Building resistance and sustainability



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Foreword

Dear members,

As we look forward to 2022, with the fresh challenges and new opportunities it will bring, we cannot help but embrace the resilience and agility of the shipping industry in meeting its commitments in furthering the growth of global trade at a time of major uncertainty driven by the COVID-19 pandemic.

The important role played by our seafarers in this process cannot be over-emphasised. As COVID-19 moves into an endemic stage in most the of the world, it's important that crew change and eventually shore leave etc. normalises around the world. A prerequisite for this



to happen is, of course, the fact that seafarers are fully vaccinated. The hard work carried out by the SSA-led SEAVAX initiatives will help this development as health and well-being of our seafarers continues at the head of our lists of priorities.

But if there is one silver lining that has emerged from the past two years of pandemic-led uncertainty, then it has been the acceleration in the drive by the industry towards a more digitalised future. Indeed, the work undertaken by the Jurong Port Cement Terminal in embracing innovation and digitalisation has been behind its success in handling over 100 million tons of cement over the past 25 years, and you can read more about this exciting journey in this edition of WAVES.

On the important issue of digitalisation, the SSA has spearheaded its Digital Vision & Sustainability Programme with the sole objective of helping SMEs in the maritime and shipping industry develop and execute bespoke digitalisation blueprints while setting up the cornerstones for them to build business resilience and sustainability in the fast-changing global business environment driven by technology. Sreekumar Pillai, Senior Manager at Pacific Radiance, an owner and operator of offshore vessels as well as a provider of offshore support services, talks about his company's journey in the drive for efficient digitalisation.

2022 and the Year of the Tiger will almost certainly be a year of change and opportunity and we look forward to working with you, our valuable members, in grasping these opportunities. Keep safe and together with my fellow SSA Council members, I look forward to meeting up with many of you in person this year.

René Piil Pedersen SSA Vice President & Honorary Secretary, General Affairs Committee Chairman

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Notice to all SSA members - stay in contact

As you are aware, the SSA Secretariat often sends out email circulars to inform you, our members, of SSA's events and the latest developments in the industry. We have noticed that some of you may not be receiving the email circulars sent out by the SSA Secretariat – as your office email server may have classified our emails as spam.

To resolve such issues, kindly include SSA's domain name ssa.org.sg into your email whitelist/safelist so that you remain in our communication channel. Thank you for your kind attention.

Event Calendar

February

sun	mon	tue	wed	thu	fri	sat	
		1	2	3	4	5	
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28						

February 2022

/02		SSA Webinar – Cybersecurity OT Assessment
/02	•	PIER71 — Maritime Innovation Workshop
/02		PIER71 — Maritime Innovation Workshop
/02		SSA Workshop #1 – Operating a Sustainable Shipping Operations
/02		Own Your Future Campaign (SMF marketing campaign, details TBC)
/02		SMF YES Club Event

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1	3	14	15	16	17	18	19	
2	0	21	22	23	24	25	26	
2	7	28	29	30	31			

March 2022

24/03 XX/0

SSA Tech Talk Thursday Q1 - Engaging Internal Stakeholders for Smooth
Transformation
SSA Educational Talk – Transformation of Maritime Operations
Launch of the refreshed MSC Career Portal

April								
sun	mon	tue	wed	thu	fri	sat		
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3	4	5	6	7	8	9		
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24	25	26	27	28	29	30		

April 2022

04-0 05/0

2/04	Singapore Maritime Week
5/0 4	Singapore Marturile Week
4	PIER71 — MarineTech Conference
	Tech and Demo Day - Wearable Technology in Shipping
4	Maritime Manpower Forum
4	MSC Career Portal Roadshow
4	MSC Maritime Summit Case Challenge Grand Finals
4	Nor-Shipping

Jurong Port Cement Terminal celebrates 25 years of operations with milestone of handling 100 million tons of cement

Jurong Port (JP) Cement Terminal is celebrating its 25-year anniversary of operations. The dedicated cement terminal opened in December 1996 and has since transformed to become the world's largest common-user cement terminal handling more than 80% of Singapore's bulk cement imports.

The terminal, originally sited on a compact 2.3-hectare site, housed six cement traders – United Cement, Asia Cement (Singapore), Singapore Cement Manufacturing, Pan Malaysia Cement Works, Jurong Cement, and Ssangyong Cement (Singapore) and has since grown to include YTL Cement Singapore, Ergo Corporation and Raffles Cement. Anticipating a potential growth in demand for cement in Singapore, JP commenced operations of Cement Terminal 2 in 2013 to expand its plot size to 5.3-hectares and increase handling capacity of its existing cement facility by 50%. In 2018, the old T1 had been upgraded to provide an additional 20% of unloading capacity, while maintaining its footprint of 5.3 hectares.

Since the official inauguration, Jurong Port Cement Terminal has set new benchmarks in terminal architecture. Boasting three dedicated deep-water berths, the cement berths are equipped with a comprehensive network of conveyors, including common and dedicated unloaders, to ensure the non-pollutive and efficient handling of cement. With five screw-type unloaders capable of operating at a



maximum rated capacity of up to 1000 tonnes per hour, bulk cement is speedily discharged from vessels directly to customers' storage facilities. This translates into faster vessel turnaround, an increase in shipment deliveries, and cost savings on stevedoring charges. Two cement companies were brought into the combined facility, bringing the total number of cement silos to 19 currently.

Chief Technical Officer / Chief Sustainability Officer Tan Wee Meng has been instrumental in the development of Jurong Port's Cement Terminals over the past 15 years. "The ability to compact the high handling capacity of the Cement Terminals into a very small plot of land, and then to operate and maintain it, is a demonstration of the tenacity and



commitment of the team. The customers' strong support for JP and the trust in JP are the key motivations for the JP team to deliver," he said.

He added that JP's cement terminals today have been carefully planned to address Singapore's evolving cement needs. The terminals have the capability to cater to an annual handling capacity of over 7.5 million tonnes and come fitted out with cutting-edge infrastructure and equipment to ensure a safe, efficient, and environmentally friendly discharge of cement.

"Twenty-five years is a significant milestone and this follows the successful achievement of handling 100 million tons of cement that took place earlier in October 2021," said Doraisingam Sivakumar, General Manager. "It is testament to the many generations of bulk cargo stevedores, staff, and valued customers who have helped shape the business today. As we now look to the future, and many more years of operations, we are committed to maintaining our position as a leading port of call for cement to drive the local construction industry," he added. JP's cement terminals today have been carefully planned to address Singapore's evolving cement needs

Jurong Port has been operating since 1965, serving Singapore as the main gateway to the island state for general, bulk, and containerised cargoes. It is located at the heart of the Jurong industrial cluster and is close to Jurong Island. Established as an industrial port, JP has been providing storage and cargo handling terminal facilities to port users and carriers ever since. In 2015, the port embarked on a transformation journey on several fronts – all geared to achieving its vision of becoming a Next Generation Multipurpose Port (NGMPP). By NGMPP, we mean a port that stays ahead of the curve, adapts to evolving customer needs and megatrends through portcentric ecosystem development, while fulfilling its main mission of being an efficient gateway and reinforcing Singapore as a maritime hub.

Jurong Port has been operating since 1965, serving Singapore as the main gateway to the island state for general, bulk, and containerised cargoes.

Innovation and embracing digitalisation are important additions to the port but developments put in place are there to enhance the cargo handling operations and to strengthen important areas such as operational safety. One important improvement was the introduction of semiautomation of the cement unloader. By developing algorithms to enable automatic operation of the unloader, aided by deployment of sensors and cameras, JP eliminated the need for an operator's physical presence on the vessel deck, which is a challenging work environment. With the introduction of semi-automation and remote operation



from an air-conditioned cabin, JP has significantly improved the safety and health of operators and at the same time, reduced the dependency on manpower for effective redeployment.

Cement trimming operation involves a laborious and manual process to clean the vessel hull surface, and operators are often exposed to falling cement dust during cement discharging. To address this issue, the team developed a multi-functional wheel loader to automate and mechanize the cleaning of vessel walls, using motion sensor brush head and 'quick change' bucket attachment to collect fallen cement. Through automation and mechanization, the multi-functional wheel loader significantly reduces the need for manpower on the ground, which leads to a reduction of more than 60% cleaning stevedores and wheel loader operators being exposed to cement dust and other risks during operations. Jurong Port's 'Multi-Functional Wheel Loader' solution was featured as one of the best Workplace Safety and Health (WSH) practices and innovations at the WSH Awards 2021.

Desmond Ong, Vice President of Projects & Technology, told WAVES last year, for JP to effect digital transformation in the port, it needs to establish itself as an operator rather than as a landlord port model. With an in-depth understanding of the port's cargo handling operation and supply chain through its involvement in developing port-centric ecosystems, it has mapped out an overarching digital transformation roadmap that will lead the port towards NGMPP in the next five years and beyond.

And what of the future? JP will continue to strive for greater efficiency and productivity while ensuring it is a green and sustainable port. It will continue to collaborate with other stakeholders to learn from the industry and deepen its knowledge, keeping ahead and abreast of technology trends. It sees as imperative, efforts to develop diverse and integrated supply chains, that it builds a resilient workforce and harnesses new digital capabilities. Jurong Port is on an exciting transformation journey with the myriad of opportunities lying ahead.





SMART VESSEL MANAGEMENT SYSTEM





VISWA Water Testing

IMO BALLAST WATER MANAGEMENT CONVENTION 2004

BALLAST WATER Sampling and Testing to D-2 Standard

US VESSEL GENERAL PERMIT (VGP) 2013

BALLAST WATER Sampling and Testing (UV and chemical treatment systems) BILGE WATER Sampling and Testing GRAY WATER Sampling and Testing BLACK WATER Sampling and Testing SCRUBBER WASH WATER Sampling and Testing

IMO MEPC.184 (59)

SCRUBBER WASHWATER Sampling and Testing

MARINE LABOUR CONVENTION 2006

POTABLE WATER Sampling and Testing to WHO Guidelines to Ship Sanitation POTABLE WATER Sampling and Testing to any Flag State regulation POTABLE WATER Sampling and Testing for Legionella bacteria

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Novel data and analytics for increased safety, loss prevention and decarbonisation of the maritime industry

Bigger size vessels, adoption of new technologies and new fuels as well as reduced numbers of the crew onboard have led to an increased volume of claims and risks for P&I and H&M Clubs as well as headaches for ship owners and operators.



Figure 1 - WeavAir platform that monitors incidents, safety and emission patterns

According to the International Union of Marine Insurance Stats Report 2021, maritime incidents have been increasing dramatically and this had a serious impact with global marine insurance premiums increasing over past years to over \$30 billion in 2020, while also contributing to increasing the impacts on the environment and the human health. The current industry practice for insurance claims management and loss prevention relies on data collection via phone calls and emails, while data management is still heavily dependent on spreadsheets, which results in processes that are time-consuming. Furthermore, the unstructured data does not lend itself easily to automated analysis and predictive modelling. This leaves many ship owners and managers as well as insurers with limited insights into what can be done to reduce incidents and prevent losses.

Decarbonising operations

Another critical application for more optimised data collection is tracking carbon and other GHG emissions across the full supply chain. Currently, the industry relies on models to calculate emissions based on factors such as fleet size, weight, fuel consumption and distance travelled.

TECHNOLOGY

However, this calculation is only an estimate and often does not take into account changes in factors such as operating parameters of the engine, fuel type, the condition of the vessel and energy efficiency updates. Furthermore, it is often very difficult to calculate the emissions along the full value chain across the external service providers and subcontractors. Data collection is difficult due to the lack of data sharing and the lack of digitised and standardised data, which makes the data cleansing and aggregation very time-consuming.

The industry is keen on a better solution to streamline data collection and decision support. However, many existing products on the market have limitations with respect to the efficiency of data collection and lack of options for anonymised data-sharing and industry benchmarking, which limit the potential analysis and actionable insights that can be extracted.

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Could WeavAir Solution be the gamechanger that helps usher in the new era of data-informed decisions on reducing risks and decarbonising the fleets?

Challenges of data collection

The key barrier to ensuring the effectiveness of loss prevention protocols is access to relevant and accurate data. Every day, the vessels as well as the crew and machinery encounter sets of operational patterns. Many of these patterns are predictive of incidents, but the information about them is very rarely collected, analysed and shared unless they contributed to a costly incident. However, it is critical that such information is shared to prevent the re-occurrence and prevent future incidents. The main technical hurdle is to enable efficient but accurate data collection and to standardise the data collection across many shipping companies, which use diverse systems and standards. The current processes for data collection rely on many manual steps, which are often time-consuming, impacting the data quality and limiting the ability to predict and prevent risks.

By signing up for "WeavAir Derisked" Solution ecosystem, ship owners, managers and insurers will gain access to more efficient claims management and loss prevention, reducing operational costs.

"Existing approaches are reactive. There is often not enough data to establish cause-and-effect relationships, improve operating procedures and implement new solutions to reduce risks. There is a need for anonymised data collection systems that are accurate, interoperable and yet efficient, asking the right questions and speaking the same language as the crew," explained Natalia Mykhaylova, CEO and Co-Founder of WeavAir, a company based in Singapore, Canada and South Korea, that has been working on a new method for monitoring and reducing incident risks and emissions for maritime and other sectors.

With respect to carbon emission assessment, it is also critical to ensure accurate and reliable data collection. The amount and composition of vessel emissions can vary in response to differences in ship management, operating processes and other factors. When multiple parties are involved, it can be very complicated to quantify, benchmark and achieve the target ESG objectives. Furthermore, emission calculation models often do not take into account the specifics of the ships engine operations and do not provide an accurate gauge of the impacts of new decarbonisation systems. The diversity of data collection standards across ship owners, insurers and classification societies, as well as difficulties in accessing data for benchmarking, are some



Figure 2 - WeavAir platform providing alerts and decision support for reducing incidents emissions

of the reasons why WeavAir sees new data collection, aggregation and modelling systems as a new way forward in helping the industry achieve safety and sustainability objectives.

WeavAir loss-prevention solution

Recognising the complexity of the industry and the lack of a shared standard for data collection, WeavAir is building a novel interoperable data collection system that allows for automation of some aspects of the process while making it easy for the shipping companies and the insurance industry to use. This required WeavAir to start the development of a data ontology that makes it possible to aggregate data across a range of standards being used by ship owners and managers. Once the data is aggregated, WeavAir applies proprietary models and pattern recognition processes that enable better risk prevention decisions. In the case of loss prevention, for example, such a system can be used to highlight some of the factors and procedures that have a high chance of impacting the health and safety of the crew.

The aspiration of WeavAir is to provide ship owners, managers and insurers with a more efficient claims management and loss prevention system. A user-friendly data collection system ensures the right data quality, granularity and objectiveness for easy benchmarking.

TECHNOLOGY

A digital checklist is one of the components of this system that enables relevant data collection, aggregation, and standardisation across different insurance clubs. organisation standard operating procedures (SOPs) as well as Vessel Management Software from ship classification organisations. Meanwhile, the anonymisation process and extended data protection ensure high privacy that complies with the GDPR.



Figure 3 - WeavAir platform emissions monitoring sensors and software

WeavAir then uses the data to recreate the environment that has led to the incident and build predictive models and algorithms for loss prevention in response to different types of incidents (crew, fire, navigation, cargo etc.) across different types of vessel categories (size, type etc.) and underlying causes (speed, engine power etc.).The system extracts insights from patterns that lead to incidents and improves the loss prevention SOPs, while providing a comprehensive tracking of the fleet.

Finally, a decision support system is used for enabling faster and better operational workflows. The solution delivers a return of investment by forecasting where the incident might happen and providing preventative early warnings, which reduces operational costs, downtime and loss of earnings. An option to anonymise the data is also available, encouraging data and best practice sharing not just within but also across organizations.

WeavAir emission monitoring & ESG reporting solution

Decarbonisation is another top priority for most stakeholders in the maritime industry, given the updated IMO and flag state regulations, as well as the impending climate change. It is also one of the top priorities for the Singapore Maritime R&D roadmap. After having hundreds of conversations with industry professionals like ship owners, managers and insurance, the WeavAir team has zeroed in on the key challenges to provide a better experience meeting the unique needs of the industry.

WeavAir emission monitoring system is composed of a modular software assessment and multi-sensor system that can be used separately and in combination, while being fast and easy to implement. The system combines emission models and direct monitoring and can diagnose emissions mix and quantity directly, without relying only on the calculation as a proxy. The sensors are able to detect a variety of gases like carbon dioxide, sulphur oxides, nitric oxides, particulates and others upon request. This puts a powerful tool in the hands of ship owners, managers and charterers as they can use the solution to continuously track the emissions, impact of changes in fuel and other decarbonisation and energy efficiency systems. By monitoring the emission output directly, it enables a more accurate assessment of not just the amount of fuel burned but also the fuel composition, diagnosing any additives that can damage the engine. The system can save time and improve the accuracy of sustainability, ESG reporting and emissions reporting. It can also be used to track the scope 2 emissions, including those of subcontractors across the full value chain.



Figure 4 - WeavAir solution being tested at a customer site

Solving industry pain points

Compared to the status quo, WeavAir's solution is faster, more accurate and less expensive to implement. It is faster because the data collection is more standardised and automated avoiding duplication. It is more accurate as it improves the granularity of data collection. It is less expensive to implement as the system makes use of data models that are more interoperable and don't require re-wiring the operations while aligning with the needs of ship owners, managers, class societies, flag states, port states and insurers.

"It is critical to collect the right data, fill in the gaps in data collection and make sense of it using most relevant, unbiased and up-to-date insights," explained Natalia. "We believe such data-driven approaches can help ship owners and managers establish brand leadership and reduce operational risks while improving risk rating and commercial viability. It would also attract new talent and investment".

The WeavAir solution also reduces manual work in tracking claims by using one centralized platform to improve data consistency for claims accounting. This enables improved usability of data for analysis via standardization of terms and granularity of data.



WeavAir solution is scalable across several key loss prevention sectors, like cargo, crew, emissions and machinery.

WeavAir team and experience

The WeavAir team has expertise in data analytics, R&D project management and design. WeavAir has been working on developing and validating the technology with software and sensors being developed for real estate and transportation systems. The company has developed an assessment system for carbon emissions, contamination, hazards as well as a COVID-19 risk analysis system. WeavAir's solutions have been tested with MNCs and large corporates in Singapore, South Korea and Europe.

A year ago, the team discovered high impact applications in the maritime field and have started the development of products based on the needs of this industry. WeavAir received interest from over 20 maritime industry professionals and secured pilot LOI from both a leading insurance provider and a shipowner, who are sharing their expertise on the critical aspects of technology and product that will ensure its uptake. Their expertise helped accelerate the development of the product and its relevance to the specific needs of the ship owners, ship managers, P&I clubs and charterers.

WeavAir was the winner of PIER71's Smart Port Challenge 2021.

To find out more, please contact them at natalia@weavair.com or at +14162764495 or +6592437101. They are also recruiting partners and hiring to meet the international demand of their solution.



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DVSP: building resilience and sustainability through a bespoke digital vision

The SSA-led Digital Vision & Sustainability Programme has been developed to help SMEs in the maritime and shipping industry develop and execute bespoke digitalisation blueprints while setting up the cornerstones for them to build business resilience and sustainability in the fast-changing global business environment driven by technology.

One such company is Pacific Radiance Ltd, an owner and operator of offshore vessels as well as a provider of offshore support services. Established in 2006, Pacific Radiance is listed on Singapore stock exchange since 2013. The company's vessels have operated successfully in Middle East, Australia, Brazil, Russia, Brunei, Malaysia, Indonesia, India, Myanmar, Mexico, East Africa and West Africa. Pacific Radiance group also operates a modern shipyard (Crest SA yard) and equipment workshop facility in Singapore.

We talk to Sreekumar Pillai (Sree), Senior Manager Corporate and Business Development. Sree leads the digitalisation projects also looks after the offshore wind farm business of the company.



Sreekumar Pillai (Sree), Senior Manager Corporate and Business Development, Pacific Radiance Ltd

Why we think we need Digitalisation? (Efficiency & Cost driven needs)

In our Offshore support services industry, we need to handle a wide variety of offshore support vessels, different kinds of projects and charter contracts. Our existing digital infrastructure is not fully efficient to support these wide variations in our processes.

Many of our processes originates from our ships and then moves through different departments in our shore establishment. For example, a purchase request form is raised by the ship's crew, vetted by the operation superintendent and then goes through the regular procurement work flow involving purchase department, vendors, finance department etc. Our current SAP system is not designed to support end-to-end workflows and this results in bottle necks and inefficiencies.

We have several software handling different functions. Eg. SAP for purchase and finance; Bassnet for 'Planned Maintenance System; Netvision for Crewing etc. These systems operate in silos without any interface and this severely limits our ability to create integrated dashboards for effective decision making. This also prevents us from doing any kind of analytics for business intelligence purposes.

FEATURE

Since 2015, the oil & gas industry and its supporting industries such as ours were in distress because of overcapacity and low oil prices. Although the situation has slightly improved in recent years, our offshore support industry needs to cut wastage and improve efficiency to survive and stay profitable. While most of the cost cutting has happened through reduction in most obvious areas like headcount, salaries, infrastructure, logistics, supply chain etc, many companies have not fully exhausted their options for saving costs by means of improved operational efficiencies. In order to bring operational efficiencies beyond certain level, 'Data driven decision making' to a higher scale is essential and this is the relevance of our digitalisation projects.



High data costs and connectivity challenges of ships acted as a barrier in scaling up digitalisation in the past, but this is changing and satellite data connectivity is getting more affordable recently. This opens-up avenues for shipping industry to leverage digitalisation and derive efficiencies similar to other industries. For example, the airline industry has highly automated ticketing, check-in and baggage handling processes to make the passengers do most of the steps on their own, thus freeing up their resources.

There are several such possibilities to enhance efficiency in our industry as well. For example, the crew on our ships change frequently and a typical new joinee has about 30 certificates including his seaman book, watch keeping certificates etc. that can take up to two hours for a crewing executive to enter into database. In a digitally transformed scenario, the crewing executive sends a link from crewing database to the prospective crew recruit via email requesting to fill up the details. By 'digitally offloading' this work to the new recruit, the company can save precious manhours and ensure better data integrity. Two to three hours per crew member for an average of 1,000 crew recruitments per year is a significant saving and since the person entering the data is in a better position to verify his own data, it results in better data integrity.

Our offshore support industry needs to cut wastage and improve efficiency to survive and stay profitable. Data analytics helps to maximise revenue. For example, the fuel consumption, sailing time etc for a voyage during monsoon time could be higher. Access to this information at the right point of time in the chartering process prevents margin erosion.

Sometimes we face situations where we are unable to do data driven decision making because reliable information is not available at the exact moment when we need it. Digitalisation can fill those gaps.

We have challenges related to secure information sharing between different stake holders (clients, ships, operation & technical team etc). Digitalisation helps to maintain centralised and updated repository of vessel's drawings and documents, which can be securely accessed anywhere.

Supply chain management is one of the key areas where digital transformation has happened in a big way in a variety of industries such as retail, airline, travel, F&B, automotive etc. As a result, there are lots of examples and references for us to follow and hence this is one of the low hanging fruits.

We have limited facility in our existing systems for the initiator of purchase to track the status of purchase of a critical item such as a spare part. One of the biggest

An offshore vessel is required to maintain a massive amount of statutory records, certificates and permits, which expire by the efflux of time.



timewasters in the process is people following up over telephone or emails. From the experiences of the ecommerce industry, we know how easy it is to track an order electronically and similar benefits can be brought to our purchase process through digital transformation.

Mechanical equipment usually does not fail without first giving a warning sign. If we take proper corrective measures when we receive these warning signs, it will help us avoid costly repairs. Many of the ships have powerful automation systems supported by several sensors that accurately log various machinery parameters such as temperature, pressure, flow rates etc. Data from these automation systems can be used for condition-based monitoring systems and prevent catastrophic failures.

By analysing fault history and trends, we will be able to implement systematic application of lessons learned. For example, if we have witnessed failures of certain components leading to costly equipment damages, we will be able to mitigate future failures in similar equipment fitted in rest of the fleet and take control measures avoiding damages, downtime & saving revenue. Classification Societies like DNV are also adopting digitalisation on a fast scale. DNV introduced electronic class and statutory certificates for the entire fleet serving a significant number of flags in 2018. This means documentation never gets lost; it is always up-to-date and is accessible from any device. In order to take advantage of such new initiatives, we need to have digitally compatible systems on our side.

Co-ordinating vessel inspections by Charterer, Class or other external agencies is one of the important functions of the technical department. Correct recording of the inspection / audit points and their satisfactory and timebound closure is critical in securing business for the company. Using mobile-based inspection apps, it will be easier to walk around the vessel with the inspector, checking each item and snapping pictures of nonconformities. There will be no time wasted in preparing an inspection report after the inspection. The report will be ready to send digitally to all parties via email at the end of inspection.

An offshore vessel is required to maintain a massive amount of statutory records, certificates and permits, From the experiences of the e-commerce industry, we know how easy it is to track an order electronically and similar benefits can be brought to our purchase process through digital transformation.

which expire by the efflux of time. It is important to keep track of their expiry dates and act in advance for their timely renewal. There are digital tools available to manage this efficiently.

A number of reports are required to be prepared by the operations team for customers, regulatory authorities and for internal use. Using customisable report templates, data available within the system can be auto populated to generate reports. This saves lot of time and ensure high data integrity. Reports in digital formats will help to reduce consumption of paper, availability of information in real-time across a range of devices such as laptops and mobile phones and easy transmission to all stake holders.



What we aim to achieve though our digital vision?

Secure and seamless data sharing amongst all stake holders; efficient data collection, storage and data analytics that supports data visualisation through intelligent dashboards for fast and effective decision making; as well as leverage available digital tools and technology to improve our processes and systems. Build intuitive, flexible and scalable systems that are fit for our business needs.

Identifying the pain points in developing a strong digital strategy

SSA's very popular Tech Talk Thursdays was back with a hard-hitting Digital Champions edition, which provided a platform for different SMEs to share their best practices from their digitalisation transformation journey, and talk about their pain points in this journey and learn how to overcome them.

Bernard Liew from Pacific Carrier Lines and Aloysius Lim from Uni-Span Supply Management moderated the panel discussions together with SMEs and expert speakers.

In the first part of the discussion, Sreekumar Pillai, Senior Manager Corporate and Business Development at the offshore support vessel owner and operator Pacific Radiance, said his company had embarked on its digital journey to resolve inefficiencies surrounding data extraction and data visualisation. "We wanted a system where we could resolve inefficiencies using digital tools and that is the core of our digital transformation," he said. Adil Ashroff, COO Griffin Kinetic, said his company's digital transformation was driven by the goal of "how to enhance visibility for our clients in a way that promotes transparency and confidence. What we are doing is putting everyone on the same level with all the information for the deliveries," he stressed.

Kuet Ee Yoon, Advisor, Organisation Deevlopment at Ocean Master Engineering, raised two important questions: what is the real pain point for SMEs and what do you need to do to understand the common pain points. While a poll of delegates attending the discussion cited budget constraints; lack of strategic implementation; the lack of connectivity to a digital/maritime eco-system as the main pain points when it came to digitalisation.

Continuing the theme of Pain Points and Digitalisation Gaps, the second part of the 90-minute debate examined a range of issues such as what SMEs needed to do to successfully



develop a strong digital culture, albeit sometimes with limited resources. Isa Nasser, head of Infocomm Technology Division, NTUC Learning Hub; Juan Jose Gil, CEO Aventra Singapore; Ng Zhuo Wei, Enterprise Account Executive SEDNA; Magnus Lande, Commercial Director Maritime and Head of APAC, Veracity by DNV; and Tay Phaik Sin, Senior Manager at PWC, all gave their valued viewpoints. And some of the key takeaways, especially related to achieving success on digital initiatives, included: "Maintain good communications about whatever initiatives are taken. Strong leadership is important and champions need to keep talking to users. Spend time on the functional aspect and less time on the infrastructures and keep an open-minded approach.



Tech and Demo Day – Robotics and Robotic Process Automation



The 4th edition of the SSA's Techand Demo Day, supported by Enterprise Singapore, was successfully held on December 17th at HUONE Singapore, with those attending responding very positively to the event despite the stringent safety measures put in place due to Covid-19.

Themed 'Robotics', the SSA showcased and introduced its members to the emerging robotics technology in the Maritime industry and how this robotics technology could help create an effective and efficient ecosystem for businesses. This is in line with the SSA-led Digital Vision & Sustainability Programme (DVSP) introduced at the previous Tech and Demo Day. DVSP is developed to help SMEs in the maritime and shipping industry develop and execute bespoke digitalisation blueprints while setting up the cornerstones for them to build business resilience and sustainability in this everchanging global business environment driven by technology.

The event saw positive attendance — industry stakeholders and Maritime students, such as Ship

Every presenter shared their different perspectives on the importance of digitalisation.



Agents, Managers, Owners, Operators and Charterers learning what are the emerging robotics and robotic process automation (RPA) technology in the Maritime industry. Presenters from Bureau Veritas, MI Robotic, Spinoff Robotics, Volocopter and 3D MetalForge shared their expertise and insights on the various robotics technology. As well as an introduction, discussion and importance of RPA from Constant Bearing, CFB Bots and IMDA, NTUC LearningHub.

Every presenter shared their different perspectives on the importance of digitalisation and a lot of attention was given to promote emerging robotics technology that would help with the growth of SMEs, particularly in the maritime and shipping industries.

Throughout the event, the presenters showcased their services and robotics technology through live demonstrations or video examples of their specialised technology. The participants actively engaged with the presenters during our Q&A session.

SSA would like to thank all presenters and the event sponsor, Enterprise Singapore for making the 4th SSA Tech and Demo Day a success!



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ONEHANDSHAKE

Making Waves in Sustainable Shipping

Save time with timely arrivals at Singapore

With global supply chains being disrupted amid the COVID-19 pandemic, timely arrival of ships and harbour pilots become even more critical. PSA Marine introduces a ONEHANDSHAKE[™] ("OHS") module, the OHS ShipMaster, an innovative digital solution that facilitates communication and improves certainty of arrival times of both ships and harbour pilots.

OHS ShipMaster is an enhancement to PSA Marine's existing Vessel Pilot Communication (VPC) system that was launched in August 2020. With OHS ShipMaster, ship masters effortlessly update their Estimated Time of Arrival ("ETA") and receive latest updates on pilot arrival times through a web application.

With better communication, ship masters can plan their routes better, and adjust their speed to arrive just in time to Singapore. Thereby, attaining greater fuel savings, lower carbon footprint and lesser idling in port.

"OHS ShipMaster ensures timely arrival of vessels to our Port and more efficient planning of port resources including our harbour pilots and pilot launches. With greater certainty, operations can be more efficient, resources can be optimised and all parties can benefit," said Mr. Jimmy Koh, Head of Digital Transformation and Chief Pilot of PSA Marine.

Singapore is the world's top transhipment hub. To keep trade moving at a steady clip, PSA Marine is constantly introducing various digitalisation initiatives on ONEHANDSHAKE[™] to improve vessel turnaround in Singapore.

Wondering what's next after OHS ShipMaster? Look out for Opt-E-Arrive, a collaborative initiative being developed by PSA with shipping lines and stakeholders. Opt-E-Arrive enables efficient communications and exchange of information amongst stakeholders to facilitate ship masters to optimize their route planning and arrive just in time, with berth updates as early as 5 days before arrival.

Why wait? To know more about OHS ShipMaster, contact us at psam-ohs@globalpsa.com





The 'refreshed' SSA website is up and running

The SSA is delighted to announce that its refreshed website is now up and running. In line with its goals to drive digitalisation in the shipping industry, the team has been seeking new technology and digital solutions to better serve all its members.

The refreshed website comes with a new members portal with real-time updates and information that the SSA wishes to relay to all members. With new firewall and cyber security features, the current communication via email may not be as efficient moving forward. Members who are familiar with the old system will enjoy this new space.

Members are also able to get access to our webinar and event recordings. In case you were unable to make it to any of our webinars, or you want to find photos of a particular SSA event, you will now be able to find them on our website. In addition, you will be able to find out about our upcoming events, look for circulars you may have missed, have access to our course schedule and so much more. We do want to point out that most of our newer features are accessible only by company administrative representatives and top management of SSA member companies.

Here are some of the new functions company administrative representatives and top management of SSA member companies can look forward to:

- Keeping track of company's contact information and details
- transparency of employees' level of engagement in SSA event(s), training(s), and/ or committee
- updating fleet stats directly, nomination of committee(s) for employees and training/ Events enrolment.

There are more functions that you can expect to see in 2022, like using the SingPass authentication login. We hope that the new look website will prove to be a more interactive platform to maintain our connection with all members especially during difficult times like these.



Sea Crew Vaccination Initiative (SeaVax)

After months of engaging with the different stakeholders, from industry leaders to government agencies, the SSA-led industry sea crew vaccination initiative SeaVax, was launched in November 2021.

SeaVax was developed in collaboration with PSA and the Fullerton Health Group (FHG is supported by the Maritime and Port Authority of Singapore (MPA) with funding from the Singapore Shipping Tripartite Resilience (STAR) Fund.

The STAR fund was established by MPA and SSA alongside seafarers' unions the Singapore Maritime Officers' Union (SMOU), the Singapore Organisation of Seamen (SOS), the International Transport Workers' Federation (ITF) and the International Maritime Employers' Council (IMEC). In total, US\$1.2 million was put in place for use on projects to uphold crew welfare and safety through the pandemic. With the various challenges seafarers faced during this pandemic, most notably crew changes, the SSA is pleased to note that over 500 seafarers have benefited from the SeaVax programme after they were given access to vaccination here in Singapore. This was achieved in less than two months.

Currently, the SeaVax team has provided vaccination to seafarers from the United Kingdom and Eastern European countries to Asia Pacific countries in the region. A sizeable number of over 100 seafarers, who have regular calls in Singapore, have also completed their primary series of two doses of vaccines under the SeaVax programme.

Michael Phoon, Executive Director of SSA, said: "As seafarers are key frontline workers supporting international shipping, SSA is pleased to be leading this tripartite initiative to help them get the protection they





need against COVID-19. We hope the experience with this pilot vaccination programme will facilitate the scaleup of vaccinations for the wider seafaring community."

Captain Belal Ahmed, Chairman of the International Maritime Employers' Council (IMEC) added: "This is an important step forward by both the local government and the shipping industry and it will go a long way in reestablishing Singapore's leadership role in the fight against the pandemic and the protection of seafarers' health and safeguarding of the global logistic chain. IMEC is proud to be a partner in this Tripartite cooperation and will continue to do so in future."



Currently, the SeaVax team has provided vaccination to seafarers from the United Kingdom and Eastern European countries to Asia Pacific countries in the region.

Stephen Cotton, General Secretary of the International Transport Workers' Federation (ITF), said: "This is a ground-breaking move by the Singaporean port authorities, seafarers' unions and local shipping industry. Singapore has worked out that for any country to succeed in a globalised economy, particularly as a transport hub, you've got to be part of global solutions, national approaches won't work. We need to see more countries look to Singapore's leadership for the way forward. Follow Singapore, and let's bring on the recovery we all need."

Moving forward, the SeaVax team has forecasted a healthy pipeline of seafarers who has applied for vaccinations via their companies or agents. It is important to note that vaccination is voluntary and protecting the seafarers well-being is of the utmost importance.

WeavAir, EcoWorth Tech and Spinoff Robotics Emerge as Top three Winners of PIER71™ Smart Port Challenge 2021



Natalia Mykhaylova, Founder & CEO of WeavAir, being presented with the top prize at Smart Port Challenge 2021 Grand Final

The fifth edition of Smart Port Challenge (SPC) came to a close on 23 November 2021, with WeavAir, EcoWorth Tech and Spinoff Robotics emerging as the top three winners and walking away with cash prizes of S\$10,000, S\$5,000 and S\$3,000 respectively. eyeGauge also received a special mention by the judges.

Graced by Mr Chee Hong Tat, Senior Minister of State, Ministry of Transport, the SPC 2021 Grand Final was held across two physical locations and via a livestream. The judges – Hor Weng Yew (Pacific Carriers Limited), Eddie Chau (V-Key) and Ng Yi Han (MPA) – evaluated the eight grand finalists on their proposed solutions, business models, market opportunities, impact to the maritime industry and overall team capabilities.

SPC 2021 offered 17 innovation opportunities co-created with 21 maritime corporates in five focus areas: (1) Smart Port; (2) Smart Ship; (3) Crew Safety, Training and Wellbeing; (4) Smart Maritime Services and Logistics; and (5) Green Technology.

A total of 18 start-ups were shortlisted from over 150 applications and put through PIER71[™] Accelerate, a seven week market validation and customer discovery programme, and eight went on to the Grand Final. All start-ups that complete PIER71[™] Accelerate are eligible to apply for a grant of up to S\$50,000 from MPA to embark on pilot projects with maritime companies.

Solutions addressing safety and well-being of maritime personnel featured strongly in SPC 2021, in line with the increased attention paid by the industry on this focus area. Other innovative solutions include application of artificial intelligence, data analytics and robotics to optimise the global supply chain, automate processes and create more sustainable shipping operations.



Runner-up, EcoWorth Tech (left), and 2nd Runner-up, Spinoff Robotics (right), explaining their respective technologies to Senior Minister of State Chee Hong Tat and maritime corporates.

Expanded PIER71[™] Programmes from 2022

During the SPC 2021 Grand Final, the Maritime and Port Authority of Singapore (MPA) and NUS Enterprise renewed their partnership to strengthen the maritime technology (MarineTech) ecosystem through enhanced and new innovation initiatives and start-up programmes for another three years.

Under this partnership, MPA and NUS Enterprise will expand the scope of the PIER71™ (Port Innovation Ecosystem Reimagined @ BLOCK71) initiative to better support Singapore's growing maritime technology or MarineTech start-up ecosystem. Aimed at strengthening the growth of MarineTech start-ups, attracting more investments, supporting internationalisation, and increasing tech solution deployment to the maritime industry, new programme components include:

- PIER71[™] Ascend A 12-month, by-invite only scale-up programme, with curated masterclasses, industry networking sessions, and an immersion programme aimed at connecting start-ups to overseas markets and government stakeholders, as well as prospective maritime customers. Promising scale-ups can also apply for grant support of up to S\$100,000 to scale their solutions, under MPA's MINT-STARTUP scheme.
- Investor Connection Structured pitching and venture capital (VC) networking events will be organised for start-ups to gain access to investors and capital. This aims to increase the amount of investment into PIER71[™] and partner programmes' alumni.



From left: Mr Niam Chiang Meng, Chairman, MPA; Mr Kenneth Lim, Assistant Chief Executive (Industry), MPA; Mr Chee Hong Tat, Senior Minister of State (Ministry of Transport); Prof Chee Yeow Meng, NUS Associate Vice-President (Innovation & Enterprise); Prof Freddy Boey, NUS Deputy President (Innovation & Enterprise)

A recording of the SPC 2021 Grand Final is available at https://pier71.sg.

To find out how you can be involved in SPC 2022 as a maritime corporate, contact enquiries@pier71.sg

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Activities galore for the SSA YEG

In the last quarter of 2021, from October to December, the SSA Young Executives Group (YEG), led by Ms Akanksha Batura Pai, held a myriad of events for the YEG members.

The Educational branch of YEG, in collaboration with The Society of Naval Architects and Marine Engineers Singapore (SNAMES), conducted a webinar on 21 October for the YEG members and later extended to all SSA members. Mr Alex Wright from VesselsValue shared an overview and trends on tanker, bunker, and container markets during webinar conducted via zoom. Following his sharing, the attendees were able to reach out to him to find out more.

In the season of giving, the Community team organised a Charity HIIT session on 25 November.YEG partnered up with a HIIT instructor from ActiveSg, Coach Victoria, who kindly volunteered her time to support this meaningful event. She led the attendees in a fun HIIT session via zoom and shared some cool down stretches that are useful for any post exercise routines. After the event, YEG donated S\$2,500 to LOVE NILS, a charity organisation that provides emotional, social and community support to cancer patients and caregivers. This is in line with YEG's goals to support local grassroots organisations.

YEG members were in for a treat from November to December with three workshops organised by the Networking sub-committee. On 11 November, the organising team engaged The Oyster Cart (TOC) to conduct a virtual Oyster Appreciation workshop. Over 40 members received their own oyster box that came with a dozen of oysters and oyster shucking tools. TOC then shared with the attendees on how to differentiate the different origins of oysters and determine the freshness of the oysters, drinks pairing options for the different oysters, and of course, how to shuck oysters on their own.

On 2 December, the organising team brought the members on a trip to Japan, virtually, for a Japanese appreciation event. Cellarbration sent out miniature bottles of whiskeys to the attendees and conducted the appreciation workshop on the virtual networking platform, Kumospace. SSA and YEG are always looking for new ways to engage the members and the team tested out the Kumospace platform which is designed to mimic a physical event. Attendees were able to come off mute and chat freely within their own "circle" and they would not interrupt the speaker unlike in a typical virtual platform that is primarily designed for meeting purposes.



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All in all, even though physical events are still unable to be hosted, the YEG committee strives to bring in fresh and innovative ways to keep the young and younger community in the shipping industry engaged and excited for what's coming along in the new year.

ASSOCIATE MEMBERS

METIS Cyberspace Technology (Singapore) Pte Ltd



METIS specialises in data acquisition, real-time performance monitoring and intelligent analytics for the maritime industry, based on artificial intelligence techniques. The power of METIS is derived from its skilled personnel whose innovative thinking, maritime business knowhow and expertise in high-end technologies are empowering shipping's digital transformation. The METIS cloud platform is already installed on more than 270 vessels. Established in 2016, METIS has achieved a worldwide presence with offices in Athens (HQ), Singapore, Oslo, Hamburg and Vancouver.

Miller Insurance Services (Singapore) Pte Ltd



Headquartered in London, Miller established operations in Singapore in 2008 to provide broking services to the Asia market. Its Singapore-based experts provide direct insurance and reinsurance broking services covering a variety of specialist areas including marine, energy, renewables, property, casualty, construction and more. All functions including placing, claims, technical and accounts are handled locally.

START-UP MEMBERS

Greywing Pte Ltd

GREYWING

Greywing is a digital platform that allows crew managers to track their vessels, execute crew changes, interact with port agents and get the latest information on flight prices, travel/port restrictions etc. Greywing can seamlessly integrate with inhouse and external providers across crewing HR, travel management companies and port agents.

Nautilus Labs Pte Ltd



Nautilus Labs is advancing the efficiency of ocean commerce through artificial intelligence. With hubs in New York, Singapore, Paris, and London, the firm is trusted by clients across the globe to help make better, real-time decisions that ultimately unlock transformative outcomes—at sea and onshore. By partnering with Nautilus, ocean shipping leaders can maximise returns for every vessel and voyage and drive decarbonisation while enhancing cross-team collaboration, greater transparency, and stronger accountability for their companies, shareholders, and the planet we all share.



Executive Development Programme

Training Calendar | FEB - APR 2022

				FEES* (SGD)	*Second figure
Course Title	Start Date	End Date	Duration	SSA Members	Non-SSA Members
SS600 & Basic SS648 for the Bunker Industry	23/02	24/02	2 Days	\$856 \$296*	\$1284 \$444*
Introduction to LNG as Fuel in Shipping	27/03	27/03	1 Day	\$428 \$228*	\$642 \$342*
Principles of Shipbroking & Chartering	28/03	01/04	4 Days	\$834.60 \$444.60*	\$1251.90 \$666.90*
Maritime HR Management	06/04	07/04	2 Days	\$642 \$342*	\$963 \$513*
Principles of Shipping Documentation & Practices	11/04	14/04	4 Days	\$642 \$342*	\$963 \$513*
Introduction to Shipping (Masterclass)	20/04	21/04	2 Days	\$642 \$342*	\$963 \$513*
Principles of Shipping Operations & Practices	25/04	28/04	4 days	\$834.60 \$444.60*	\$1251.90 \$666.90*

*Fees subject to prevailing GST. MCF Training Grant is available for eligible participants. MCF Training Grant is not available for the courses – 'Understanding Import/Export Techniques and Documentation' and 'Effective Written Communication in the Shipping Industry'. Please refer to www.mpa.gov.sg/mcf for more information. Dates may be subject to change. Download the course registration form at: http://www.ssa.org.sg/images/ssa/pdf/Course%20Application%20Form-20Sept2016.pdf and for further enquiries, please contact Kuna at 6305 2267 or email kuna@ssa.org.sg



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James Tham, Managing Director **Penguin International Ltd.**



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