectations. Partnerships often have a broader scope and can extend beyond a specific project.

### **2. Purpose:**

- Collaboration typically focuses on achieving a specific goal or completing a project. It may involve individuals or organizations with complementary skills and expertise coming together to solve a problem or create something.

- Partnerships are usually formed to achieve long-term objectives. They often involve strategic alliances between entities with similar values, goals, or interests. Partnerships can be formed for various reasons, such as business expansion, market access, or joint research and development.

### 3. Level of Commitment:

- Collaboration tends to be more flexible and less formal than partnerships. It allows participants to work together for a specific duration or until the completion of a project. There is typically no long-term commitment beyond the collaborative effort.

- Partnerships involve a higher level of commitment and often require a significant investment of time, resources, and effort from each partner. They are typically established longer and require ongoing cooperation and coordination to achieve mutual benefits.

### 4. Governance and Decision-making:

- In collaborations, decision-making processes may vary depending on the nature and scale of the project. It may involve consensus among the collaborating parties or be driven by a designated leader or project manager.

- Partnerships usually have a more formalized governance structure. Decision-making processes are often outlined in the partnership agreement, specifying how decisions will be made, responsibilities, and profit or risk-sharing arrangements.

### 5. Legal and Financial Aspects:

- Collaborations generally do not involve formal legal agreements. The parties may have informal arrangements or contracts specifying the terms of the collaboration. Financial contributions and resource sharing are often determined on a case-by-case basis.

- Partnerships involve legally binding agreements that outline each partner's rights, obligations, and responsibilities. They may include financial contributions, profit sharing, liability, dispute resolution, and partnership termination provisions.

Despite these differences, collaboration and partnerships also share some similarities:

- Both involve working together towards a common goal or objective.
- Both require effective communication, trust, and mutual respect between the involved parties.
- Both can provide opportunities for leveraging complementary strengths, resources, and expertise.
- Both can foster innovation, shared learning, and increased efficiency.

Ultimately, the choice between collaboration and partnership depends on the specific circumstances, goals, and level of commitment desired by the parties involved.

The maritime industry is paramount to Southeast Asia, serving as a vital conduit for trade, connectivity, and economic growth. Our universities play a pivotal role in shaping the future of this industry by providing quality education, conducting cutting-edge research, and producing skilled professionals who will drive progress in maritime sectors such as shipping, logistics, marine engineering, marine transportation, and maritime law.

In the face of a rapidly changing global landscape marked by technological advancements, evolving regulatory frameworks, and shifting geopolitical dynamics, it is imperative that we, as educational institutions, adapt and embrace collaboration and partnerships as critical pillars of our strategy. By doing so, we can collectively address the challenges and seize the opportunities.

At its core, collaboration entails transcending boundaries and working together to achieve common goals. As maritime universities, we possess unique strengths, expertise, and resources that, when combined, can yield remarkable outcomes. By emphasizing collaboration within our network of universities, we can foster an environment of shared learning where best practices are exchanged and knowledge is disseminated for the more significant benefit of all.

Cross-faculty collaboration is essential in our pursuit of excellence. We must encourage interdisciplinary approaches that bring together maritime law experts, engineers, scientists, economists, trainers, and educators to tackle complex issues holistically. By leveraging the diverse perspectives and skills of our faculty and students, we can develop comprehensive solutions that address the multifaceted challenges faced by the maritime industry, such as maritime safety, environmental sustainability, digitalization, and human resource development.

Furthermore, collaboration should extend beyond the boundaries of our universities. We must actively seek partnerships with government institutions, non-governmental organizations, the private sector, and international organizations. These collaborations can foster innovation, promote knowledge transfer, and enhance the practical relevance of our educational programs. By engaging with industry leaders, policymakers, and stakeholders, we can align our curriculum with industry needs, develop internship and apprenticeship programs, and ensure that our graduates are equipped with the skills demanded by the job market.

However, fostering collaboration and partnerships has its challenges. It requires a collective commitment to overcome barriers, such as differences in institutional cultures, varying academic structures, and divergent priorities. Effective communication, mutual respect, and a shared vision are essential for successful collaborations. We must establish mechanisms for regular dialogue, joint research initiatives, and faculty and student exchanges. By working together, we can build trust, bridge gaps, and nurture an environment of cooperation that transcends individual universities.

Moreover, we must remain mindful of the broader regional context in pursuing collaboration and partnerships. Southeast Asia is diverse, encompassing nations with unique cultural, social, and economic characteristics. We must foster inclusivity, ensuring that universities from across the region are actively involved. By embracing diversity, we can leverage all member universities' collective wisdom and experiences, creating a truly representative and inclusive platform for collaboration and partnership.

In conclusion, as maritime education and training universities in Southeast Asia, we have a shared responsibility to shape the future of our region's maritime industry. Collaboration is not just a buzzword but a powerful force that can transform our world. It is a crucial driver of innovation, productivity, resilience, and Sustainable Development. By Collaborating, we tap into the collective wisdom, skills, and resources of diverse individuals and organizations, enabling us to achieve more significant outcomes than we could ever accomplish alone. With AMETSEA dedicated to collaboration, we are crucial in promoting and fostering collaboration within our respective domains. We shall embrace collaboration as a core value and embed it into the fabric of our respective organizations. We encourage our members to seek partnerships, share knowledge, and work together towards a common goal. Through the intended AMETSEA, let us embrace collaboration as a driving force for positive change.

By fostering collaboration and partnerships, we can leverage our collective strengths, knowledge, and resources to shape a more sustainable—equitable, and prosperous future. Let us embrace the power of collaboration, break down the barriers that divide us, and forge partnerships that transcend borders, cultures, and ideologies. We can transcend traditional boundaries, pool resources, and collectively address the challenges. Let us overcome challenges, unlock new possibilities, and create a better future together. Let us create a world where the potential of every individual and nation is realized.

**Thank you**





**A keynote speech**

Delivered at the Conference in Maritime Education and Training  
in Southeast Asia 2023

**Anthony Khoo**

Singapore (Nantong) International Maritime Institute (SNIMI)

## **FOSTERING INDUSTRY-ACADEMIA COLLABORATION AND PARTNERSHIPS**

His Excellencies,  
Distinguished Guests and Participants,  
Ladies and Gentlemen,

A very good afternoon to you. I am Capt Anthony Khoo from the Singapore (Nantong) International Maritime Institute. It gives me great pleasure and honour to be here as one of the guest speakers at this prestigious conference.

Today, I would like to share my views on the benefits of fostering Industry-Academia collaboration and partnership in maritime education and training in Southeast Asia.

As we are aware, the shipping industry is undergoing a period of significant changes. New technologies and trends such as green technology, electric ships, autonomous ships, blockchain, big data and predictive analytics, and cybersecurity are emerging. No doubt these important revolutions are changing the face of the maritime industry. They have the potential to make shipping more efficient, sustainable and safe. However, we know that the best technology cannot replace the role of the human operator in the equation. Hence, beyond technology, I think the quality of human capital is undoubtedly the more important resource, for the shipping industry.

Unlike technology which we can acquire once it is developed, human capital is a more difficult resource to cultivate and develop. The success or failure of the adoption of new technology depends on the quality, knowledge and experience of the human operating



it. Well-trained staff will determine the speed and level of successful adoption of new technology. On the other hand, poorly trained staff may fail to reap the benefits of new technology.

The quality of human capital in shipping is measured by both their individual and collective competencies. Their competencies are, in turn, depend largely on the education and training they receive initially, and their experiences thereafter. Therefore, I think maritime education and training institutions play a critical role in sharpening the human element in the shipping industry. Today, we are very fortunate to gather many knowledgeable and experienced maritime education and training experts here. They will share their expertise on how we should synergize our approach, collaborate, share best practices, innovate our education and training system and methodologies. Our common objective is to produce quality human capital for the shipping industry.

The Singapore (Nantong) International Maritime Institute, or SNIMI for short, is a joint venture maritime institute between Singapore and China. It was jointly established by the Singapore Organisation of Seamen, Singhai Marine Services Singapore and Jiangsu Shipping College. SNIMI's headquarters is located within the Jiangsu Shipping College in Jiangsu Province, about 70km north of Shanghai. Its campus is approximately 63 hectares in size and has a foot-print of over 340,000m<sup>2</sup> of infrastructure. SNIMI is equipped with state-of-art training facilities such as simulators, engineering and electrical workshops, training galley and modern classrooms just to name a few.

SNIMI is managed based on an internationally established approach. We adopt industry best practices and use an innovative pedagogy for all our training and programs. As a training centre in China, SNIMI is recognized and approved by China MSA. We are ISO 9001:2015 certified by DNV. Our institute-overseas enterprises collaborating model achieved the national-level China Education Achievement First Class Award, garnering recognition, accolades and publicity for Jiangsu Shipping College and SNIMI.

SNIMI is a strong advocate of establishing collaboration and partnerships with other maritime institutions and ship owners and managers. We believe that collaboration and partnerships are the critical approaches to first attain, and then upkeep, a high standard of maritime education and training. Collaboration and partnership allow SNIMI to gather the latest development on the ground, not just from our own experiences, but also the experiences of our partners. Through sharing and working together, it will make our maritime training more relevant and responsive for the shipping industry.

With this belief, SNIMI has consistently explored every opportunity for collaborative partnerships with like-minded partners. Over the years, we have established collaborative partnerships with many international institutions in Singapore, Malaysia, Myanmar, China and South Korea etc. These collaborative partnerships allow SNIMI to conduct company-specified training for shipping companies tailored to their training needs. It has also facilitated teachers/students exchanges between Jiangsu Shipping College and our partner institutions.

Since our establishment, SNIMI has been working with shipowners/managers to develop bespoke training programs, catering to the specific training needs of individual shipping companies. We have obtained very positive feedback from the respective shipping companies for assisting them in 2 ways. First, by enhancing specific competencies identified by the shipping companies and, second, by generating training scenarios to capture the essential lessons learned and prevent the reoccurrence of undesirable maritime incidents.

I would like to take this opportunity to highlight the major win-win benefits that we experienced through collaboration and partnerships with other maritime institutions and shipowners/managers:

1. First, collaboration and partnerships between maritime institutions allows both institutions to jointly build capability through exploring high-tech training equipment or system. It also allows partners to share the responses and results they gathered from testing the use of these latest training methodologies. From the sharing, we can fine tune to offer better maritime education and training that meets the training needs for new topics such as smart and green shipping.

2. Second, I think there are benefits beyond allowing partner institutions to share responses and results on best practices in maritime education and training. It is evident that collaboration and partnerships among maritime institutions also enable partner institutions to go further to refine current best practices. This can be achieved through interaction and discussions which will improve education and training effectiveness. Such refinement can lead to further improvement on current best practices and even establish new benchmark to a higher level.

3. Third, resources-wise, collaboration and partnerships among maritime institutions allow the sharing and hence, optimization of common resources. These include trainers and training facilities among others. The shared objective is to enhance all institutions' capabilities to offer more comprehensive programs to the shipping industries.

4. Fourth, collaboration and partnerships among maritime institutions provide more choices. Choices translate to flexibility for ship owners and managers to select the most appropriate venues to train their multi-national seafarers. Such choices and flexibility can produce cost savings for shipping companies. In this aspect, while SNIMI is headquartered in China, we are able to conduct training in Singapore, South Korea, Georgia, Myanmar etc if it is required by the shipping companies. Such flexibility and choice are particularly cost-efficient for companies that recruit from a single country of origin while operating with multi-national seafarers.

5. Fifth, collaboration and partnerships with other maritime institutions offer opportunities for teachers and students exchanges. The maritime industry is global with participation from many different countries, each with its unique culture, yet requiring them to work together. Therefore, enhancing the learning of various cultures

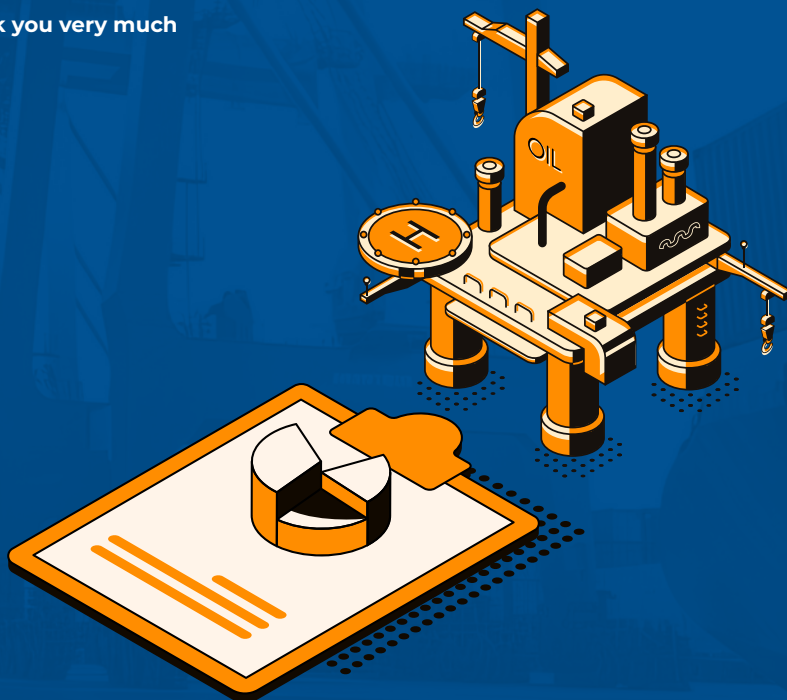
and understanding of people from different countries is an important aspect to ensure harmony onboard. Having teachers and students exchanges will help bridge cultural divides. Deepening and widening the cultural knowledge and experiences of teachers and trainers sharpened their sensitivities leading to better quality teaching.

6. Sixth, collaboration and partnerships with the shipowners/managers to identify their training needs will lead to 'tailor-made' training for their crew and even staff. Such a targeted training approach addresses specific areas of improvement identified by the shipowners/managers. Targeted training produces the most relevant training for shipping companies as it ensures faster improvement and results.

To conclude, SNIMI's experiences from collaboration and partnerships with the institutions and shipowners/managers have proved to be extremely beneficial for all partners. More than that, it has translated into better quality training for trainees. Collaboration and partnership have also allowed partner institutions to make our maritime training more relevant and timely for the shipping industry and allow us to upkeep a very high standard of maritime education and training.

SNIMI has benefitted greatly from our collaboration and partnerships with the institutions and shipowners/managers. We intend to continue and look forward to expanding our network of collaboration and partnership. Therefore, we welcome any institution who wishes to collaborate with us and we will explore opportunities together.

**Thank you very much**



# EVENT RUNDOWN

**Tuesday, 26<sup>th</sup> September 2023**

<b>Registration</b>	Receptionists	<b>08.00 - 09.00 WIB</b>
<b>Opening by MC</b>	MC (Putri Dessy Fridayanthy)	<b>09.00 - 09.02 WIB</b>
<b>Opening Dance: Gending Sriwijaya</b>	Dance Tim	<b>09.02 - 09.05 WIB</b>
<b>National Anthem: Indonesia Raya</b>	MC (Putri Dessy Fridayanthy)	<b>09.05 - 09.07 WIB</b>
<b>Welcoming address</b>	Head of HRD Transportation Agency	<b>09.07 - 09.10 WIB</b>
<b>Official Inauguration Speech</b>	Minister of Transportation (if on-site)	<b>09.10 - 09.15 WIB</b>
<b>Photo session</b>	MC (Putri Dessy Fridayanthy)	<b>09.15 - 09.30 WIB</b>
<b>Coffee Break</b>	MC (Putri Dessy Fridayanthy)	<b>09.30 - 10.00 WIB</b>

## Tuesday, 26<sup>th</sup> September 2023

### Keynote Speech 1:

Prof. Maximo Q. Mejia, Jr. (President of World Maritime University, Sweden)

Topic: The role of maritime education and training in the decarbonization of shipping

Moderator 1:

Dr. Capt. Wisnu Handoko, M.Sc.

10.00 - 10.30 WIB

### Keynote Speech 2:

Dr. Capt. Manivannan Subramaniam (Deputy, Ketua Eksekutif Akademi Laut Malaysia (ALAM))

Topic:  
Responding To Emerging Marine Technology (MarineTech) – A Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis Summary For Maritime Education & Training (MET) Academia

Moderator 1:

Dr. Capt. Wisnu Handoko, M.Sc.

10.30 - 11.00 WIB

## Tuesday, 26<sup>th</sup> September 2023

### Keynote Speech 3:

Prof. Angelica M. Baylon  
(External Relation  
Director Of MAAP,  
Philippines)

Topic:  
Fostering Collaboration  
and Partnerships in  
Southeast Asia Region

### Moderator 1:

Dr. Capt. Wisnu  
Handoko, M.Sc.

11.00 – 11.30 WIB

### Discussion (Q&A)

**Delivery of placards  
to keynote speakers  
& moderator**

### Moderator 1:

Dr. Capt. Wisnu  
Handoko, M.Sc.

### Delivered by:

Head of HRD,  
Transportation  
Agency

11.30 – 12.00 WIB

### Lunch break

MC (Putri Dessy  
Fridayanthy)

12.00 - 13.00 WIB

### Keynote Speech 4:

Anthony Khoo  
(Sr. Manager At  
Singapore (Nantong) ,  
International Maritime  
Institute)

Topic: Fostering  
Industry - Academia  
Collaboration And  
Partnerships

Mc (Putri Dessy  
Fridayanthy)

### Moderator 1:

Dr. Capt. Mugen S.  
Sartoto, M.Sc .

13.00 - 13.30 WIB

## Tuesday, 26<sup>th</sup> September 2023

### Keynote Speech 5:

Ir. H. Ahmad Wahid, S.T.,  
M.T., M.Mar.E.  
(Principal At Sekolah  
Tinggi Ilmu Pelayaran,  
Jakarta)

Topic:  
Advancing Maritime  
Education In Southeast  
Asia Through Ametsea

### Moderator 2:

Dr. Capt. Mugen S.  
Sartoto, M.Sc.

13.30- 14.00 WIB

### Discussion (Q&A)

Delivery of placards  
to keynote speakers  
& moderator

### Moderator 2:

Dr. Capt. Mugen  
M.Sc.c.

### Delivered by:

Secretary of HRD,  
Transportation  
Agency

14.00 - 14.30 WIB

### Coffee Break

MC (Putri Dessy  
Fridayanthi)

14.30 - 15.00 WIB

### Conclusion and Closing of Day 1

Moderator and MC

15.00 – 15.30 WIB

# EVENT RUNDOWN

Wednesday, 27<sup>th</sup> September 2023

<b>Registration</b>	Receptionists	08.00 - 08.30 WIB
<b>Briefing Session in Main room</b>	MC (Niken Sitalaksmi Widjaja, S. H., M. Sc.)	08.30 - 08.45 WIB
<b>Parallel session 1</b>		
Steering Committee Meeting at STIP Jakarta	<b>Moderator:</b> Vidya Selasdini Minute-takers: Nurul Rahmani Eliana <b>Minute-takers:</b> Nurul Rahmani Eliana	08.45 - 11.45 WIB
Steering Committee Report (Signing minutes of meeting)	All members of Steering Committee AMETSEA	11.45 - 12.00 WIB
<b>Lunch Break</b>	MC (Niken Sitalaksmi Widjaja, S. H., M. Sc.)	12.00 - 13.00 WIB
<b>Parallel session 2</b>		
Steering Committee Campuss Tour	<b>Moderator:</b> EO	12.00 - 13.00 WIB
Steering Committee return to conference venue from STIP	<b>Moderator:</b> EO	13.00 - 16.00 WIB
Moderators reports from each room	<b>Moderator</b>	16.00 - 16.30 WIB
<b>Closing</b>	MC (Niken Sitalaksmi Widjaja, S. H., M. Sc.)	16.30 - 17.00 WIB



# TABLE OF CONTENTS

## Sessions : Fostering Collaboration and Partnerships

1. The Influence of Tug Tugboat Services and Vessel Document Readiness on the Productivity of the MT AKRA 102 Vessel Agency Agency by PT Transuta Lintas Samudera, Merak Branch
2. The Factors of Seafarer's Loyalty: Perspectives of Cadets

## Sessions : Innovations in Maritime Education and Training

1. Maritime English Learning Application Design Based on Interactive Multimedia
2. Exploration and Practice for the Talent Education Mode Reformation Called Dual Orientations & Quatra Cooperation between Colleges and Enterprises in the field of Stages on the Marine Vocational Education
3. XR (Extended Reality) Technology is Poised to Revolutionize Technical and Vocational Education and Training (TVET)
4. The Strategy of Learning Innovation Improvement through the MBKM Program at STIP Jakarta; An Empirical Study
5. Impact of Malfunction Load Cell and Mechanical actuator Sensor to Performance of Ship Stability General Cargo Simulator at Unit Laboratory and Workshop STIP Jakarta
6. The Influence Of Digitalization On The Effectiveness Of The National Logistics Ecosystem
7. The Influence Of Weather And The Use Of Cranes On The Smoothness Of Transhipment Of Coal Loading And Unlocking At Taboneo PT. Puradika Unlockable Loading Prosperous
8. The Effect of Implementing the Inaportnet System on Ship Agency Services at PT. Maritel Bahtera Abadi Balikpapan
9. The Effect of Using the Crew Inspector and Bassnet Applications on the Documentation System at PT. Aweidhia Crew Management
10. Collaborative Learning through Literature Circles in ESL

# TABLE OF CONTENTS

11. Promoting Critical Literacy in the ESL Context: Implementing a Project for Vocational School Learners
12. Maritime Education In Digital Age
13. Effectiveness Of The Services Of Sea Route Pathways Through Public Service Obligation To Pelayaran PT. Pelni (Persero)
14. The Influence of Assist Tug Vessel Operating Time and Service Rates Pandu – Delay Against PT. Batam Mandiri Delta cruise
15. Utilizing Problem-Based Learning for Enhancing Critical Thinking in Leadership and Teamwork Education
16. The Efforts To Increase Crew Skills On Handling High Pressure In Liquefied Natural Gas Cargo Tanks On Steam Ships Triputra
17. Analysis of the Causes of Delays in Inert Gas Production in Inert Gas Generators to Streamline the Loading and Unloading Process MT. Senipah
18. The Influence Of Recruitment Process And Crew Recruitment Quality By Increasing Crew Requests for the Performance of PT AWEIDHIA
19. Utilizing cultural values of “Five Human Images of Transportation”: Efforts to Build the Professional Character of STIP Cadets
20. Revealing Challenges and Opportunities in Southeast Asia’s Maritime Industry

## Sessions : Enhancing Competency-Based Training And Assessment

1. The Implementation Of The Communicative Language Teaching (CLT) Approach In The Teaching Learning Process Of Maritime English In The Short Course Program For Able Deck And Able Engine Class.
2. Designing LCT Competences-Integrated Syllabuses Of English Maritime Courses For Cadet Level 2 In Port Shipping Management Department At STIP Jakarta.

# TABLE OF CONTENTS

1. Accident Risk Assessment in the Ships Construction, Repair and Operation
2. Exploring Trainee Maritime Pilots' Perceptions and Expectations of Negotiation of Meaning Strategies in Pilotage Operations
3. Analysis of the Level of Unsafe Action and Unsafe Condition of the Fleet Owned by PT Pertamina International Shipping
4. Cargo Handling Simulator to Enhance Competency in Maritime Education

## Sessions : Sustainability and Environmental Considerations

1. The Effect Of Crew Change On Sea Employment Agreement Contract At PT Amas Iscindo Utama
2. Implementation Of The Lean Six Sigma Method As An Effort To Reduce Demurrage In The Loading And Unloading Of PT Buana Lintas Lautan Tankers
3. Maritime Education In Brunei - Minimizing Trainees Dropout From Seafarer Career
4. IMO Green Shipping Agenda and Regulatory Challenges for Maritime Sustainability
5. Contribution Of Solar Energy At Ship Power System In Reducing Emission And Fuel Consumption
6. The Impacts And Challenges Emanating As Consequence From The "Black, Grey, And White (BGW) List" On Port State Control In The Asia-Pacific Region
7. Causes Of Damage To Loading And Unloading Equipment On Mv. Darya Maju
8. Design Of Water Detection System In Ship Fuel Pipelines

# TABLE OF CONTENTS

## Sessions : Bridging the Skills Gap

1. Bridging Seafarer's English Language Skills Gap in Maritime Industry
2. Sharing Experiences in Developing Curriculum in Ocean Literacy with SMEs: The Ocean Forecast System (OFS) Case Study
3. A Case Study in Effectively Bridging the Knowledge Gap in Providing Marine Weather Information through Ocean Modelling
4. The Influence of The Soft Skill Competence of STIP Cadets on International Seafarer Competition

## Sessions : Development in Navigational and Marine Engineering Technology

1. Cyber Risks on Autonomous Ships in UK Marine Insurance Law
2. Controller Equipment on the Android Application on Vessel
3. Optimization Of Line Cooldown Operations For Ship Readiness In Discharging And Loading On LNG EKAPUTRA 1
4. Prevention of cargo water ingress sensor error
5. Design An Implementation Smart Hydroponic System Using Microcontroller
6. Design of a Condition Monitoring System for Outseal Nano V.4 PLC-Based Generators
7. Design An Implementation Tower Crane Controller Using Microcontroller
8. Prototype Design Of Ship Bridge Access Security System Using Smartcard
9. Fuel Characteristics Identification Affecting The Combustion Process On The Main Engine On The Ship Using Mfo (Marine Fuel Oil)
10. Efforts To Prevent Corrosion On Ship Body Steel Plate Using Cathode Protection With Zinc Anode Method As Sacrificial Anoda

# ABSTRACT

## **The Influence of Tug Boat Services and Vessel Document Readiness on the Productivity of the MT AKRA 102 Vessel Agency Agencyd by PT Transuta Lintas Samudera, Merak Branch**

**Aprilesa Sahata Marel Sinaga and April Gunawan Malau**

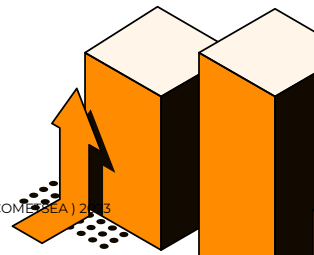
Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [marelsinaga@gmail.com](mailto:marelsinaga@gmail.com) and [aprilgunawan22@gmail.com](mailto:aprilgunawan22@gmail.com)

This study aims to determine the effect of tugboat services and ship document readiness on the productivity of the MT Akra 102 Ship Agency, which is represented by PT Transuta Lintas Samudera, Merak Branch. There are several problems with delays in the berthing of foreign ships that occurred at the Port of Banten. An example is the ship MT. AKRA 102 which is routinely agented every time it comes to the Merak Port area. PT Transuta Lintas Samudera, Merak Branch is one of the companies engaged in ship agency services.

There is a phenomenon of non-fulfillment of MT AKRA ship productivity targets. MT AKRA 102 expected by the company with what happened in the field. Especially in June, August, October and December in 2021 and in May and June in 2022 which was caused by delays in pilot tugboat services and readiness of ship documents. This can affect consumer confidence in agency companies which can lead to reduced company income.

The approach method used in this study uses a quantitative approach. The target population in this study were ship agents, ship owners, jetty masters and company employees with a sample of 45 respondents. The sampling technique in this study uses saturated samples, research uses quantitative data types. Quantitative data obtained from this study is data from the results of respondents' answers presented in the form of a Likert scale. Data collection techniques by distributing questionnaires or questionnaires directly to respondents. The data statistical method used is descriptive statistics and SPSS version 25.0.



## **The Factors of Seafarer's Loyalty: Perspectives of Cadets**

**Trisanti**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [tristantiagasta24@gmail.com](mailto:tristantiagasta24@gmail.com)

The maritime industry faces challenges brought about by global competition and technological advancements, necessitating companies to optimize their human resources management to maintain competitiveness. Seafarers frequently change employers upon contract completion, posing difficulties for shipping companies in cultivating loyalty among crew members. Economic crises, increased competition, and a shortage of qualified seafarers further complicate recruitment and retention efforts. This paper explores the factors influencing seafarer loyalty to shipping companies, focusing on cadets who serve as a potential recruitment source. The theoretical framework incorporates

the theory of reasoned action and the theory of planned behavior to examine the attitudes, subjective norms, and perceived behavioral control affecting seafarer loyalty. The study employs qualitative methods, including surveys, interviews with senior seafarers and company management, and career data analysis. The findings reveal that factors such as positive experiences, company reputation, career prospects, and working conditions contribute to seafarers' loyalty. Key conclusions highlight the importance of company reputation, overall job satisfaction, and factors related to compensation and career progression in influencing seafarers' loyalty to shipping companies.

## **Maritime English Learning Application Design Based on Interactive Multimedia**

**Dyah Ratnaningsih**

Poltekpel Surabaya

Corresponding author : [dyalifhana@poltekpel-sby.ac.id](mailto:dyalifhana@poltekpel-sby.ac.id)

Maritime English is the main language of communication at sea or in the field maritime. Therefore, cadets and cadets at the maritime polytechnic must master this language. Current learning activities cannot be separated from technological developments, hence

research it aims to produce an interesting maritime English learning media and easy to use so that cadets can learn it independently or with the guidance of the lecturer. This learning media is in the form of an application regarding vocabulary implemented in various dialogues to

improve speaking skills accordingly with the situation on board. This web-based application uses the PHP programming language. Web-based applications are needed because the content or material in the application will continue to grow and develop. This application can be accessed and run on a personal computer (PC) or on smartphones (mobile phones). The material available on the application is based on the syllabus on Diploma III Nautical study program semester 4 on VHF Communication.

Research result shows that the design of an application with the name DyMarE, goes well in the sense that it can be accessed and used in maritime English learning activities in class and outside the classroom with using devices such as PCs and smartphones. While the perception of cadets shows that this application is interesting and useful for improving their abilities in maritime English.

## **Exploration and Practice for the Talent Education Mode Reformation Called Dual Orientations & Quatra Cooperation between Colleges and Enterprises in the field of Stages on the Marine Vocational Education**

**Wang Qi, Xie Jun, Mao Mujia**

Corresponding author : [28382469@qq.com](mailto:28382469@qq.com)

Deepening the cooperation between colleges and enterprises is the important segment to realize the high-quality education for the talents of marine specialty. For covering the deficiency of the consistent campus education in the traditional teaching of marine specialty, which excludes the surrounding of real ship handling, the operation of navigable practice, scene of English oral speaking and so on, the article, taking Jiangsu Shipping College as an example, introduces the connotation of reform and innovation for the talent education mode called Dual Orientations & Quatra Stages, which bases on the cooperation between colleges and enterprises and carries out on and off campus,

on and off board teaching methods. It analyses reforming measures for the mechanism innovation of cooperation between colleges and enterprises, optimizing of education program, designing of teaching tasks, promoting of teaching staff, implementing of evaluation system and others. It proves that the practical application of the mode efficiently covers the deficiency of the traditionally consistent marine talents education. At the same time, this mode greatly enhances the job adaptability for the graduates of marine specialty through reinforcing team cooperation, multi-culture, practical skills and the application of new technology.

# XR (Extended Reality) Technology is Poised to Revolutionize Technical and Vocational Education and Training (TVET)

**Brad Ker**

Corresponding author : [brad@labtech.org](mailto:brad@labtech.org)

XR technology is poised to revolutionize TVET and usher in a new era of learning in the context of the Fourth Industrial Revolution (IR4.0). With its seamless integration of virtual, augmented, and mixed reality, XR offers immersive and interactive experiences that bridge the gap between theoretical knowledge and practical application, making it the future of TVET training.

In the context of IR4.0, industries are undergoing rapid technological advancements, demanding a highly skilled and adaptable workforce. XR technology provides a cutting-edge solution to cater to these changing demands. By enabling learners to simulate real-world scenarios, XR breaks down the limitations of traditional classroom training. Trainees can now practice in virtual environments that closely mimic real-world workplaces, allowing them to apply theoretical concepts, develop hands-on skills, and familiarize themselves with the latest technologies without facing actual risks.

Moreover, XR technology offers personalized and self-paced learning experiences, catering to the individual needs and learning styles of each trainee. Interactive modules and gamification elements engage learners, promoting active participation and knowledge retention.

Collaborative learning is another compelling feature of XR technology. Trainees can connect and interact with peers, instructors, or industry experts from different geographical locations, fostering a global learning community and cross-cultural exchange of knowledge.

XR technology's immersive, interactive, and adaptable nature positions it as the future of TVET training in the context of IR4.0. Its potential to simulate real-world experiences, personalized learning, cost-effectiveness, and collaborative capabilities make it a transformative tool for preparing a highly skilled and tech-savvy workforce to meet the challenges of IR4.0.





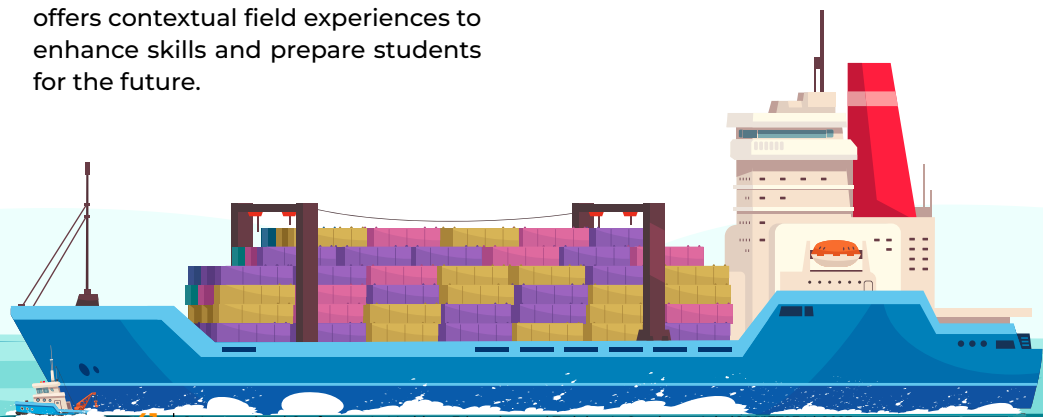
# The Strategy of Learning Innovation Improvement through the MBKM Program at STIP Jakarta; An Empirical Study

**A. Chalid Pasyah, Retno Sawitri Wulandari, Vidya Selasdini**  
Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [chalidpasyah@yahoo.com](mailto:chalidpasyah@yahoo.com), [shota\\_ku82@yahoo.com](mailto:shota_ku82@yahoo.com), [selasdini.vidya@gmail.com](mailto:selasdini.vidya@gmail.com)

This empirical study aims to identify the learning innovation improvement strategy through the MBKM program at STIP Jakarta. The literature research technique was used to conduct this study, and information was gathered through literature references, pertinent observations and documentation, interviews with members of the Academic Division, as well as other studies on the MBKM policy. Merdeka Belajar Kampus Merdeka (MBKM), a self-study independent campus project of the Government of Indonesia through the Ministry of Education, Culture, Research and Technology, enables students to explore their talents and interests outside of academic learning. This program is a part of a larger endeavor that has two parts: Merdeka Belajar, which encourages talent and autonomous study and Kampus Merdeka, which offers contextual field experiences to enhance skills and prepare students for the future.

According to the study's findings, the MBKM program's implementation at STIP had not been as effective as it could have been because only three out of eight types of off-campus learning research, internships/work experiences, and humanitarian projects—had been completed, while five more were still being worked on through the management policy process. In order for students to attain the best learning outcomes and to constantly be relevant in terms of attitude, knowledge, and skills, STIP must develop policies and execute innovative learning methods. The Kampus Merdeka is an independent and adaptable organization that promotes a creative learning environment that doesn't restrict and fits the demands of cadets, which in turn has implications for improving the quality of STIP education.



# **Analyze Performance of Ship Stability General Cargo Simulator at Unit Laboratories and Workshop STIP Jakarta**

**Abdul Rachman, Bhima Siswo Putro**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [abdulrachmanagb.33@gmail.com](mailto:abdulrachmanagb.33@gmail.com), [bhimas34man@gmail.com](mailto:bhimas34man@gmail.com)

Ship Stability General Cargo Simulator (SSTS) is a laboratory to provide training on the configuration and procedures for maintaining ship stability as a training facility for cadets in the Nautical field.

The Purpose of Research to analyze cause of problem and synchronizing between ship stability simulator and water column miniatur ship to get maximum learning proses practicum.

Methodology of research is Mix metode Qualitative and Quantitative Short Result : The factor causing the non-optimal practice of Cargo Ship Simulator Stability learning in the Laboratory unit is Malfunction Load and mechanical actuator Sensors on Ship Stability equipment.

Key word : 1.Malfunction 2. sensor 3. Simulator Performance

## **The Influence Of Digitalization On The Effectiveness Of The National Logistics Ecosystem**

**Namira Sakinah, Larsen Barasa, M. Nurdin**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [chalidpasyah@yahoo.com](mailto:chalidpasyah@yahoo.com), [shota\\_ku82@yahoo.com](mailto:shota_ku82@yahoo.com), [selasdini.vidya@gmail.com](mailto:selasdini.vidya@gmail.com)

Inefficiencies have been found in logistics processes and costs. Statistics on logistics activities show that Indonesia has the highest logistics costs among ASEAN countries (World Bank, 2019). The high cost of domestic logistics in Indonesia is not only caused by the high cost of land and sea transportation. In addition, based on the survey, there has been no significant increase in time and cost efficiency in the last two years (Doing business, 2020). The purpose of this study is to determine and analyze the effect of digitization of the NLE

(National Logistic Ecosystem) on the effectiveness of the national logistics ecosystem, especially at Tanjung Priok Port. The research pattern used by the author to compile this research is a quantitative descriptive research pattern. In general, the implementation of the National Logistic Ecosystem (NLE) at Tanjung Priok Port shows the potential to support logistics development. NLE has the potential to become an efficient, transparent, and integrated digital platform to support national logistics performance.

# The Influence Of Weather And The Use Of Cranes On The Smoothness Of Transshipment Of Coal Loading And Unloading At Taboneo PT. Puradika Unlockable Loading Prosperous

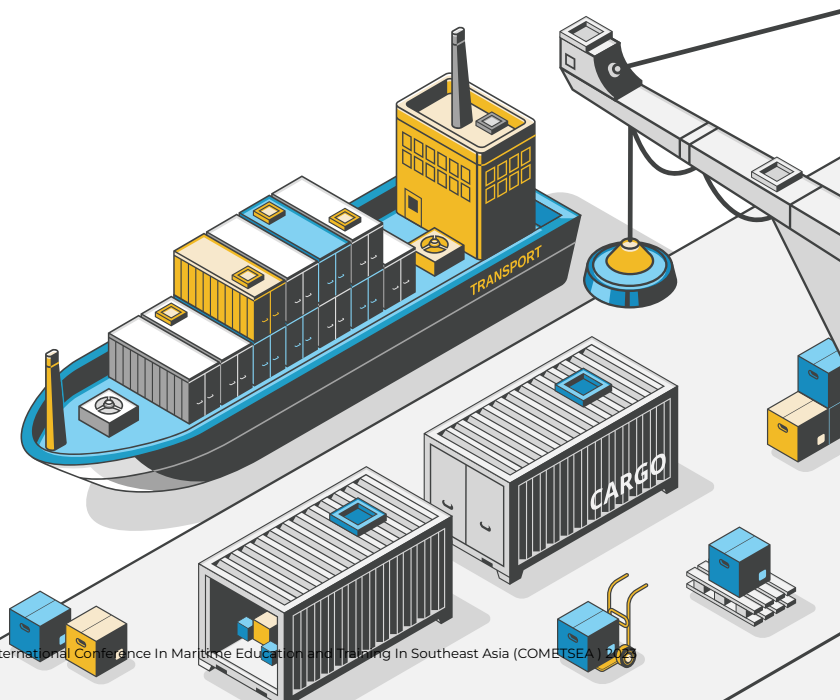
**Abdul Rachman, Bhima Siswo Putro**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [abdulrachmanagb.33@gmail.com](mailto:abdulrachmanagb.33@gmail.com), [bhimas34man@gmail.com](mailto:bhimas34man@gmail.com)

The purpose of writing this thesis is to determine the effect of weather and the use of cranes in transshipment coal loading and unloading activities. at PT. Puradika Loading and Unloading Makmur. The population in this study were foreman employees at PT. Puradika Loading and Unloading Makmur. Respondents in this study were 32 people. Sampling was carried out using purposive sampling technique. Data collection was carried out using primary data through a questionnaire using a Likert scale to measure 15 indicator statements. Data analysis techniques using quantitative

methods. Data processing using the SPSS 25.0 application. Data analysis using linear regression analysis techniques, t test, f test. The results of the study show that the influence of weather and the use of cranes together have an effect on coal loading and unloading activities. From the results of the discussion, it can be concluded that the influence of the weather and the use of cranes at Puradika Bongkar Muat Makmur can be said to have a significant effect on the smooth loading and unloading of coal at PT. Puradika Loading and Unloading Makmur.



# The Effect of Implementing the Inaportnet System on Ship Agency Services at PT. Maritel Bahtera Abadi Balikpapan

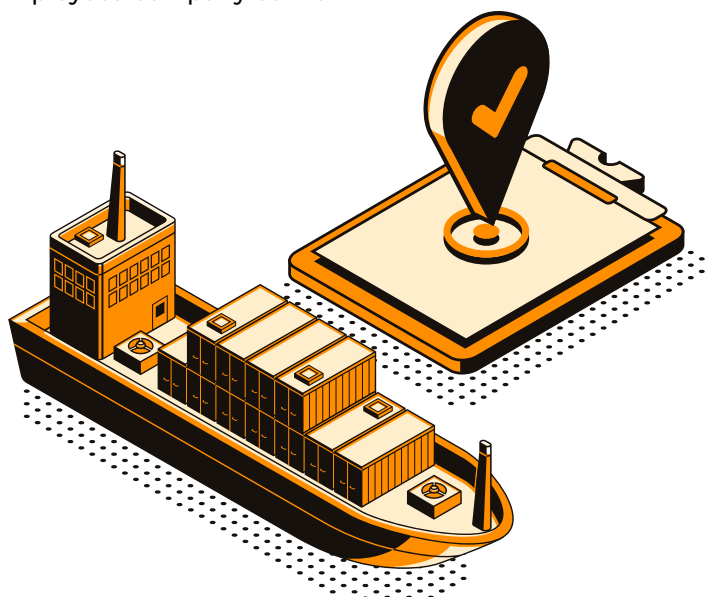
Abdul Rachman, Bhima Siswo Putro

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [abdulrachmanagb.33@gmail.com](mailto:abdulrachmanagb.33@gmail.com), [bhimas34man@gmail.com](mailto:bhimas34man@gmail.com)

PT Maritel Bahtera Abadi Balikpapan is Which One companies operating in the field service agency ship. Based on existing problems discuss about influence system inaportnet to agent ship. Objective study This is For know And analyze how much big influence system inaportnet to ships that are agent of PT Maritel Bahtera Abadi Balikpapan. Study done with processing data from problems experienced user service System Inaportnet in the Balikpapan area . Type researchs used is method quantitative. Data collection was carried out with spread questionnaire to user service covers agents, employees company as well

as moderate student practice land. In look for results calculation, research This using SPSS 25.0 and a number of data analysis namely : analysis statistics descriptive, test validity , test reliability , test normality test linearity, test coefficient determination, test simple linear regression, test coefficient correlation And test hypothesis . Based on data acquisition and data processing. Obtained demonstrating results that variable System inaportnet influential positive in a manner significant to Service Agency Ship with obtained coefficient determination (R Square) of 0.534 or 53.4%.



# THE EFFECT OF USING THE CREW INSPECTOR AND BASSNET APPLICATIONS ON THE DOCUMENTATION SYSTEM AT PT. AWEIDHIA CREW MANAGEMENT

**Shahnaz Rhein Ariata**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [rhein.shahnaz@gmail.com](mailto:rhein.shahnaz@gmail.com)

This study aims to determine the effect of using the crew inspector and bassnet applications on the documentation system at PT. Aweidhia Crew Management. The approach method used in this study uses a quantitative approach. The target population in this study are all employees who work at PT. Aweidhia Crew Management with a sample of 30 respondents.

The sampling technique in this study used a saturated sample. This is due to the number of population at PT. Aweidhia Crew Management is very limited. This research uses quantitative data types. Quantitative data obtained from this study is data from the results of respondents' answers presented in the form of a Likert scale. Data collection techniques by distributing questionnaires or questionnaires directly to respondents.

## COLLABORATIVE LEARNING THROUGH LITERATURE CIRCLES IN ESL

**Marudut Bernadtua Simanjuntak**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [bernadmarudut@gmail.com](mailto:bernadmarudut@gmail.com)

This study delves into the potential of Collaborative Learning through Literature Circles as an innovative approach within the English as a Second Language (ESL) context. With the backdrop of "Innovations in Maritime Education and Training," encompassing digital technologies, simulation, and novel pedagogies, the research addresses the need to enhance maritime students' language skills and critical thinking abilities. The research aims to examine the effectiveness of Literature Circles in fostering collaborative learning, improving language proficiency, and promoting critical analysis among vocational students. Employing a mixed-methods approach, the study combines qualitative analysis of collaborative interactions with quantitative assessment of language development and critical thinking skills.

Findings demonstrate the positive impact of Literature Circles on student engagement, communication competencies, and critical thinking prowess.

Implications extend to educators and stakeholders in maritime education, highlighting the value of innovative teaching methodologies in preparing students for the dynamic maritime industry.

In conclusion, this research underscores the significance of collaborative learning through Literature Circles in ESL instruction. By integrating modern educational strategies with maritime training, the study advocates for a holistic approach to vocational education. The results contribute to advancing the discourse on innovative pedagogies, affirming the potential of collaborative literature-based learning to empower maritime students for success in their careers.

## **PROMOTING CRITICAL LITERACY IN THE ESL CONTEXT: IMPLEMENTING A PROJECT FOR VOCATIONAL SCHOOL LEARNERS**

**Marudut Bernadtua Simanjuntak**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [bernadmarudut@gmail.com](mailto:bernadmarudut@gmail.com)

This research aims to introduce critical literacy within the ESL framework and equip students with the capability to analyze, interpret, and evaluate information effectively, enhancing their communicative and analytical prowess.

Methodologically, a comprehensive approach is undertaken, combining qualitative analysis of project implementation and its influence on students' critical literacy skills. By integrating innovative teaching methodologies, this research unveils the potential for advanced communication and cognitive development.

Findings highlight the significance of critical literacy in vocational and maritime contexts.

They provide insights for educators, curriculum designers, and maritime stakeholders, emphasizing the transformational role of critical literacy in shaping the future of vocational education and maritime expertise. This research bridges language education, vocational training, and maritime competence, enriching the overall learning experience. In conclusion, this study underscores the integration of critical literacy in ESL education for vocational students. It aligns with the evolving maritime landscape, advocating for a comprehensive education that empowers students with critical thinking skills requisite for success in their careers.

# MARITIME EDUCATION IN DIGITAL AGE

**Arleiny**

Politeknik Pelayaran Surabaya

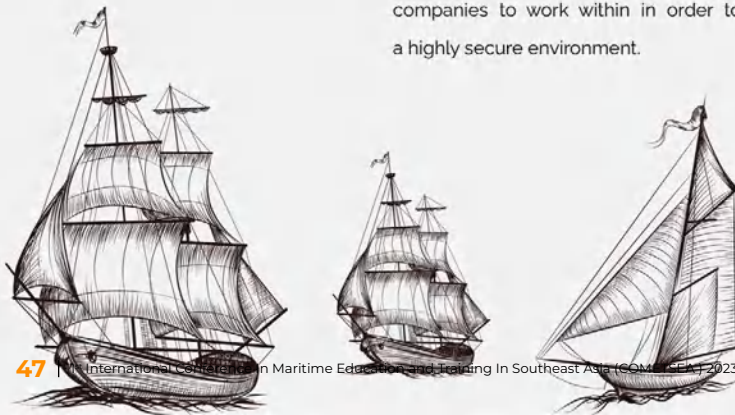
Corresponding author : [arleiny@poltekpel-sby.ac.id](mailto:arleiny@poltekpel-sby.ac.id)

This paper will investigate the current state of affairs in terms of seafarer training in relation to the use of IT systems. The paper will highlight the authors' various education and awareness efforts to motivate change, improve digital literacy, and provide cyber risk management skills across the sector.

Furthermore, we investigate the need for Bridge and Engine Resource Management (BRM/ERM) training renewal. BRM/ERM began as a practical approach to avoiding incidents and accidents. It currently has an automation module, but this is the application of BRM/ERM tools to a partially automated environment, and it needs to be supplemented or adapted to a more automated environment.

The aim of this study is to introduce new technologies and approaches in the maritime education and training (MET). Result of this paper, They are primarily concerned with raising cyber risk awareness and educating people on how to manage cyber risk in a maritime context. There is no single solution, and only a few alternatives are presented here.

It will take an industry-wide effort to ensure that digital systems are used safely and securely. One possible solution is to revisit BRM/ERM and determine what role it can play in providing a solid foundation in skill requirements for those working in the industry. An updated BRM/ERM could define a baseline of cybersecurity skills and awareness, providing a more defined framework for shipping companies to work within in order to maintain a highly secure environment.



# EFFECTIVENESS OF THE SERVICES OF SEA ROUTE PATHWAYS THROUGH PUBLIC SERVICE OBLIGATION TO PELAYARAN PT. PELNI (PERSERO)

Agung Kwartama

Akademi Maritim Nasional Jakarta Raya

Corresponding author : [agungkwartama1977@gmail.com](mailto:agungkwartama1977@gmail.com)

The state-owned company PELNI is felt to be inappropriate and ineffective because often the PSO received has not been used to improve passenger transport services but for other service purposes. The infrastructure gap after the crisis is increasingly worrying. In the fulfilment of Public Service Obligation (PSO) in carrying out the fulfilment of infrastructure, intended for remote areas that do not produce quickly, whose operators experience losses, it becomes necessary to remember to be considered by policy makers. According to Law No. 17 of 2008 "shipping is a unified system consisting of transportation in waters, ports, safety and security, and protection in the maritime environment." The transport system can influence consumer decisions such as travelling. Different consumers will consider different service attributes, reflecting differences in social and economic characteristics. provides several service attributes for transport services. Analysis of the effectiveness of shipping lanes through public service obligations at PT Pelayaran Nasional Indonesia (persero).

## THE INFLUENCE OF ASSIST TUG VESSEL OPERATING TIME AND SERVICE RATES PANDU – DELAY AGAINST PT. BATAM MANDIRI DELTA CRUISE

Deta Awanda

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [detaaw11@gmail.com](mailto:detaaw11@gmail.com)

Guidance is part of the navigational or supporting function in the safety of ship navigation due to the unique characteristics of the port. Quantitative research is a type of research that uses numbers to process data to produce structured information. Quantitative research characteristics using the SPSS application aim to obtain data that describe the characteristics of objects, events, or situations

(Sekaran & Bougie, 2016: 43).



Based on the partial hypothesis test, it is known that the assist tug variable has a positive and significant effect on the performance of PT. Delta independent batam. This is evidenced by 0.002 0.05 and a tcount value of 2,343 ttable 1,697. Assist Tug Contribution to Performance 0.305. So it can be concluded that the first hypothesis in this study is accepted.

This shows that the more reliable and accurate the quality of service performed by employees during the assist tug process at PT. Delta Mandiri Batam, there will be no quality of pilot-tweak service rates and performance. The influence of assist tug operating time has proven to have a positive and significant effect on performance in PT Pelayaran Delta Mandiri Batam company, with a regression coefficient of 0.027 and a t-value of 2.343, t-table 1.697.

## UTILIZING PROBLEM-BASED LEARNING FOR ENHANCING CRITICAL THINKING IN LEADERSHIP AND TEAMWORK EDUCATION

Muhammad Sapril Siregar, Diah Vitaloka Hartati, Nanda Afra Kusturi, Niken Sitalaksmi Widjaja  
Politeknik Pelayaran Malahayati  
Corresponding author : [msaprilsiregar@poltekpelaceh.ac.id](mailto:msaprilsiregar@poltekpelaceh.ac.id), [loka.hartati@gmail.com](mailto:loka.hartati@gmail.com),  
[nandaafra@gmail.com](mailto:nandaafra@gmail.com), [sitalaksmiw@gmail.com](mailto:sitalaksmiw@gmail.com)

Effective leadership and teamwork are pivotal skills for captains and officers in their roles. However, the current approach to teaching these skills often yields suboptimal results in terms of attitudes and learning outcomes.

To address this, we conducted a study aimed at elevating the quality of leadership and teamwork instruction through the implementation of a problem-based learning approach. This method prompts students to solve practical challenges simulating real-world workplace situations.

Employing qualitative methods and utilising Cluster Random sampling, our research revealed that **91.67%** of participants achieved a score of at least 80, surpassing the targeted objective of **85%**. Moreover, student engagement exceeded expectations, with an average activity rate of **86.67%** against a target of **80%**. In conclusion, the integration of problem-based learning models within leadership and teamwork courses holds promise for enhancing students' critical thinking capabilities.



# THE EFFORTS TO INCREASE CREW SKILLS ON HANDLING HIGH PRESSURE IN LIQUEFIED NATURAL GAS CARGO TANKS ON STEAM SHIPS TRIPUTRA

LNG is dangerous if released in large quantities into the air that can cause damage to the ozone layer and if the LNG gas mixes with air with a concentration of 5 to 15% of its volume in the air will result in a fire. The venting process on LNG ships should be avoided unless venting is the last way to release pressure inside the cargo tank.

The purpose of this study is to know the causes and solutions so that the cargo received from the terminal has a safe temperature to load and know the cause factor of the crew lacks the skills and knowledge in the process of handling loads on board the SS TRIPUTRA. The benefits of this research can be used as a reference material in research related to efforts to countermeasures vent out on cargo tanks on LNG vessels and especially ship officers to be able to behave as a leader and controller.

The method used in writing this study uses qualitative descriptive methods. Using this method all the problems found and observed on board will be described and answered questions arising from the formulation of the problems faced.

The collection of data in question is to obtain relevant, accurate, and identify existing data by observation (direct and indirect) and documentation studies. The results obtained are the reasons why this happened and what actions should be taken by the master or officer on board, in order to find the right solution to prevent the problem.

**Irawan Cahya Wicaksono**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [prototexon7@gmail.com](mailto:prototexon7@gmail.com)



# **ANALYSIS OF THE CAUSES OF DELAYS IN INERT GAS PRODUCTION IN INERT GAS GENERATORS TO STREAMLINE THE LOADING AND UNLOADING PROCESS MT. SENIPAH**

in this study the authors describe the problems that occur when loading and unloading using IGG on MT. SENIPAH regarding machine breakdowns and procedures when running IGG. Crew crew's skills and understanding of the Inert Gas Generator is very important to maintain the quality of the maintenance of the Inert Gas. As a result of a lack of understanding in the operation of the Inert Gas Generator which can lead to non-optimal maintenance of the Inert Gas Generator on board and can cause high temperature rises in the tank.

**Tia**

Corresponding author : [tiamaraaa@gmail.com](mailto:tiamaraaa@gmail.com)

The occurrence and fire will not occur if the tanker's cargo tanks are inert or properly inert and according to procedures. Then the damage from fire and explosion can be avoided to a minimum. There is a problem with the Inert gas generator, which cannot function normally. These auxiliary aircraft often experience problems while in operation which results in delays in the loading and unloading process. when the ship was in a position to prepare for unloading for the first time at the port of Tuban with cargo, namely Pertamina. By using a qualitative descriptive method, where this method makes presentations by analyzing data in the form of findings obtained in the field with measuring instruments in the form of theories that are relevant to the problem under study, so that the cause of the problem is found.

## **THE INFLUENCE OF RECRUITMENT PROCESS AND CREW RECRUITMENT QUALITY BY INCREASING CREW REQUESTS FOR THE PERFORMANCE OF PT AWEIDHIA**

PT Aweidhia Crew Management is the manning agent for OLDENDORFF CARRIERS GmbH & Co. KG, from rating positions up to senior officer/engineer to captain. To get qualified and competent crew members, PT Aweidhia Crew Management uses the Seagull 6.0 test for crew selection which consists of competency tests for both deck and engine.

During the pandemic, it was very difficult for companies to find crew and do WFH for about 2 months. With the lack of urgent crew requests, this has caused employees to look for crew members on a whim due to the increased crew demands. The company only handles foreign ships operating in America, so crew members who are going to work are required to have an American visa. In order to maintain longterm sustainable relationships, 24 hour service provision, high quality, cost-effective and crew services that support and encourage safe and efficient ship operations while promoting

the competitiveness of its clients, company management must be able to understand the best way in managing employees who come from different backgrounds, expertise, and abilities. It is expected that employees can work according to the expertise and type of work provided. The recruitment process stage is a process that is carried out by each company to find crew members who are good and have good character in all areas on board. There are several recruitment processes as follows, namely cross checking CV, document checklist, CBT test, pre-interview and final interview.

**Tetyana Verrawati**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author: [tiatamaraaa@gmail.com](mailto:tiatamaraaa@gmail.com)

## **UTILIZING CULTURAL VALUES OF "FIVE HUMAN IMAGES OF TRANSPORTATION" : EFFORTS TO BUILD THE PROFESSIONAL CHARACTER OF STIP CADETS**

Character education is very important for everyone, as an effort to overcome the root of moral-social problems, such as dishonesty, incivility, violence, low work ethic, and others. Consequently, educators should always instill good character values to their students. This research is important to examines the relationship between the values of the organizational culture of the 'Five Human Images of Transportation' with the professional character building of STIP cadets, in shaping attitudes, leadership, mental, moral, and physical excellence. Using quantitative methods and Structural Equation Modeling (SEM), the research reveals a significant link between the organizational culture and the cadets' professional character. In conclusion, integrating the values of the 'Five Human Images of Transportation' can effectively shape cadets into professionals with good attitudes, leadership, personality, mentality, and morals in order to meet the needs of the shipping industry with quality and international standards.

**Inayaturobbany, Niken Sitalaksmi Widjaja, Achmad Bashori**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [inayaturobbany@gmail.com](mailto:inayaturobbany@gmail.com), [sitalaksmiw@gmail.com](mailto:sitalaksmiw@gmail.com), [bashoripij@gmail.com](mailto:bashoripij@gmail.com)

# REVEALING CHALLENGES AND OPPORTUNITIES IN SOUTHEAST ASIA'S MARITIME INDUSTRY

The maritime industry plays an important role in the economies of ASEAN countries. As the demand for skilled and competent maritime professionals increases, it is imperative to improve the quality and capacity of maritime education and training institutions in the region. The ASEAN region has great maritime potential as one of the strategic regions in global trade and connectivity.

Through the ASEAN Free Trade Area 2025, ASEAN member states have committed to realizing a free and open market with the aim of increasing economic competitiveness and providing benefits to the ASEAN community. This agreement opens up new opportunities for the region's maritime industry to grow and contribute to the regional and global economy

**Ahmad Wahid**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [wahidst1965@gmail.com](mailto:wahidst1965@gmail.com)

## THE INFLUENCE OF ASSIST TUG VESSEL OPERATING TIME AND SERVICE RATES PANDU – DELAY AGAINST PT. BATAM MANDIRI DELTA CRUISE

This research was conducted because most of the student's abilities in the Able Deck and Able Engine classes were still low in mastering English vocabulary, especially maritime English. Because of that case, this study aims to find out how to apply the Communicative Language Teaching (CLT) Approach in teaching Maritime English for Able Deck and Able Engine classes at STIP Jakarta in the class period June-August 2023. This study used classroom action research consisting of planning, action, observation, and reflection. Data was obtained from observation, reflection, interviews, documentation, and tests (pre-test and post-test).

In a relatively short learning period, it was found that the use of the Communicative Language Teaching (CLT) Approach in the first learning program period showed an increase in students' abilities that were slow in mastering English vocabulary. In the second program, several improvements were made during the learning process. In this second cycle, students' English

vocabulary increased using the Communicative Language Teaching (CLT) approach from both cycles because students were indirectly forced to speak and write English. This shows that the use of the Communicative Language Teaching (CLT) Approach can improve the vocabulary mastery of students in Able Deck and Able Engine STIP Jakarta classes. This research will continue until the end of August 2023.

**Aliya Izet Begovic Yahya and Nofita Sri Wijayanti Kusumawardani**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [begovicnsw@gmail.com](mailto:begovicnsw@gmail.com), [nofita.sriwijayanti33@gmail.com](mailto:nofita.sriwijayanti33@gmail.com)

# DESIGNING LCT COMPETENCES-INTEGRATED SYLLABUSES OF ENGLISH MARITIME COURSES FOR CADET LEVEL 2 IN PORT SHIPPING MANAGEMENT DEPARTMENT AT STIP JAKARTA

Aliya Izet Begovic Yahya | Nofita Sri Wijayanti Kusumawardani

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [begovicnsw@gmail.com](mailto:begovicnsw@gmail.com), [nofita.sriwijayanti33@gmail.com](mailto:nofita.sriwijayanti33@gmail.com)

ICT in this era has affected all aspects of life and has been widely used in all sectors of human life including education. Integrating ICT into learning is one of the implementations of ICT in the educational aspect. Therefore, one of the important competencies of an educator in improving the ability of sailor school students to support their professional abilities is the Maritime English course.

This study designed the integration of ICT in the Maritime English Course syllabus. This study aims to design a Maritime English course syllabus focused on level 2 cadets, based on integrated ICT competencies for the Port Shipping Management (KALK) Program at STIP Jakarta.

This study uses Design and Development Research (DDR) as a research design and qualitative research methods. The stages used by DDR in this study are Need Analysis; Design Preliminary Research, Evaluation, Revision, and Design of Syllabus Prototypes. This analysis incorporates ICT competencies proposed by UNESCO, Digital Media Descriptors from the European Profiling Grid (EPG), and other ICT-based theories.

The results of this study found that ICT competence is mostly integrated into Learning Outcomes, Teaching Methods, Learning Activities, and Assessments explicitly or implicitly. This study provides ICT integration procedures and designs a syllabus (in prototype form) in the Maritime English course for level 2 cadets in the Port Shipping Management (KALK) Program at STIP Jakarta. The resulting syllabus design is a product-oriented Content Based Syllabus.



# ACCIDENT RISK ASSESSMENT IN THE SHIPS CONSTRUCTION, REPAIR AND OPERATION

Winarno and Antoni Arif Priadi

BP3JP Jakarta and Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [winarno.ditlala@gmail.com](mailto:winarno.ditlala@gmail.com), [antoni.kemenhub@gmail.com](mailto:antoni.kemenhub@gmail.com)

There is always a potential delay in ship completion in the new ship construction, repair, and operation. Other than that, this issue might cause losses to the ship owner for ship owners because they cannot operate the ship according to the plan. Identifying issues with new shipbuilding is crucial to minimize delays and protect ship owners and shipyards. This study aims to identify the constraints in the stage of construction, repair, and ships accident while operating. The research methodology involved distributing questionnaires and conducting surveys in six locations: Medan, Jakarta, Surabaya, Makassar, Bitung, and Sorong.

The Likert formula was used to analyze questionnaires and determine risks. The results demonstrate that there is a significant risk associated with shipbuilding, repairs, and operations. Consequently, the owners should ensure their vessels to avoid huge losses. Rework at the sub-assembly/assembly stage due to the negligence of the craftsman is a risk or obstacle that often occurs when building a ship with a weight of 0.85. In the ship repair, the negligence of labour weighs 0.59. Whereas during the ship operation, the carelessness of the crew or captain has the heaviest weight, which is 0.67. Output of this study is producing best practice for ship's building.

Keywords: ship construction, ship repair, ship operation, risk assessment, commercial vessel, state vessel, shipyard.

## EXPLORING TRAINEE MARITIME PILOTS' PERCEPTIONS AND EXPECTATIONS OF NEGOTIATION OF MEANING STRATEGIES IN PILOTAGE OPERATIONS

The study aims to gain insights into the perceptions and expectations of trainee maritime pilots regarding the use of negotiation of meaning strategies in pilotage operations. By understanding their perspectives, valuable information can be obtained to enhance training programs and improve communication effectiveness during critical maritime operations. Additionally, the findings will contribute to the existing literature on the negotiation of meaning strategies in the maritime industry, providing a comprehensive understanding of their role in ensuring safe and efficient pilotage operations.

The study applied a qualitative data collection method, specifically conducting interviews with pre-experienced pilots and pilots with little to no experience. The participants were asked open-ended questions to explore their perspectives on meaning strategies in pilotage operations. The collected data was then analyzed using thematic analysis to identify common themes and patterns in the participants' responses. This approach allowed for a rich and detailed understanding of the various strategies employed by pilots and their significance in ensuring safe navigation and communication within the maritime industry.

**Purnama NF Lumban Batu, Wida Cahyaningrum, Sakilah Bewafa**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [nancy.lumbanbatu@gmail.com](mailto:nancy.lumbanbatu@gmail.com),

[widacahyaningrum2@gmail.com](mailto:widacahyaningrum2@gmail.com), [shaqiemaguire@gmail.com](mailto:shaqiemaguire@gmail.com)

## ACCIDENT RISK ASSESSMENT IN THE SHIPS CONSTRUCTION, REPAIR AND OPERATION

This study aims to determine the level and biggest cause of unsafe action and unsafe condition of the fleet owned by PT Pertamina International Shipping. The approach method used in this study uses a qualitative descriptive approach because the author prioritizes observing unsafe action and unsafe condition events and collects in-depth data to find factual information justifying circumstances, making evaluations, so that a clear picture is obtained.

**Isma Kurnia**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [ismakurnia307@gmail.com](mailto:ismakurnia307@gmail.com)

The data collection technique in this study used observation. Activities to search for data that can be used to provide a conclusion or diagnosis of the data are in the form of observations from the results of reporting unsafe actions and unsafe conditions from ships owned by PT Pertamina, then the authors draw conclusions from the results of the reporting and literature study. This is done by studying writings from various guidebooks or the SMS (Safety Management System) Manual belonging to PT Pertamina and the BST (Basic Safety Training) book.





# ACCIDENT RISK ASSESSMENT IN THE SHIPS CONSTRUCTION, REPAIR AND OPERATION

STCW Manila Amendments 2010 assert the importance of a cargo handling simulator (CHS) in maritime education. This tool plays a critical role in ensuring sufficient competence of students, trainees, and cadets to meet an increasingly intensive maritime industry digitalization. The newest iStow CHS version 2.5, the first Indonesia's cargo handling simulator, is equipped with all facilities, such as intact and damage stability and longitudinal strength calculations meeting all IMO safety criteria. In order to support the education process, this software applies a gaming philosophy, where real stowage planning tasks are emulated.

The role of instructors or trainers in the system embodies an authority to develop stowage planning scenarios, grading parameters, and management of participants' performance. The participants, students, trainees, or cadets, have an opportunity to familiarize themselves to enhance a deeper understanding of the impacts of cargo locations on board with the real-time stability, shear forces, bending moments, and restow indicators.

**Setyo Nugroho, Eko Budi Djatmiko, Heri Supomo, Murdjito** | Institut Teknologi Sepuluh Nopember  
Corresponding author : [snugroho@seatrans.its.ac.id](mailto:snugroho@seatrans.its.ac.id),  
[ebdjatmiko@oe.its.ac.id](mailto:ebdjatmiko@oe.its.ac.id), [hsupomo@na.its.ac.id](mailto:hsupomo@na.its.ac.id),  
[murdjito@oe.its.ac.id](mailto:murdjito@oe.its.ac.id)

## THE EFFECT OF CREW CHANGE ON SEA EMPLOYMENT AGREEMENT CONTRACT AT PT AMAS ISCINDO UTAMA

PT Amas Iscindo Utama is a shipping company in Indonesia and is a ship owner company. The Crewing Division has made a crew replacement plan every four months to eight months, the company will change the crew because the work contract has expired and the ship will look for crew change members to work on the ship. Due to the difficulty in recruiting replacement crew members, it ultimately resulted in the inaccuracy of the contract period for the replacement of crew members, which was made late and resulted in the crew contract period not being in accordance with the stipulation of the street vendors.

The implementation of crew changes that have not been optimal and the realization of the agreed Sea Employment Agreement (PKL) are not appropriate. The purpose of this study is to find out and analyze the effect of changing the crew on the Sea Employment Agreement with the crew on the ship. Research using a quantitative approach method by collecting data using a questionnaire and using SPSS version 25. The conclusion from the results of the study is that the Crew Changes (X) has an effect on the Sea Employment Agreement Contract (Y) there is a significant positive effect between variable X and variable Y.

**Mega Kurnia Putri, Larsen Barasa, Brenhard Mangatur Tampubolon** | Sekolah Tinggi Ilmu Pelayaran  
Corresponding author : [megakurnia.p18@gmail.com](mailto:megakurnia.p18@gmail.com), [larsenbarasa@gmail.com](mailto:larsenbarasa@gmail.com), [bmtampu@gmail.com](mailto:bmtampu@gmail.com)

# IMPLEMENTATION OF THE LEAN SIX SIGMA METHOD AS AN EFFORT TO REDUCE DEMURRAGE IN THE LOADING AND UNLOADING OF PT BUANA LINTAS LAUTAN TANKERS

Intan Puspita Dstarie and Vidya Selasdini

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [intandstrie@gmail.com](mailto:intandstrie@gmail.com), [siregarvidya@gmail.com](mailto:siregarvidya@gmail.com)

PT Buana Lintas Lautan (BULL) is one of the companies engaged in transporting cargo using tankers. In carrying out transportation activities, there are often delays in the loading and unloading process which will cause demurrage, namely the penalty that must be paid by the shipper to the shipowner for exceeding the agreed time limit in the ship contract. In this research, an analysis was conducted on how to identify waste that causes PT Bull tanker demurrage and determine the implementation of lean six sigma methods in optimizing PT BULL's tanker demurrage reduction efforts. The research method used is lean six sigma is integrating the concept of lean process (7 waste) in six sigma tools, namely DMAIC (Define, Measure, Analyze, Improve, and Control).

The results of the research showed that to analyze the cause of waste was done by measuring the level of defect in the demurrage expressed in DPMO, which was 4,029.25 and converted in sigma size with a result of 4.15. Furthermore, the analysis of the highest waste causes is in the type of waste defect, namely the delays preparation document category and looking for the root of the problem using fishbone diagrams and Failure Mode and Effect Analysis (FMEA) to obtain the amount of RPN, the results of the RPN value in the waste category of delays preparation document with the biggest cause being the late delivery of a draft bill of lading of 288 RPN.



# MARITIME EDUCATION IN BRUNEI - MINIMIZING TRAINEES DROPOUT FROM SEAFARER CAREER

Md. Iskandar Hj Jani

Institute of Brunei Technical Education

Corresponding author : [iskandarjani@ibte.edu.bn](mailto:iskandarjani@ibte.edu.bn)

Working at sea is not an easy job where the crew must work in a confined space, under extreme weather and temperature. Not only that, the difference between this profession from others is that the nature of seafaring careers often requires long periods away from home, family, and friends. There are also other common reasons why seafarers quit their jobs which also happen globally in maritime industries which will be further mention in these journals. Due to this uniqueness profession, many seafarers quit from their seafarer career which gave shipping industries a shortage of crew's member. The experiencing on the shortage of local crews in the shipping industries also occur in Brunei Darussalam. With that concern in mind, Brunei Maritime Academy as one of the training providers for seafarer in Brunei Darussalam must do something about it to give benefits not only to the Academy but also to our stakeholders. This research project is conducted mainly to see either these changes is essential or not to be implemented.

## EXPLORING TRAINEE MARITIME PILOTS' PERCEPTIONS AND EXPECTATIONS OF NEGOTIATION OF MEANING STRATEGIES IN PILOTAGE OPERATIONS

Ali Ulvi Sahin

University of Southampton Law School

Corresponding author : [aus1a19@soton.ac.uk](mailto:a.us1a19@soton.ac.uk)

IMO recently revised greenhouse emission reduction strategy. According to the revised strategy, member states just agreed to reach net-zero GHG emissions by or around 2050, and that call for reducing total GHG emissions by 20% and striving for 30% by 2030 and striving for 80% by 2040. Ambitious reduction goals require regulatory changes which can be seen in recent amendments to MARPOL Annex VI which came into force in January 2023. The first important Energy Efficiency Existing Ship Index (EEXI) which is a technical framework for energy-efficient vessel design.

EEXI may rest on shipowners for seaworthiness and due diligence obligations for the legal fitness of the vessel. The second amendment to MARPOL Annex VI is the Carbon Intensity Indicator (CII). The CII framework regulates operational carbon intensity of a vessel. Vessels will be given an annual carbon intensity ranking. A vessel ranked with lowest score can be banned from trading. In order to maintain the vessel's CII rating, the shipowner has given to right to refuse orders which might exceed the contractually agreed carbon intensity performance. CII regulation and its contractual application are likely to lead disputes and create uncertainty for the industry.

I will explain new regulations and how their impact will be on the shipping industry and focus on several regulatory and operational challenges. Results: It will be analyzed and described how to implement the new IMO environmental regulations in industry practices and how shipowners, charterers, and seafarers can comply with new regulations.

## CONTRIBUTION OF SOLAR ENERGY AT SHIP POWER SYSTEM IN REDUCING EMISSION AND FUEL CONSUMPTION

**Diah Zakiah**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author: [diahz2018@gmail.com](mailto:diahz2018@gmail.com)

International Maritime Organization has entered into force several regulations to lessen the carbon footprint of maritime transport. Energy Efficiency Existing Ship Index (EEXI) is utilized to sustain continuously increased energy efficiency and CII (Carbon Intensity Indicator) is utilized to measure carbon emissions and rating boundary of ships. Every ship must have strategies to reduce fossil fuel consumption to meet the minimum required carbon emissions. Solar energy can be a viable solution for reducing emissions and fuel consumption in ship power systems. Solar panels can be installed on the ship's deck or other suitable areas to generate electricity.

This electricity can be used for auxiliary systems such as lighting, ventilation, and onboard equipment, reducing the reliance on conventional fuel-powered generators. Solar energy can also be integrated into hybrid power systems, combining it with traditional fuel-powered engines or other renewable energy sources like wind power. This hybridization can optimize energy generation and reduce the consumption of fossil fuels. This paper will review several studies and applications of solar energy as part of ship power system, and analyze the contributions in supporting reduction of carbon emissions. Keyword: solar energy, carbon emission, fuel consumption, power system.

## CONTRIBUTION OF SOLAR ENERGY AT SHIP POWER SYSTEM IN REDUCING EMISSION AND FUEL CONSUMPTION

This study aims to describe the understanding of the flag-state administration, recognized organizations, and seafarers onboard regarding the implementation of the port State control for dealing with the impacts and challenges resulting from the results of inspections by port State control. The research relies on qualitative analysis. The primary data was obtained from personal experience and informal discussions with Port State Control Officers (PSCO) of Indonesia and related parties to this research. The secondary data was gathered from National regulations relating to the ratification of IMO conventions, the annual port State control reports in the Asia-Pacific region, publications of organization, sources of documentation, journal references, and various works and literature supporting this research's objectives.

The ultimate responsibility of keeping the ship in compliance with international standards lies with the shipowner, flag States, and other relevant industry players. The 'Black, Grey, and White List' is the driving force for the shipowners and flag State to encourage them to improve their performance. The goal of every flag State should be to appear high up on the list as possible. For example, the ship flags with a consistently low detention record by port State control will be on the White list. The flag state on the White list means meeting its obligation to register safe and seaworthy ships. It also puts the client at minimal risk of operational difficulties. It makes registering vessels with such flag status of interest to shipping associations to recommend that shipping companies or shipowners choose the appropriate flag.

**Ferro Hidayah**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [capt.ferrohidayah35@gmail.com](mailto:capt.ferrohidayah35@gmail.com)

## **CAUSES OF DAMAGE TO LOADING AND UNLOADING EQUIPMENT ON MV. DARYA MAJU**

The cargo hold, commonly known as the hold, is an essential component that must be present on a ship. The cargo hold, as implied by its nomenclature, serves as a designated area for the storage of loads. The loads have the potential to manifest in various forms. In order to optimize loading efficiency, it is imperative to appropriately allocate cargo hold based on the specific load requirements. The primary role of the palka is to ensure the protection of the load, as dictated by the loading principle. The palka must be able to protect the load until it can be transported safely to its destination.

On certain types of ships, the impact of cargo hold is also related to the discharge process, as in the case of the Cement Carrier. If the cargo hold designated for cement storage is not managed with utmost caution, it is highly probable that complications may arise during the process of unloading or loading. If there's trouble then the cargo can't be delivered on time and consequently affects the credibility of the company concerned. Therefore, it is important to take care of the cargo hold so that the performance and credibility of the company can continue to compete in terms of distribution of goods across the region.

**I Komang Hedi Pramana Adiputra, Dodik Widarbowo, Ryan Puby Sumarta, Theodorus Jehadul**

Politeknik Pelayaran Sorong

Corresponding author : [komanghedi@gmail.com](mailto:komanghedi@gmail.com), [dodikwidarbowo10@gmail.com](mailto:dodikwidarbowo10@gmail.com),  
[rps55982@gmail.com](mailto:rps55982@gmail.com), [englishdepartment23@gmail.com](mailto:englishdepartment23@gmail.com)



## DESIGN OF WATER DETECTION SYSTEM IN SHIP FUEL PIPELINES

The design of a water detection system in ship refueling pipes addresses the potential hazards arising from technological advancements. These advancements lead to various machines, electronic devices, and processes that, if not managed properly, result in adverse effects like work accidents, engine neglect, and environmental pollution. One critical aspect is refueling ships, where oversight can lead to issues. To tackle this, a water detection device is proposed for refueling pipes. This device monitors fuel passing through the pipe, identifying water presence in the mixture. The solution involves an Arduino Uno programmed with a color sensor and TDS sensor, displaying data on a 16 x 2 LCD screen. During testing, the device accurately detects water mixture status, which is displayed on the LCD. In safe situations, the solenoid valve remains open, while in alert states, the solenoid valve closes, and the temporary storage tank valve opens, controlled by an ultrasonic sensor measuring mixed fuel volume.

**Edi Kurniawan**

Politeknik Pelayaran Surabaya

Corresponding author : [edi.kurniawan@polttekpel-sby.ac.id](mailto:edi.kurniawan@polttekpel-sby.ac.id)

Keywords: Water Mixture, Sensor, Arduino, Solenoid Valve.

## BRIDGING SEAFARER'S ENGLISH LANGUAGE SKILLS GAP IN MARITIME INDUSTRY

To become seafarers who excel in the face of global competition, effective English language communication is a key to success in matters concerning security and crew management on board, particularly in roles of significant responsibility, such as Captain and Chief Engineer. To demonstrate English language proficiency, seafarers could demonstrate their qualifications in two ways: theoretical mastery usually demonstrated through certification, and practical language application commonly demonstrated through interviews during the job recruitment process. However, seafarers often struggle in the latter, which hurts their chances in the labor market. Importantly, failure in these interviews does not necessarily indicate a lack of skills among the seafarers; instead, it reflects a deficiency in practical English communication abilities. Thus, the challenge lies in effectively teaching applied English language to seafarers. This paper explores the underlying causes of the seafarer's English language skills gap in the maritime industry, particularly where English is not the seafarers' first language. Using in-depth interviews with stakeholders within the shipping industry, the study found that English language training institutions' syllabus should cover a broad range of theoretical and practical skills that aligns fundamental language skills with the seafarers' deck or engine specializations.

**Putri Eva Mayangsari**

Corresponding author : [putrievamayangsari@gmail.com](mailto:putrievamayangsari@gmail.com)

# SHARING EXPERIENCES IN DEVELOPING CURRICULUM IN OCEAN LITERACY WITH SMES: THE OCEAN FORECAST SYSTEM (OFS) CASE STUDY

For instructional designers, creating a curriculum in the ocean literacy course posed a number of challenges and opportunities. Setting and accomplishing learning goals utilizing intriguing content and accessible materials, creating successful evaluations as well as collaborating with Subject Matter Experts (SMEs), poses multiple challenges. This, however, opens the door to integrated ocean literacy instruction, merging courses and implementing new technology for increased learning.

This abstract will provide experiences in designing the curriculum for ocean literacy, in particular for the Ocean Forecast System (OFS) course, conducted by the Ocean Teacher Global Academy (OTGA) Indonesia STC which provided participants with a valuable learning experience, the knowledge, skills, and experience needed to use OFS outputs and enhance their understanding of ocean models. The course used optimal instructional design practices and a variety of resources and methods to engage participants and elevate their learning experience.

Developing a curriculum and training development plan for the OFS course necessitated collaboration with SMEs as well as the application of best practices in instructional design. The lessons learned from this experience, such as the importance of providing clear and concise learning outcomes, designing assessments that align with the learning outcomes, and incorporating real-world scenarios to enhance the learning experience, can be applied to future curriculum design processes. Future recommendations include looking into additional resources and techniques to improve the OFS curriculum and working with SMEs to ensure that course content is accurate and up to date.

**Rr. Yuliana Purwanti and Adityawarman**

The Agency for Meteorology, Climatology and Geophysics (BMKG)

Corresponding author: [rora.yuliana@bmkg.go.id](mailto:rora.yuliana@bmkg.go.id), [adityawarman@bmkg.go.id](mailto:adityawarman@bmkg.go.id)

## A CASE STUDY IN EFFECTIVELY BRIDGING THE KNOWLEDGE GAP IN PROVIDING MARINE WEATHER INFORMATION THROUGH OCEAN MODELLING

An ocean model describes a pattern of interaction between an atmosphere and land by utilizing an ocean numerical mathematical equation. This model can be applied to a specific region/ area, such as Maritime Continent. Configuring the ocean model for this region needs to determine a specific domain, a type of equation and numerical methods, a parameterization of subgrid-scale processes, as well as forcing data used to drive the model. This effort is conducted to increase the accuracy of weather forecasting services, especially in providing marine weather forecasting. BMKG in collaboration with Ocean Teacher Global Academy (OTGA) conduct an online training course regarding Ocean Model Configuration for OFS Implementation.

This training bridges the knowledge gap regarding ocean modelling for marine warning and forecasting. The ocean numerical modelling system that is discussed in this training has been developed by BMKG, it is called BMKG-OFS. Besides that, participants learn about how to process and visualize a mate-ocean data set from BMKG-OFS. This training course is addressed to meteorologists, oceanographers, researchers, marine data analysts, marine forecasters, and people with daily responsibility for ocean/ coastal modelling. To identify the effectiveness of this bridging, we comprehensively evaluate its implementation generally and the trainer's performance. Research data is collected through a survey distributed to participants. Subsequently, data are processed and analyzed by using a simple statistical method.

**Madona**

The Agency for Meteorology, Climatology and Geophysics (BMKG)

Corresponding author : [madona@bmkgo.id](mailto:madona@bmkgo.id)

## **CYBER RISKS ON AUTONOMOUS SHIPS IN UK MARINE INSURANCE LAW**

The maritime industry has become increasingly reliant on internet use, making it more vulnerable to cyber-attacks due to the interconnectivity of ports, shipping companies, and vessels. With the innovation of autonomous vessels and the elimination of the human factor onboard, the damages could be expected to be catastrophic. Technological advancements, in this century, allow producing autonomous ships with varying degrees of automation.

The term 'autonomous' refers to a ship's ability to carry out a series of predetermined tasks with little or no assistance from the bridge crew. Although this does not necessarily imply that there are no humans on board, the number of people can be changed depending on the automation level of the vessel.

Autonomous ships provide several advantages, including higher productivity, lower operating costs, and improved safety, by integrating advanced technology like artificial intelligence (AI) and yet, these advantages could also come with disadvantages, including cyber risks. These risks could result in loss of control of the ship, navigation errors, or even collisions with other ships. Malware and ransomware attacks, phishing emails, operational IT risks, and insider threats are just some of the potential cyber risks that can jeopardise the safety of autonomous ships.

Therefore, this research aims to explore some cyber risks associated with autonomous ships and the current legal framework to mitigate these risks in the UK.

Key Words: autonomous ships, cyber risks, marine insurance law

---

**Fatima Ozcan**

University of Southampton

Corresponding author : [fo1u20@soton.ac.uk](mailto:fo1u20@soton.ac.uk)





# CONTROLLER EQUIPMENT ON THE ANDROID APPLICATION ON VESSEL

Modern technology is becoming more sophisticated and has significantly altered numerous industries, including the maritime sector. One of the technological advances in the shipping sector is the usage of Android technology. On a variety of Android-powered devices, the Android application system is available. Based on the Linux operating system, it is a mobile phone operating system that enables the functionality of electronic devices. Android offers developers an open-source platform on which create mobile apps. The Android operating system is used in this project as a crane oil pump control system aboard ships. The oil crane is typically filled manually, requiring the operator to climb up onto the crane and raise the oil drum. In order to fill crane oil on modern ships, an oil-filling pump system is also used. From that experience, a system for using Android to monitor and control the loading of oil cranes is suggested, with the goal of facilitating remote operation.

Hardware and software designs are the two subcategories of system design. The hardware design consists of several devices, including crane oil tanks, ultrasonic sensor, an ESP8266 microcontroller, and DC pump. Modular programming is used in the software design to create an application for tracking system crane oil data that can be shown on Android devices. As long as it is connected to the internet network, the user able to control the equipment on board using an Android application with an understandable display.

**Henna Nurdiansari, Ananda Maulana**

Politeknik Pelayaran Surabaya

Corresponding author: [henna.nurdiansari@poltekpel-sby.ac.id](mailto:henna.nurdiansari@poltekpel-sby.ac.id).

[anandamaulana2612@gmail.com](mailto:anandamaulana2612@gmail.com)

Keywords: Android, Equipment on board controller, Firebase, and Oil pump on board.

## OPTIMIZATION OF LINE COOLDOWN OPERATIONS FOR SHIP READINESS IN DISCHARGING AND LOADING ON LNG EKAPUTRA 1

The use of Liquefied Natural Gas (LNG) as an alternative to fuel in the industrial and household sectors has increased rapidly along with the development of science and technology. LNG has an energy density equivalent to conventional fuel but with a lower environmental impact. Even so, the potential hazards of LNG vapor and low temperatures need to be aware of. Nonetheless, LNG has the advantage, such as the use of evaporation as a ship fuel or boil-off gas (BOG).

The process of loading LNG to the ship involves several procedures, including cooling pipelines (line cooldown). Cooling pipelines before unloading LNG aims to avoid thermal stress that can damage the pipe. Planning and supervision of pipeline cooling operations become essential to achieve optimal temperature in the pipeline and prevent excessive heel use. Qualitative descriptive research methods are used by collecting data from library studies, documentation, observation, and interviews. In addressing the problem of cooling pipe, optimization of line cooldown operation and heel setting as fuel ship is the focus. The resulting conclusions involve the crew's understanding of valve function, the duration of the implementation of pipe cooling, the setting of the BOG amount, and the delivery of heel by the Charterer party to the ship.

This study resulted in effective and efficient guidance in carrying out line cooldown operations and heel settings. With a better understanding of these factors, ships can optimally run the pipe cooling process, optimize the use of heel, and improve the efficiency of LNG use as a ship's fuel.

**Muhammad Ardhana Widyapratama, Meilinasari Nurhasanah Hutgaoll, Didik Sulisty Kurniawan**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [ardhanpra123@gmail.com](mailto:ardhanpra123@gmail.com), [leena.xli.mn@gmail.com](mailto:leena.xli.mn@gmail.com)

## PREVENTION OF CARGO WATER INGRESS SENSOR ERROR

The cargo damage on board the vessel is detrimental; it affects the company negatively. Cargo damage on board the vessel can occur due to multiple reasons, with one common cause being the failure of the cargo water ingress sensor. This article is based on the writer's experience on MV.HL PRIDE while on-board. The writer reports that the failure of the cargo water ingress system sensor was due to both human and machine errors. Human error arises when some crew members fail to understand the importance and simplicity of the cargo water ingress sensor, and responsible officers are unaware of its proper use, resulting in mistakes when the sensor is active. Machine error occurs due to the presence of small holes in the sensor cover, allowing ore cargo to infiltrate it. Reorganizing the crew recruitment process and educating the crew on-board will help reduce the probability of cargo water ingress sensor errors. Additionally, creating a fabric cover for the sensor can prevent ore cargo from infiltrating it.

**Muhammad iqbal ea and Ferro Hidayah**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [muhammadiqbalarisna@gmail.com](mailto:muhammadiqbalarisna@gmail.com), [capt.ferrohidayah35@gmail.com](mailto:capt.ferrohidayah35@gmail.com)

## DESIGN AN IMPLEMENTATION SMART HYDROPONIC SYSTEM USING MICROCONTROLLER

Vegetables have a durability that is not too long. To get fresh vegetables requires planting vegetables on the ship without the need for soil media. Hydroponics is a method of cultivating plants without using soil media. For planting media, a substitute for soil media in hydroponics is to use water media or materials that do not have nutrients, such as husks, rockwool, coconut coir gravel. Deep Flow Technique (DFT) is a hydroponic method that applies a stagnant water system. This study aims to create a smart hydroponic system based on a microcontroller.

**Aninda Intan Luvi Wulandari**

Politeknik Pelayaran Surabaya

Corresponding author : [intanlutvig8@gmail.com](mailto:intanlutvig8@gmail.com)

The automatic control of watering hydroponic mustard plants is using Arduino Uno and Water sensors, DHT11 sensors, and Android smartphone-based pH sensors. Where this system start detect the height of the nutrient solution that is in the beds using a water sensor, to detect temperature and humidity using DHT11, and determine the degree of acidity with a pH sensor. The data obtained from the sensor, displayed on the LCD then Arduino uno send the data to an Android smartphone via NodeMCU wifi in the form of altitude values, acidity and alkalinity values of nutrient solutions and humidity temperatures the same as those displayed on the LCD. With this automatic system device, it can help make it easier for every crew member to get quality fresh vegetables on board.

# DESIGN OF A CONDITION MONITORING SYSTEM FOR OUTSEAL NANO V.4 PLC-BASED GENERATORS

**Ganesya Feby**

Politeknik Pelayaran Surabaya

Corresponding author : [ganesyafeby14@gmail.com](mailto:ganesyafeby14@gmail.com)

Many electronic devices are the result of current technological advances. However, technological advances will also cause side effects that can be detrimental if not handled properly and quickly. Hazards that may arise such as work accidents on ships, lack of maintenance on engines such as generators that rarely do maintenance will weaken generator performance and it will be dangerous if the ship experiences a blackout. Before damage to the generator occurs, a tool is needed to monitor the condition of the generator, so a condition monitoring system is designed on the generator using the ZMPT101b voltage sensor and the Sw-420 vibration sensor and PLC OUTSEAL Nano V.4 as a controller and assisted by Arduino Nano to process data in the form of waves. The PLC will process the data sent by the sensor and the processed data will be displayed on the LCD in the form of a value, a buzzer as an alarm that the state of the generator is not good. In this study researchers used the experimental method. This experimental method was chosen because the researcher wanted to experiment in order to produce a tool for monitoring the condition of the generator, then the research report is expected to be useful for readers. The results showed that the device for detecting vibration and voltage found an alarm so that the generator had to get maintenance.

## DESIGN AN IMPLEMENTATION TOWER CRANE CONTROLLER USING MICROCONTROLLER

**Uli Arta Sitanggang**

Politeknik Pelayaran Surabaya

Corresponding author : [uliarthasitanggang11@gmail.com](mailto:uliarthasitanggang11@gmail.com)

Cranes are devices that are used in almost all industries, such as in workshops, ports, warehouses and others. In general, crane control is considered less effective and efficient because it still requires operators to walk according to the direction of the load. This is because the push button which functions as a controller is still connected by cable to the slewing device and the hoist crane. The purpose of making this final project is to design and build an android-based crane control system. This motor speed control makes it easy for users to control the crane carefully because when the crane swings too fast it will endanger people around the place. The crane is driven using 2 dc motors,

1 as driving crane slewing and dc motor 2 as crane hoist. Device control by android uses wifi serial communication. This system uses an Arduino microcontroller with Wemos D1 Mini and is built and designed on a miniature crane. Device control can be controlled at a maximum distance of 20 m. Results Experiments prove that crane control can be controlled via Android and is more effective and efficient than the push button mechanism. Therefore the use of cables can be replaced with wireless (wifi) so that users can maintain a safe distance from the load to be moved.

Keywords: Android, Arduino Uno, DC Motor,Wifi

# PROTOTYPE DESIGN OF SHIP BRIDGE ACCESS SECURITY SYSTEM USING SMARTCARD

**Athi' Mufidhah**

Politeknik Pelayaran Surabaya

Corresponding author : [athimufidhah@gmail.com](mailto:athimufidhah@gmail.com)

The bridge is one of the most vital rooms on a ship, functioning as the ship's command room where the ship's steering wheel and navigation equipment are placed to determine the ship's position. This tool is designed to increase security because it can also identify anyone who opens to enter the bridge room, this is because with this security system only someone who has authority can enter the bridge room, so that security and privacy equipment or machines are maintained. In this research, the development research method, namely Research & development (R&D), is used to produce certain products and test the effectiveness of these products. In this security system an Arduino-based RFID (Radio Frequency Identification) sensor will be installed which is used as an automatic system for accessing the panel. Through the design and implementation of this room access system, an evaluation of the component-based electric lock working system is carried out as well as the optimal distance and position of the RFID reading when accessing the room. From the test results, RFID can be recognized by the RFID reader in two different positions with an optimal distance of 2cm. The results of this study can be concluded that RFID technology can be used as a personal identification system for room access systems.

# FUEL CHARACTERISTICS IDENTIFICATION AFFECTING THE COMBUSTION PROCESS ON THE MAIN ENGINE ON THE SHIP USING MFO (MARINE FUEL OIL)

**Yuni Mariah and Navi Almuzanil**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [yunimariah71@gmail.com](mailto:yunimariah71@gmail.com)

Fuel is an important factor in the smooth operation of ships. MFO (Marine Fuel Oil) fuel is widely used as a main propulsion engine fuel because the price is cheaper compared to other fuel oils. In the combustion process, to produce high heat of combustion so as to produce maximum efficiency, one must know the characteristics of the fuel such as physical properties of the fuel and the elements contained therein. The properties of the fuel include specific gravity, viscosity, sulfur content, carbon content C, water content, freezing point, flash point, and ash content. The purpose of this study is to identify the characteristics of MFO (Marine Fuel Oil) fuel and its effect on combustion in the main propulsion engine. The research was carried out by studying the literature and collecting data on objects through observation, interviews and using documentation taking pictures directly on the ship. The results of this study indicate By knowing the important parts of the fuel characteristics, the quality of the fuel can be known to produce a perfect main engine combustion process and produce optimal efficiency.

Keywords: fuel characteristics, complete combustion, usability, MFO (Marine Fuel Oil)

# EFFORTS TO PREVENT CORROSION ON SHIP BODY STEEL PLATE USING CATHODE PROTECTION WITH ZINC ANODE METHOD AS SACRIFICIAL ANODA

**Yuni Mariah**

Sekolah Tinggi Ilmu Pelayaran

Corresponding author : [yunimariah71@gmail.com](mailto:yunimariah71@gmail.com)

One of the biggest sources of damage to ships is caused by seawater corrosion. The hull plates are the first areas exposed to seawater. In the underwater area of the ship's hull or the area above the water is susceptible to corrosion. One way to prevent corrosion on steel ships is to use cathode protection using the zinc anode method as a sacrificial anode based on electrochemical principles, in which the oxidation reaction in the galvanic cell is concentrated at the anode which can suppress the rate of cathode corrosion in the same cell. The purpose of this study was to determine the types of corrosion on the ship hull and how to prevent this corrosion using cathode protection with zinc as the anode. The research was carried out by studying literature and collecting data on objects through observation, interviews and using documentation of taking pictures directly on ships that were docked at the shipyard. The results showed that prevention of ship corrosion with the cathode protection method using zinc anode material is useful for protecting the ship's hull which is very susceptible to various types of corrosion. With this method, the ship's steel used as the cathode will be protected from corrosion, while the zinc material as the sacrificial anode will experience corrosion due to oxidation reactions.

Keywords: ship body steel plate, Corrosion prevention, Cathode Protection, Zinc Anode



# CONFERENCE VENUE



**MAIN VENUE:** LOTUS SKY BALLROOM 1 DAN 2  
**BREAKOUT ROOM:** Lavender Room 1, 2, 3, 4  
Lily Room 1, 2, 3, 4  
**HOLDING ROOM:** Aster Room

GRAND MERCURE JAKARTA KEMAYORAN  
JL. H. BENYAMIN SUEB KAV B-6,  
SUPER BLOK MEGA KEMAYORAN,  
KOTA BARU BANDAR KEMAYORAN,  
CENTRAL JAKARTA 10610

+62 21 2260 1111

+62 21 2260 2222

Hg896-RE@accor.com

www.all.accor.com/9896

**SPONSORED  
BY**

*Bank*  **BTN**

 **BNI**

Melayani Negeri, Kebanggaan Bangsa



**BANK BRI**



# COMETSEA

2023

CONFERENCE  
IN MARITIME EDUCATION AND TRAINING  
IN SOUTHEAST ASIA 2023