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Harbours review

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red-hot port matters

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Baltic – the world's first broadband sea

The Swedish tech-company **Nowhere Networks** works together with a number of shipping lines to provide passengers with high speed and low latency connection during their voyage. "So far, the only broadband alternative at sea has been the Internet via expensive satellite or poor LTE connection. Those connections are rarely sufficient for today's modern and demanding passengers […]," the company wrote in a press release. Nowhere Networks started 2017 with the idea of creating a radio link system for ships that reach over 50 km from the coast with the highest possible capacity and which could be scaled up through normal sales and distribution. **CG Sänne**, Vice President and Sales Manager, Nowhere Networks, explained, "We quickly realized that the need in the market was much broader than that of normal sales and distribution. Therefore, a year ago, we decided to make life better for our customers by creating a full-service concept. This includes installation, mast rent, operation, Internet, and everything else required for the vessels to handle today's customers who require a constant connection, and also the vessels IT operations increasing need for more broadband." In order to achieve long reach and high capacity, the company uses highly positioned heavy-duty antennas both on land and ships. Next, it combines the moving and stabilized antennas with cloud-based software that monitors, adjusts, and ensures that the ships get the best possible connection. According to Nowhere Networks, shipping lines serving more than 15 million passengers/year in the Baltic are involved in creating the network, at the moment providing coverage to and from **Stockholm**, **Visby**, **Helsinki**, and **Tallinn**. "This is just the beginning," **Asbjörn Frydenlund**, CEO, Nowhere Networks, noted before adding, "By the end of the year, we will cover traffic to Turku, Riga and Oskarshamn. At the current rate, we will have digitalized the entire Baltic Sea by the end of the year 2020. This means that ships and travellers can be fully connected at the same speed and with the same stability as on the mainland." For example, **Eckerö Line** has used the Nowhere Networks radio link technology for approximately one year on the line between **Grisslehamn** and **Mariehamn**. **Kenneth Påvall**, IT Infrastructure Manager, **Rederi AB Eckerö**, explained, "The need for data capacity is constantly increasing, and the combination of sufficient reach and high capacity is a challenge. After evaluations, we have now chosen the solution that we believe will provide the best capacity. The projects have run smoothly, and we are approaching our goal of having stable and fast broadband to all passenger ships in our fleet. Cost-effectiveness is important, and the fact that vessels operate on routes where other shipping companies also have the same interest in fast broadband is an advantage." Frydenlund wrapped up by saying, "The demand for safe and cost-effective broadband is enormous. This is a breakthrough that now makes it possible to work, surf and manage social media the same as on land. We build broadband capacity on ships at a level that nobody had thought was possible."

BP-Nouryon-Rotterdam green hydrogen co-op

The parties have joined forces to investigate the possibility of producing hydrogen via water electrolysis, with the energy needed for the process fed by renewables. The **BP** refinery, located in the **Port of Rotterdam**, currently uses hydrogen to desulphurise its products, but it's made from hydrocarbons. Shifting to green hydrogen could potentially result in a reduction of 350kt of CO_2 emissions per year. According to the partnership agreement, a study will be carried out on the feasibility of setting up a 250 MW water electrolysis facility that could produce up to 45kt/year of green hydrogen. If the outcome turns out to be positive, **Nouryon** will build and operate the facility, whereas the Port of Rotterdam will provide the local infrastructure as well as look into options for further developing a green hydrogen hub in the area. The partners intend to take a final investment decision on the project in 2022. "BP is committed to advance a low carbon future. We have committed to reduce emissions in our operations, improve our products to help customers reduce their emissions and create low carbon businesses. The use of green hydrogen, made from water with renewable energy, has the potential to deliver significant emissions reductions at Rotterdam. Working with Nouryon and the Port of Rotterdam will allow us to explore and fully understand the technical, operational and financial dimensions of this potential opportunity," **Ruben Beens**, CEO, BP Netherlands, said. **Knut Schwalenberg**, Managing Director Industrial Chemicals, Nouryon, added, "This partnership builds on our expertise in electrolysis technology to open up new value chains. With green hydrogen, we can provide sustainable solutions to our customers ranging from low-carbon fuels and industrial processes to new forms of circular chemistry." **Allard Castelein**, CEO, the Port of Rotterdam, also commented, "Development of large-scale electrolysers connected to offshore wind farms is vital for making solid progress with the new energy system in order to realize our climate goals. This 250-megawatt electrolyser is a key proof point that Rotterdam has the ability to be a frontrunner in the energy transition, which is an important differentiator for the port industry."

A sulphur-sniffing drone north of the Great Belt

The device will check whether ships sailing in the Danish waters comply with the 0.1% limit set in the **Sulphur Emission Control Area**. By entering a ship's exhaust gas plume, the drone, fitted with a so-called 'sniffer', can register the amount of sulphur in the bunker. These data are then immediately available to Danish authorities who can follow up if the vessel doesn't comply with the requirements. The drone, provided by the **European Maritime Safety Agency**, performed its first mission on 11 April. "The project will contribute to more efficient enforcement of the sulphur rules, thereby ensuring fair competition for shipping companies and less pollution from ships. In Denmark, the Danish Environmental Protection Agency is responsible for enforcing the sulphur rules, and the **Danish Maritime Authority** supports this work through ship inspections in Danish ports and now also with drone monitoring," a press release from the Danish Maritime Authority explained.

Wallenius and Swedish Orient Line form a JV

The Norwegians and Swedes have set up a new shipping company, the Gothenburg-based **WALLENIUS SOL**, specialised in transporting forest products. Initially, the company's network will cover the Gulf of Bothnia, both the Swedish and Finnish coasts (**Husum**, **Kaskinen**, **Pietarsaari**, **Oulu**, and **Kemi**), the German Baltic **Port of Lübeck**/**Travemünde**, **Antwerp** and **Zeebrugge**, and southeast England. The company has kicked off its operations with five vessels but has already ordered brand-new ro-ros. The contract includes building up to four 1A Super ice-class vessels. The newbuilds, which will run on liquefied natural gas, are to be ready by 2021. "Together, we can offer a strong mix of experience and competence, which can support a growing forest industry. Wallenius has experience from industrial shipping, ship owning, ship building and ship management. SOL brings the competence of logistics from the forest industry and other types of cargo in this geographical area," **Ragnar Johansson**, Managing Director, WALLENIUS SOL, said. Three major forest and paper companies from the Nordic market – **Stora Enso**, **Metsä Board**, and **BillerudKorsnäs** – have signed shipping deals with the new JV. "We rely on efficient and sustainable transports for our products. The partnership with WALLENIUS SOL will enhance our opportunities to compete globally, while at the same time the new vessels will reduce environmental impact," **Knut Hansen**, SVP Logistics Global, Stora Enso, commented in this regard.

Maputo grows its Liebherr fleet

The Mozambique **Maputo Port Development Company** (MPDC) has recently received two brand new **Liebherr** mobile harbour cranes of the LHM 550 type. The new units have joined another pair of Liebherr's LHM 550s, deployed back in 2015. The new equipment will also be used for handling dry bulk, especially high-density commodities such as ferrochrome. The LHM 550 machines can lift up to 144t and have a maximum outreach of 54 metres. "The two existing cranes have proven to be drivers of productivity growth. By adding another two units to the fleet, Maputo Port is prepared to continue its successful development in the future," a press release from Liebherr read. As part of the deal, several operators and technicians will be provided with training for the handling and maintenance of the new cranes. In addition, the existing service contract between Liebherr and MPDC has been extended to cover the new machinery. "In addition to the two mobile harbour cranes, we have recently acquired 14 payloaders, eight tractors, eight forklifts and two rail excavators (for wagon unloading operations). This investment is in line with the need to improve the berth usage and the rehabilitation and deepening works that are taking place at the moment," Marla Calado, Chief Operations Officer, MPDC, said.

PD Ports launches Teesport-Doncaster rail service

The link, set up in cooperation with **GB Railfreight**, is a twice-daily rail service dedicated to **IKEA**'s shipments brought on-board **Containerships**' vessels coming from the Baltic. The service carries 56 boxes per day in two trips, the outward journey from **Doncaster** to **Teesport** via **Darlington** and returning from Teesport through **Yarm**. According to **PD Ports**, some 120 daily road movements are taken away from the UK roads thanks to the new setup, each of them 180 mile-long per vehicle round trip. "To us, delivery accuracy is of key importance. At the same time, we have a very ambitious decarbonising agenda and actively seek to reduce our environmental impact wherever possible. To shift from trucks to trains is one way of reducing the number of shipments and fuel used per shipment," **Elisabeth Munck af Rosenschöld**, Head of Sustainability, **IKEA Transport & Logistics Services**, commented. Jari Lepistö, Chief Commercial Officer, Containerships, added, "Reliability and sustainability are core values for Containerships and its customers. We were looking for reliable partners to move large amounts of cargo with increased volumes coming from the Baltics in a sustainable way. We needed an effective daily plan to move containers to Doncaster when satisfying one of our major customers, IKEA Transport & Logistics Services' environmental targets." **Patti Burt**, Key Accounts and Rail Development Manager, PD Ports, also said, "During the trial, we have proven the concept; the operational capability works at both terminals which is a testament to the fantastic teamwork involved in the whole partnership. We look forward to a strong, ongoing relationship." **John Smith**, Managing Director, GB Railfreight, summed up by saying, "This new intermodal service underlines the growing importance of rail freight in meeting the supply chain needs of leading global businesses. Rail freight offers the certainty and reliability required to support complex supply chains. At a time when business is under increasing pressure to improve their sustainability credentials, rail has the advantage of being significantly more environmentally friendly than road transport."

Maersk's first cold storage in St. Petersburg

Manned by a team of over 200 people, it'll be a 23,700 m²-big, three-chamber, 30k pallet and 50kt max capacity warehouse, with 35 docks able to serve up to 200 trucks/day. The facility, located within the **PNK Park Sofiyskaya KAD**, will offer separate storage chambers for frozen (-25°C) and chilled produce (+2/+8°C), as well as for bananas (+13°C). Approximately 40% of the new warehouse will be occupied by the Japanese-owned Dublin-headquartered fruit company **Fyffes**, with the remaining capacity available for other customers from the fresh and frozen produce segment. "I am extremely proud of this project, which is the first such cold store on the Russian market. As **Maersk**, we are committed to helping our reefer customers in all aspects of their supply chain needs. Those needs go well beyond transportation and storage is a crucial element we are now addressing," Zsolt Katona, Managing Director Eastern Europe, Maersk, said. **David McCann**, Chairman, Fyffes, added, "Today's ground-breaking is a very important milestone in Fyffes' strategy to grow our business in Russia. As the largest importer of bananas in Europe, Fyffes is delighted to partner with Maersk in this new warehouse development, which will increase our ripening capacity in Russia to over 200 thousand boxes of bananas per week." **Søren Skou**, CEO, Maersk, also noted, "Maersk is transforming to deliver integrated end-to-end solutions for our customers' supply chains. While growing our ocean activities in line with the market, investing in unbroken cold chain offerings is one of the levers we pull to accelerate our non-ocean business and grow ahead of the market." Having surpassed Germany, Russia has been the world's second-biggest banana importer since 2017, just behind the US.

Muuga to house a new terminal

The **Port of Tallinn** and **PK Terminal**, part of the Palgard Crane Group, have cut a deal on setting up a new dry bulk and general cargo facility in the **Muuga Harbour**. According to the cooperation and building title agreements the parties have signed (for a period of two decades, with an option to prolong the deal by another 15 years), PK Terminal will move into the two quays and the adjacent hinterland area previously used by the steel sheet galvanizing plant as well as the Koorma 2 real estate. The new terminal, spanning over 4.4 ha, will offer 0.5mt/year of cargo handling capacity, mainly for taking care of round wood, pellets, metal products, and crushed stone. PK Terminal will invest over 5.0m into developing the facility which is scheduled to come online within the next three years.

Kongsberg to deliver its Power & Propulsion System to Egil Ulvan's newbuild

The 3,500 dwt multipurpose gas-run freighter, due for delivery from the Turkish **Tersan Shipyard** in late 2020, will feature a number of technologies to be provided by Kongsberg Maritime. The propulsion system will comprise a **Bergen** B36:45L6PG gas engine and a liquefied natural gas control and safety system, a Promas controllable pitch propeller and rudder system, together with a battery pack, to enable periods of emission-free operation in ports and environmentally sensitive areas. The scope of supply will also include twin tunnel thrusters, steering gear, and deck machinery. The electrical system will consist of a hybrid shaft generator, SAVe Cube DC switchboard and the SAVe Energy system for energy storage (designed to regenerate energy during crane operations). Once put in place, *Oddrun With* will ply between **Østfold** and **Tromsø**. Apart from standard cargo operations, the ship will be able to carry reefers as well as discharge feed to fish farms. The vessel has been designed by the Førde-based **Multi Maritime** (the MM85CC LNG concept). "We have chosen Kongsberg Maritime to supply the power and propulsion system, including battery systems and automation as well as deck equipment. This is to ensure integration and 100% utilization of all systems, on what will be the future general cargo/reefer vessel, with a focus on environmental performance. We have great confidence in Kongsberg Maritime to support the company's goal of being the leading supplier in the maritime transport along the Norwegian coast," **Arild Hoff**, CEO, **Egil Ulvan Rederi**, underlined.

TradeLens enters St. Petersburg

The blockchain-enabled digital platform co-created by **Maersk Global Trade Digitisation** and **IBM** is being piloted in the **Port of St. Petersburg** after the **Russian Ministry of Transport** gave it the green light. **TradeLens** has been set up to provide the global supply chain with a digitised flow of container documentation. "The platform aims to significantly facilitate the interaction between shippers and various regulatory and administrative bodies in the country, ultimately increasing the speed of cargo clearance and movement of goods across borders," a press release from **Maersk** stated. According to the carrier, more than 100 participants are already involved in the platform, which processes over 10m discrete shipping events and thousands of documents each week. Since TradeLens is based on blockchain technology, each party has the same view of the transactions. "TradeLens offers unprecedented benefits to all parties involved in the transportation process by bringing full transparency of cargo moves while enabling seamless, secure sharing of real-time actionable supply chain information to all involved participants. The TradeLens platform fosters collaboration and trust while improving user experience and lowering costs through digitisation," **Mike White**, CEO and Head of TradeLens, commented.

Grimaldi and Corvus complete their mega batteries project

The ferries *Cruise Barcelona* and *Cruise Roma* have been fitted with a total of 11 MWh of energy storage, enabling zero-emission operations up to four hours during their port stays. "An ESS [energy storage system] this massive had never before been retrofitted onboard a cruise ferry vessel. It's clear now that if shipowners are willing to go green, the technology exists," **Roger Rosvold**, Senior Vice President Sales, **Corvus Energy**, highlighted. He also said, "The Grimaldi Group is a highly skilled and experienced shipowner. We are impressed with their commitment to reduce emissions from their operating fleet and their in-depth knowledge on what can be done. Good collaboration and close partnership are key in developing new and innovative solutions to accelerate the adoption of green technology."

DFDS to test Volvo Trucks' Vera

The Danish shipping company will put to the test the electric, connected, and autonomous vehicle which will transport goods from **DFDS**' logistics centre to **APM**'s terminal in the **Gothenburg** port. "The collaboration with DFDS is a first step towards implementing Vera in a real transport assignment on pre-defined public roads in an industrial area," the parties said in a joint press release. The vehicle will be used for short-distance, repetitive transportation of large volumes of goods, with speeds up to 40 km/h. The autonomous system will be monitored by an operator in a control tower, who'll also be responsible for the transport. The DFDS-**Volvo Trucks** initiative is supported by Sweden's **Innovation Agency Vinnova**, the **Swedish Transport Administration**, and the **Swedish Energy Agency** through the **Strategic Vehicle Research And Innovation Programme FFI**. "We want to be at the forefront of connected, autonomous transportation. This collaboration will help us develop an efficient, flexible and sustainable long-term solution for receiving autonomous vehicles arriving at our port terminal gates, benefitting our customers, the environment and our business," **Torben Carlsen**, CEO, DFDS, commented. **Mikael Karlsson**, Vice President Autonomous Solutions, Volvo Trucks, also said, "Now we have the opportunity to implement Vera in an ideal setting and further develop her potential for other similar operations."

Port of Turku invests in automated mooring

Cavotec will design, supply, commission, and service its multi-unit MoorMaster automated mooring system at the **Viking Line** berth. The system, to be delivered in 2020, will moor the 218 m-long cruise ferry *Viking Grace*. Once commissioned in 2021, Viking Line's newbuild *Viking Glory* will also use the MoorMaster. In 2016, Cavotec installed a similar system in the **Port of Helsinki**, which has already performed some 5,000 moorings.

HMM will join THE Alliance

If granted the necessary regulatory approvals, the Korean container shipping line will become as of 1 April 2020 the fourth member of the alliance set up by **Hapag-Lloyd**, **ONE**, and **Yang Ming**. By Q2 2020, **Hyundai Merchant Marine** (HMM) will have received twelve 23k TEUs-big box carriers, which will be then deployed within **THE Alliance**'s Far East-North Europe trade lane. In addition, the carrier will grow with eight brand-new 15k TEUs of carrying capacity vessels, scheduled for commissioning in Q2 2021. Previously, HMM tried to become a full member of the **2M** alliance formed by **Maersk** and **MSC**.

Containerships' newest box ship goes live

The shipping line, part of **CMA CGM**, has received from the **Chinese Guangzhou Wenchong Shipyard** *Containerships Polar* its second in a series of four 1,380 TEUs-big (incl. 360 reefer plugs) gas-run vessels. The 1A ice-class 170 m-long and 27 m-wide container ship has been put on the redesigned BALT 2 service, together with her sister ship *Containerships Nord*. The loop covers the ports of **Teesport**, **Zeebrugge**, **Rotterdam**, **Helsinki**, **St. Petersburg**, **Riga**, and **Gdynia**. *Containerships Polar* entered the service on 23 June in Rotterdam, where she also received her first batch of bunker. She was filled with approx. 200t of liquefied natural gas (LNG). The two remaining container carriers, *Containerships Arctic* and *Containerships Aurora*, will be handed over to their owners by end-2019. A few weeks later, during her call to the **RST Terminal** in the Port of Rotterdam, *Containerships Polar* was bunkered by **Shell**'s *Cardissa* with approx. 200t of LNG. According to the parties, it was the first simultaneous operations (SIMOPS) bunkering of a container ship in Europe, which made it possible to load and unload *Containerships Polar* while she was being refuelled. In addition, the company has extended its network with a service that links the Baltic Sea to the Atlantic via the North Sea. The weekly loop, served by a fleet of five 503 TEUs-big container carriers (*Enforcer*, *Ensemble*, *Meandi*, *Neuburg*, and *Ranger*), connects the ports of Gdynia, **Helsingborg**, and **Malmö** in the Baltic, Rotterdam and **Tilbury** in the North Sea, **Bilbao** in the Bay of Biscay, and **Leixões** and **Setúbal** on the Atlantic Portuguese coast.

Kongsberg to tech-furnish Seabourn's cruisers

The Norwegian company will deliver its K-Bridge Integrated Bridge System, incl. K-Pos Dynamic Positioning, to the Genova-based **T.Mariotti** yard where the newbuilds are being constructed. The order includes multi-functional workstations, featuring touch-sensitive control panels, joystick operation and large information displays; a dynamic positioning solution; the SN90 forward-looking, omnidirectional sonar; an Electronic Chart Display and Information System (incl. an integrated docking aid and mosaic-enhanced 360° radar images); and an ice radar. The two ultra-luxury expedition cruise ships – the first, *Seabourne Venture*, scheduled for delivery in June 2020, while her yet-to-be-named sister ship is due to enter service in May 2022 – are being built according to the PC6 Polar Class standards. The vessels will carry two custom-built submarines, 24 **Zodiac** inflatable boats, and an array of kayaks. "We will be able to offer our guests exciting, awe-inspiring expeditions in polar regions thanks to the technology that has opened up these areas for us. Safety is paramount, of course, which is why the K-Bridge system's pin-sharp radar images and built-in ice detection capabilities are so vital. We know we can navigate these areas with great confidence thanks in part to these systems," **Robin West**, Vice President of Expedition Operations, **Seabourn**, said. **Morten Stanger**, Vice President, Passenger & Seaborne Transport, **Kongsberg**, also underlined, "Having the vital navigational technology contained within one centralised software and hardware environment simplifies and enhances operational processes – and when these vessels head off into remote, less-explored regions, having full control of the ship and complete awareness of surroundings is the top priority."

Changes in Rotterdam's rail network

The new three round trips/week rail service was kicked off by TX Logistik on 1 July, connecting three terminals in the **Port of Rotterdam** – **RSC**, **Euromax**, and **ECT Delta** – with **Kornwestheim** in southwestern Germany. "We are using the boxXpress.de train system, in which we have been involved since its foundation and which has proven successful for many years in seaport hinterland transport to and from Hamburg and Bremerhaven, on account of its high stability and reliability," **Berit Börke**, Chief Sales Officer, TX Logistik, commented. Next, **P&O Ferrymasters**, the intermodal arm of **P&O Ferries**, has launched a new six departures/week round trip route from **Budapest** to Rotterdam via **Duisburg**. The service will be operated with the use of the company's 45 pallet wide high cube containers with a maximum payload of 23.5t for all types of ambient goods. "P&O Ferrymasters exists to solve supply chain challenges, and we are delighted to announce our second new intermodal service of 2019, connecting Budapest with the Benelux, Ruhr region and the United Kingdom," **John Freyne**, P&O Ferrymasters' Intermodal Business Development Manager, said. Finally, **European Gateway Services** (EGS), part of **Hutchison Ports ECT Rotterdam**, has re-arranged its Rotterdam-**Munich** service. The new-old route links now both Hutchison Ports' **ECT Delta** and **ECT Euromax** at Rotterdam's **Maasvlakte**. Other features – such as the three times/week frequency and the existing arrival schedule in Munich (Mondays, Wednesdays, and Fridays) – remain unchanged.

GSI to deliver two cruise ferries to Onorato

The Chinese **Guangzhou Shipyard International** (GSI) will construct two GT 69.5k-big, 237 m-long, and 32 m-wide scrubber-equipped LNG-ready ro-paxes for the Italian ship owner. The newbuilds – the first of which is to be ready for the 2022 peak season, while her sister ship half a year later – will be able to take on-board up to 2,500 passengers (across 550 cabins), also offering nearly 4,000 lane metres of cargo capacity. Once commissioned, the pair will fly the flag of **Moby**, serving traffic to and from the island of Sardinia. "Today […] marks an essential stage in the strengthening plan of the Moby fleet and very shortly, we might confirm the option for another couple of ships with the same characteristics. These units, which will serve Sardinia, will represent a flywheel for the economy and tourism of the island that we are honoured to serve ensuring a better service, more and more accessible and environmentally sustainable," **Achille Onorato**, CEO, Moby Group, commented.

Maersk tests biofuel

The shipping line – together with a number of its customers, the **H&M Group** being the first one – is trialling the use of biofuel instead of traditional bunker. The biofuel used in the pilot project has been the same blend of used cooking oil and heavy fuel oil validated earlier this year in a trial carried out together with the **Dutch Sustainability Growth Coalition** and **Shell**. The blend has been certified as sustainable fuel by the **International Sustainability & Carbon Certification** body. According to **Maersk**, the biofuel entails savings of 85% compared to traditional bunker (the calculation is based on the fuels' full lifecycles, incl. all emissions from upstream production and transportation). The so-called **Roundtable on Sustainable Biomaterials** will provide a procedure to ensure carbon savings are accredited to the carrier's customers appropriately. "The biofuel trial on board *Mette Maersk* has proven that decarbonized solutions for shipping can already be utilized today, both technically and operationally. While it is not yet an absolutely final solution, it is certainly part of the solution, and it can serve as a transition solution to reduce CO_2 emissions today," **Søren Toft**, COO, Maersk, said. **Helena Helmersson**, COO, the H&M Group, also commented, "Our high ambition to become climate positive by 2040 requires cooperation and engagement from all parties in the supply chain. We want to use our size to be a force for good and enable scaling innovative solutions, such as the carbon-neutral ocean product, for a greener commercial transport." To this Toft added, "We are so pleased to see a significant shift in sentiment and involvement from customers, fuel suppliers, equipment manufacturers, and competitors towards sustainable solutions."

Carnival connects to STM

After trialling the solutions developed by the **Sea Traffic Management** (STM) project on-board the ships of its **Costa** and **Aida** brands, the corporation's entire fleet is now using them. The goal of the STM initiative is to provide the shipping and port industries with a maritime digital infrastructure, thanks to which different actors can talk to each other using standardised formats and interfaces. **Costa Crociere**, part of the **Carnival Corporation**, has embedded STM solutions into its Neptune guidance system, a tool used by Carnival's Fleet Operations Centres to help monitor its global fleet. The new functionality not only allows Carnival to interact with other STM services, ports, and shore operators but also to evaluate the voyage optimisation suggestions received by shore centres through the maritime digital infrastructure. As part of the setup, Carnival ships share their voyage plan automatically with Vessel Traffic Services along the route. "With our Fleet Operation Centres we have further increased safety on-board our ships, and with STM we can use the solution to share voyage plans with all other STM enabled services such as route optimization and Vessel Traffic Services to create a shared situational awareness," **Franco Caraffi**, IT Director, **Carnival Maritime**, highlighted. **Björn Andreasson**, Testbed Manager, STM, added, "Carnival's advanced Fleet Operation Centre is a good example of how a proprietary eco-system can be connected to interact with external services via STM. Costa's contributions in bringing STM forward are most valuable to the project and to the maritime industry at large." The validation part of the STM project has intended to provide STM functionality to 300 ships. With the addition of the entire Carnival fleet, the figure has already reached almost 400 vessels.

Ghent and Xi'an – linked

Loaded with **Volvo** cars, the trains will run twice a week, departing in Europe from the **Interface Terminal Gent** located in **Kluizendok**. The first shipment consisting of 190 XC60s arrived from China on 4 July. The train took 180 XC90s, V90s, and V60s in the opposite direction. The Brussels-headquartered rail operator **Lineas** is responsible for exports from **Ghent**. Volvo has a car factory in the **Port of Ghent** (part of **North Sea Port** formed after the merger of the **Ghent Port Company** and **Zeeland Seaports**), which in 2018 produced a total of 200,396 cars.

Photo: North Sea Port

Tilbury-Grangemouth rail service

With the help of **Eddie Stobart**, a logistics provider, and the rail haulier **Direct Rail Services** (DRS), **Forth Ports**, a port management company headquartered in Edinburgh, has rail-linked two of its seaports. The first northbound set left **Tilbury** on Friday 28 June and arrived via **Daventry** in **Grangemouth** on Saturday. The service, able to take 36 container/trip, carries retail goods, food and drinks towards Scotland while returning with export products such as spirits, chemicals, and fresh food. "The service comes on the back of an increase in business at our busy container terminals and underpins our commitment to provide sustainable and cost-effective logistics solutions for our customers, aiding growth and competitiveness in the supply chain. This is the first time that a rail service truly links our ports in Tilbury and Grangemouth which opens up a number of import and export opportunities for our business and customers," **Stuart Wallace**, COO, Forth Ports, said. **John Clark**, Sector Director, Eddie Stobart, added, "Unlike many rail operators, our services are built in direct response to customer requirements – that's why we're introducing a new service that will link the Port of Tilbury to Grangemouth for the first time. We believe this will help to provide our customers with a cost-effective and sustainable means of moving goods between Southern England and Central Scotland."

Photo: Rawpixel

PORT OF ANTWERP:
119.6mt handled in H1 2019 (+0.7% yoy)

With 69.1mt (+4.3% year-on-year), the handlings of containerised freight topped the port's overall turnover in the first half of 2019.

The Port of Antwerp's volumes

	H1 2019	Yoy
Containerised	69.1mt	+4.3%
Liquids	36.0mt	-6.4%
Dry bulk	6.9mt	+8.7%
Break-bulk	4.9mt	-3.2%
Wheeled (ro-ro)	2.7mt	+0.9%
Total	**119.6mt**	**+0.7%**
Container traffic		
TEUs	5.84m	+4.9%

PORT OF TALLINN:
10.01mt handled in H1 2019 (-0.8% yoy)

The Estonian port's passenger traffic also noted a downtick – it went down in the reported period by 2.7% year-on-year to a total of 4.70m travellers.

The Port of Tallinn's volumes

	H1 2019	Yoy
Cargo traffic		
Liquids	4,045kt	-5.5%
Wheeled (ro-ro)	2,685kt	-1.6%
Dry bulk	1,957kt	+9.7%
Containerised	948kt	-0.3%
Break-bulk	374kt	+8.2%
Total	**10,009kt**	**-0.8%**
Container traffic		
TEUs	113,296	+4.0%
Passenger traffic		
Tallinn-Helsinki	3,968k	-1.4%
Tallinn-Stockholm	416k	-15.2%
Cruise	241k	-1.3%
Other	43k	+26.8%
Tallinn-St. Petersburg	28k	-11.7%
Total	**4,697k**	**-2.7%**

PORT OF DURRËS:
3.61mt handled in 2018 (-1.9% yoy)

On the other hand, the Albanian port's container traffic noted a double-digit increase last year – up by 13.7% year-on-year to a total of 134,526 TEUs.

The Port of Durrës' volumes

	2018	Yoy
Cargo traffic		
Imports	2,440.3kt	+4.2%
Exports	1,174.3kt	-12.5%
Total	**3,614.6kt**	**-1.9%**
Container traffic		
TEUs, out of which Exports Imports	134,526 67,386 67,140	+13.7% +14.4% +13.1%
Containerised	1,501.5kt	+1.4%
Passenger traffic		
Total	**854,637**	**-2.9%**
Pax cars in ferry traffic	256,061	-1.0%

PORT OF RIGA:
238,234 TEUs handled in H1 2019 (+5.6% yoy)

In terms of tonnage, containerised freight amounted in the reported period to a total of 2.43mt, noting an increase of 2.0% year-on-year. Overall, however, the Port of Riga's cargo traffic noted a drop by 8.3% yoy down to 16.16mt, including 10.06mt of dry bulk (-11.7% yoy), 4.19mt of general cargo (+2.2% yoy), and 1.91mt of liquids (-10.9% yoy). Fewer passengers went through Riga's quays, too. Out of the total of 389,359 guests (-1.6% yoy), ferry passengers accounted for 361,420 travellers (-1.6% yoy), while the remaining 27,939 (-0.4% yoy) came on-board cruise ships. Ferry cargo traffic contracted as well – by 13.2% yoy to 35,848 ro-ro cargo units. Yet, when measured in tonnes, wheeled cargo rose by 2.9% yoy up to 261.7kt.

PORT OF ROSTOV-ON-DON:
9.20mt handled in H1 2019 (-9% yoy)

Loading operations at the Russian seaport totalled 6.76mt (-9% year-on-year), followed by 2.20mt (-5% yoy) of transit cargo transhipment, and 238kt of unloading (-13% yoy). The total result consisted of 30% of oil products, 29% – grains, 15% – coal, and also 15% other dry bulk goods.

NORTH SEA PORT:

36.6mt handled in H1 2019 (+2% yoy)

The Belgian-Dutch venture, formed after the merger of the Ghent Port Company and Zeeland Seaports, hit its new half-year cargo throughput record. With 17.5mt (+9% year-on-year), dry bulk continues to dominate North Sea Port's volumes. In the first half of this year, it was followed by liquids (-4% yoy down to 10.4mt), break-bulk (-10% yoy to 5.6mt), wheeled cargo/ro-ro (-11% yoy to 1.7mt), and containerised freight (+81% yoy up to 1.2mt).

TALLINK:

4.56m ferry passengers served in H1 2019 (+1.2% yoy)

The Estonian line also carried more passenger vehicles, up by 3.9% on the result from H1 2018.

Tallink's volumes

Route	Q1 2019	Yoy	Q2 2019	Yoy	H1 2019	Yoy
Passengers						
Estonia-Finland	1,025,036	+2.8%	1,378,594	-0.5%	**2,403,630**	**+0.9%**
Finland-Sweden	522,945	-7.4%	760,584	-1.5%	**1,283,529**	**-4.0%**
Estonia-Sweden	227,279	+46.1%	279,699	+3.1%	**506,978**	**+18.8%**
Latvia-Sweden	155,189	+12.2%	212,449	-4.9%	**367,638**	**+1.6%**
Total	**1,930,449**	**+4.0%**	**2,631,326**	**-0.8%**	**4,561,775**	**+1.2%**
Ro-ro cargo units						
Estonia-Finland	58,376	-2.3%	64,538	+0.8%	**122,914**	**-0.7%**
Finland-Sweden	16,145	-17.9%	19,744	-0.4%	**35,889**	**-9.1%**
Estonia-Sweden	12,258	+27.2%	12,866	+11.7%	**25,124**	**+18.7%**
Latvia-Sweden	3,908	-3.5%	3,924	-6.9%	**7,832**	**-5.2%**
Total	**90,687**	**-2.6%**	**101,072**	**+1.5%**	**191,759**	**-0.5%**
Passenger cars						
Estonia-Finland	174,110	+1.5%	231,719	+3.7%	**405,829**	**+2.7%**
Finland-Sweden	18,219	-6.3%	42,548	-1.3%	**60,767**	**-2.8%**
Latvia-Sweden	15,545	+21.7%	19,084	+19.3%	**34,629**	**+20.4%**
Estonia-Sweden	14,496	+39.8%	17,989	+6.5%	**32,485**	**+19.1%**
Total	**222,370**	**+3.9%**	**311,340**	**+4.0%**	**533,710**	**+3.9%**

FINNLINES:

188k ro-ro cargo units carried in Q1 2019 (+0.5% yoy)

The shipping company also transported more vehicles (excl. pax cars in ferry traffic) in the reported period, up by 7.5% year-on-year to a total of 43k units. On the other hand, Finnlines' fleet carried less non-unitised freight, down by 5.6% yoy to 287kt, as well as fewer passengers, a downtick of 2.4% yoy to some 122k travellers.

PORT OF TURKU:

55,182 ro-ro cargo units handled in H1 2019 (+11.5% yoy)

The port's wheeled traffic was evenly distributed between imports (+16.4% year-on-year to 27,770 units) and exports (+6.9% yoy to 27,412). Overall, the Finnish port took care of 1,226.9kt in the reported period, up by 1.7% on the result from H1 2018. Out of this figure, international traffic totalled 1,187.4kt (+2.6% yoy), while the remaining 39.5kt (-18.2% yoy) was made domestically. More containers were moved over the port's quays, too, an increase by 22.4% yoy to a total of 2,068 TEUs. Passenger traffic rose as well, by 2.0% yoy up to 1,430,180 guests.

PORT OF KLAIPĖDA:

223,691 TEUs handled in Q1 2019 (+76.9% yoy)

Overall, the Lithuanian seaport took care of 11,965.9kt in the reported period, more by 9.5% on the result from Q1 2018. Alike container traffic, more ro-ro cargo units went through Klaipėda's quays, up by 6.4% year-on-year to a total of 48,840 trucks and trailers. Ferry passenger traffic advanced as well, by 8.3% yoy up to 65.2k guests.

PORT OF HAMBURG'S RAIL TRAFFIC:

12.5mt handled in Q1 2019 (+7.7% yoy)

Some 690k TEUs came in or left the port on-board a train over this year's first quarter, an increase of 13.6% on the result from Q1 2018. According to the Port of Hamburg Marketing, a total of 46mt is carried annually on the tracks of the Hamburg Port Railway. Rail-bound shipments account for 48.2% of the Port of Hamburg's overland freight traffic vs road's 41.4% and inland waterways' 10.2%.

RUSSIAN RAIL CONTAINER MARKET:

1.16m TEUs carried in Q1 2019 (+15.4% yoy)

The biggest increase of 28.9% year-on-year was noted in transit traffic, which includes the volumes transported via the New Silk Road, up to a total of 129.9k twenty-foot containers. However, the bulk of the containerised rail transports was made domestically – 479.1k TEUs (+11.2% yoy). Meanwhile, exports amounted to 306.4k TEUs (+10.7% yoy), while imports to 243.8k TEUs (+24.3% yoy).

ROSTERMINALUGOL:

11.6mt handled in H1 2019 (+6% yoy)

In June alone, the Ust-Luga-based coal export terminal shipped out 2.3mt, some 53% more than in the same month last year. Over 2019's first half, Rosterminalugol unloaded a total of 162,372 railcars, +11,560 units year-on-year. The share of 27t/axle railcars grew from 42% to 47%.

Short Stories

Photo: Pexels

LiUP® now also for mobile harbour cranes

During TOC Europe 2019, **Liebherr** presented a mobile harbour crane version of its in-house developed driver elevator, up-to-date available for the tower crane product line. The lift – powered by an electric lithium-ion battery motor, so no cables are necessary – is able to transport up to two persons or a payload of 200kg. The lift also features an energy recovery system which can recapture up to 40% of the energy when the lift is lowered. For safety measures, the stopping positions are monitored by three limit switches, a clamp brake reacts when the elevator starts moving too fast, and inductive sensors permanently check whether a guide rail is installed.

Photos: Liebherr

Hyster delivers at TOC Europe…

Photos: Hyster

The UK-based producer of material-handling equipment shared the progress made with its electric container handlers. Two laden container handlers and one reachstacker are currently in development at the **Hyster Big Truck Development Centre** in the Netherlands. The zero-emission machines incorporate electricity at high voltage as the main energy source to power fully-electric motors. The first electric **Hyster H1150HD-CH** is purely powered by a large lithium-ion battery, which is charged by a high-power, wireless fast charger. It will be used in the **Port of Los Angeles**. Hyster expects that the 'battery-only' approach will suit applications with a medium-duty cycle where there is suitable energy infrastructure and a strict charge management regime for opportunity charging. "It will not suit larger fleets due to the high demand on the electricity grid, or where multiple trucks are charged at the same time," **Willem Nieuwland**, Project Leader, **Hyster Europe**, explained. He added, "Managing peak power demand will be a complex challenge for some operations, which is where the fuel cell comes in." As such, the second electric container handler the company has developed also features a large lithium-ion battery but is re-charged by two on-board fuel cells during operation. According to Hyster Europe, this approach better suits the challenges of the test site at

Fenix Marine Services in the Port of Los Angeles and other heavy-duty terminal operations. “The use of hydrogen reduces planning complexity or charging. Continuous operation is possible as long as hydrogen is available from the on-board hydrogen tanks. Even where refilling is required, this is only expected to take around 15 minutes. Plus, the battery can also be charged during lunch and other breaks to minimise refuelling requirements further,” Nieuwland gave more details about the concept. Hyster Europe is also developing an electric reachstacker featuring hydrogen fuel cells for the **MSC Terminal Valencia**, as part of the **European Horizon 2020** programme and **H2Ports** project. “We have been amazed by the instant responsiveness of the electric container handler in testing. The accuracy and control of the lift and drive are even better than the IC [internal combustion] models, giving handling precision that we expect can only increase productivity further,” Nieuwland said. He added, “The energy recovery achieved by the

container handlers in the test is more than expected, largely due to the full flow hydraulic energy recovery. Energy consumption reductions of up to 15% are expected compared to trucks without these systems." The company also expects reduced vehicle maintenance costs thanks to the elimination of the engine, transmission, and other mechanical-driven components, with a potential return on investment achieved after three-to-four years when compared to IC models. The three projects are carried out in association with several partners and have received funding support, including from the **Fuel Cells and Hydrogen Joint Undertaking** (FCHJU) and the **California Air Resources Board** (CARB), which is partially funded by **California Climate Investments** (CCI), a statewide programme that puts billions of cap-and-trade dollars to work reducing greenhouse gas emissions, strengthening the economy, and improving public health and the environment, particularly in disadvantaged communities.

Next, to make the inspection process of an empty shipping container faster, Hyster Europe has introduced a spreader support device option for its empty container handlers. The company is also offering a lift truck with an attachment that can easily move a 40-foot container into a workshop with narrow doors, and then rotate it. "To help them remain competitive, in container inspection, maintenance and repair operations, the visual inspection of empty containers needs to be as efficient as possible," Chris van de Werdt, Product Strategy Manager EMEA Big Trucks, Hyster Europe, explained. By using the Hyster spreader support device, the spreader holding the container is firmly locked in place at the height of about one metre and eighty centimetres. At the touch of a button in the cab, the operator activates the support device which secures the spreader with mechanical locks from both sides of the mast. The mechanical locks prevent the spreader and container from dropping. Furthermore, the moment the spreader support device is extended, the operator cannot drive or move the truck until it is de-activated following the inspection. "A monitor indicates to the checker that the spreader is fixed and the container stabilised. Whether it is a dry container or the inspection of a reefer for food transportation or pharmaceuticals, this device helps significantly reduce the inspection time," van de Werdt wrapped up. The solution is available on models from the Hyster H8XM-EC6 – H11XM-ECD9 series of empty container handlers for the inspection of 20, 40, and 45-foot sea containers. Meanwhile, the company also developed a solution to lift containers from the 'short' end, enabling them to be easily and quickly moved into repair workshops. A special container rotator attachment fitted to a heavy-duty Hyster lift truck can lift a dry container or reefer into an indoor facility, with the doors just slightly wider than the front axle of the truck. Inside the workshop, the attachment allows the containers to be conveniently placed in a row ready for repair. After repair, the containers can be removed in any order regardless of their position in the row. "When engineers need to repair the roof or the bottom of a container, they normally have to work on top or underneath it. However, this attachment can rotate the container allowing them to work on these areas as if they were the side of the container, which is far more easily accessed. This makes repairs and maintenance easier and more efficient, helping to increase productivity and contributing to overall safety," van de Werdt said.

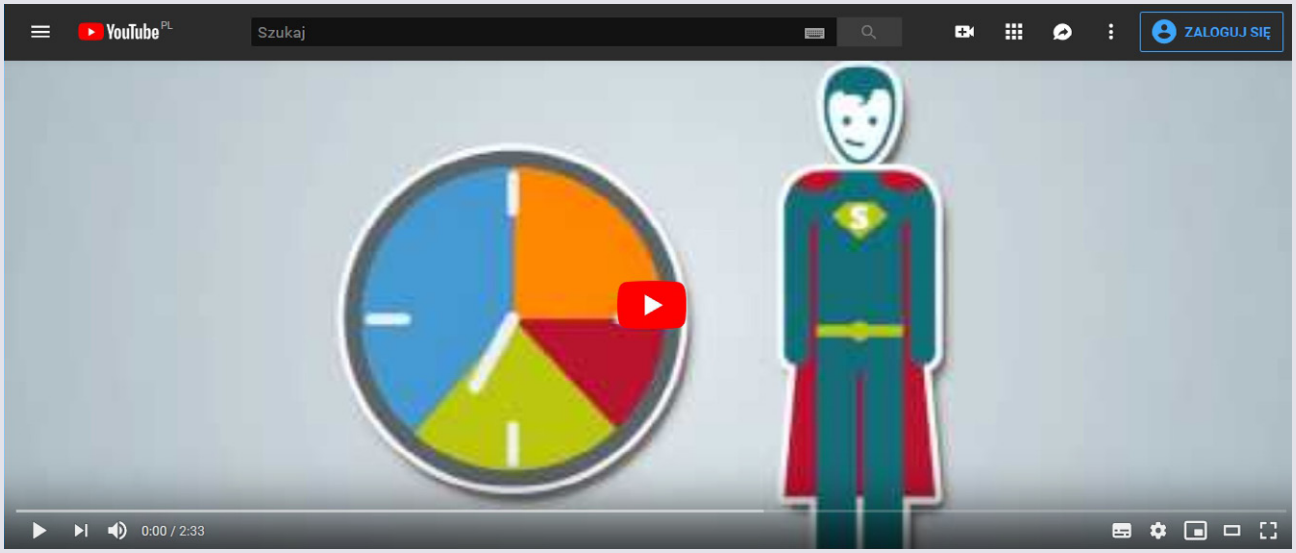
Last but not least, during TOC Europe 2019, Hyster Europe announced that its forthcoming Stage V compliant Big Truck range for European customers – lift trucks over 8.0ts, container handlers, and reachstackers – will be powered by Mercedes-Benz/MTU series 1000 and 1100 engines, with power ratings ranging from 129 to 280kW depending on the model and characterised by service intervals of 1,000 hours. "Our heavy industry and port customers in Europe who will require a Stage V driveline, can continue to expect highly efficient trucks with low fuel and DEF [diesel exhaust fluid] consumption, benefiting from high productivity levels and fast operations with the power available," Jan Willem van den Brand, Director Big Truck Product Strategy & Solutions, Hyster Europe, commented. He added, "Mercedes-Benz/MTU engines have a highly successful track record in both on-road and off-road applications such as forestry or agriculture. They are also particularly suited to intermittent applications like our business serves."

…so does INFORM…

The Aachen-headquartered provider of digital Artificial Intelligence-, fuzzy logic-, and machine learning-based decision-making tools showcased a number of recent developments. At the Munich 40k cabs/year-busy production site of **MAN Truck and Bus**, for instance, **INFORM** optimised the factory traffic – served by eight forklifts performing hundreds of material transports per day – by implementing its **SyncroTESS** software. "About ten years ago, we started to convert our cab production hall into an automated production facility, where many production steps are carried out with the help of robots. Until then, MAN organized not only purely manual production but also material supply without systemic support," **Patrick Thalmeyer**, Project Manager, MAN, shared the story behind the setup. He continued, "In the course of the changeover and the associated higher production volume, the introduction of an intelligent transport control system became indispensable for us. The deciding factor for choosing INFORM's software was the high flexibility with which the software could be adapted to the special logistical challenges of our production hall. Additionally, we have already had good experience with SyncroTESS at our Salzgitter site." In the production hall, all supply and disposal points are now connected to the system. As soon as the material is finished there, a robot automatically generates a corresponding message. "The special challenge here is that our robots do not send this message until three minutes before the vacancy. In order to avoid longer downtimes, the new material must arrive at the corresponding installation site within a few minutes," Thalmeyer explained. This message automatically triggers a transport order, which the INFORM software schedules in real-time within a few seconds. The system places the order with the most suitable forklift driver. SyncroTESS always takes the entire logistical situation in the production hall into account and considers criteria such as order priorities, distances and delivery dates, as well as the availability of transport aids and the capacity utilization of the forklifts. "In addition, some places in the hall are so narrow that only one forklift is allowed to drive in certain aisles. The software also takes this special requirement into account when allocating transport orders," Thalmeyer detailed. The forklift drivers receive their orders via radio data transmission on a touchscreen monitor. They use this to confirm both the start and the end of an order. "Thanks to the software, we know where which forklift is located at all times and with which material. In this way, we are not only able to organize our entire transport logistics efficiently and profitably, but we can also guarantee timely and secure supply of materials for production," Thalmeyer summed up.

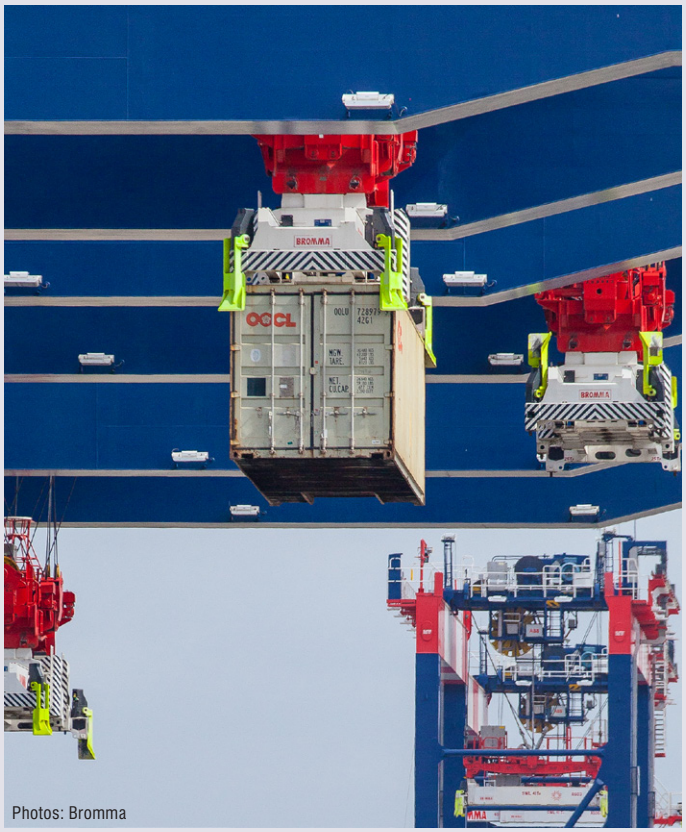
In order to connect the entire supply chain, the company developed the **SyncroSupply CENTRAL**. "Transparency, customer centricity and ever shorter delivery times – these demands can only be met by companies working together with their partners along the entire supply chain. With SyncroSupply CENTRAL, companies create a balance between digitization, service quality and competitiveness," **Matthias Wurst**, Head of Business Development Industry, INFORM, said. He further explained, "With our platform, each party has access to all relevant data and processes within the network at all times. This form of collaboration is essential today when it comes to ensuring an efficient and seamless supply chain." According to INFORM, the integrated solution puts companies in a position to control the whole material logistics process seamlessly. The system monitors end-to-end transparency in both delivery and incoming goods. This starts with time window management, which enables freight forwarders and suppliers to book slots for deliveries and pickups. Estimated time of arrival or information from the Global Positioning System can be made available via interfaces to many telematics or forwarding systems or via the Truck App. Because the system works in real-time, unplanned events can be accounted for, as the software calculates a new schedule at the delivery location within a few seconds. Features such as up- and download of freight documents, electronic delivery confirmation, and electronic damage reports simplify and accelerate the delivery process. Various IT systems can be easily connected via standard interfaces. Information can be shared with the partners on the platform or integrated into their own systems (e.g., booked time slots). This way, all material flows can be tracked from the order through loading and delivery. "The real-time access to all available information of all processes along the supply chain connects the platform participants. This creates an essential basis for future-oriented and efficient collaboration for all partners," Wurst underlined.

Having mentioned cooperation, INFORM entered into a partnership with the Swedish IT consulting company **ClearPoint**, who'll be responsible for sales and implementation of the **WorkforcePlus** software for workforce management in Sweden. "This year, we not only look back on five decades of optimization. The partnership with ClearPoint also points to the future. After all, the partnership agreement is an important step on the way to expanding our Workforce Management division," Dr **Jörg Herbers**, Head of Workforce Management, INFORM, emphasised. He added, "Sweden is a demanding market for workforce management systems because employee participation and social aspects, in general, play a very important role in the workplace. With ClearPoint, we have a solid foundation on which to build a mutually beneficial cooperation."



…as well as Bromma

First, the Swedish Singapore-headquartered (part of **Cargotec**) spreader manufacturer released **Hawkeye**, new spreader-based different configurations camera, prepared and validated for various applications and installation on all kinds of spreaders. “Cameras have over the past few years been installed and used in yard cranes and especially often in the gentle operation of automatic stacking cranes. Hawkeye stretches the application area of cameras significantly as the design and validation have been focused on the harsh environment of an STS [ship-to-shore] crane spreader. A significant part of the development of Hawkeye has been to identify how to mount cameras on a spreader. Protection of the cameras from impacts as well as methods for reduction of shock and vibration have been developed and verified,” the company wrote in a press release. The cameras generate video streams that can be used as-is on an operator display or further processed through additional applications, such as **Hawkeye Streaming** and **Hawkeye Optical Character Recognition** (OCR). The former makes it possible to transmit signal(s) to the crane cabin and display the stream(s) on a monitor for driver aid. A specific application of this is a centrally-mounted camera providing a real-time picture under the centre of a twin-lift spreader giving the driver additional help to see when two 20 foot containers are being lifted in twin-mode. Hawkeye



Photos: Bromma

OCR is, in turn, a spreader-based character recognition system for STS and yard spreaders. In addition to the cameras, the video signal is processed, so as to convert it to a character string to be sent to the crane cabin or other systems.

Second, **Bromma** introduced its brand-new cloud-based **Spreader Monitoring System** (SMS), developed to help clients understand the health of each spreader in their fleets through monitoring fleet data, and analysing performance and providing real-time dashboards with detailed information to operations and maintenance functions in the container terminal. Bromma SMS is available not only for all the spreaders manufactured by the company but also for other spreader brands. All new spreaders

that have been delivered over the past two years are already equipped with the needed communication hardware, whereas older units can be upgraded. “We are confident the information and functionality available in SMS will create great value for our customers. Predictive information will make it possible to fix potential problems before they become real problems. Specific diagnostic information is available, including recommendations on how to fix the problem. Service scheduling based on real spreader use make it possible to optimize maintenance planning,” **Joakim Heijbel**, Digitalization Officer, Bromma, explained. He also underlined, “We have spent months on interviewing customers and colleagues to make sure that we develop the right functionality and present it in the most user-friendly format. This product is developed with the starting point of the information consumer. Systems developed in the past have often started with the technology. Technology expectation may have been met in the past, but this time, we want to make the user experience expectation was the driving force in the system development.”

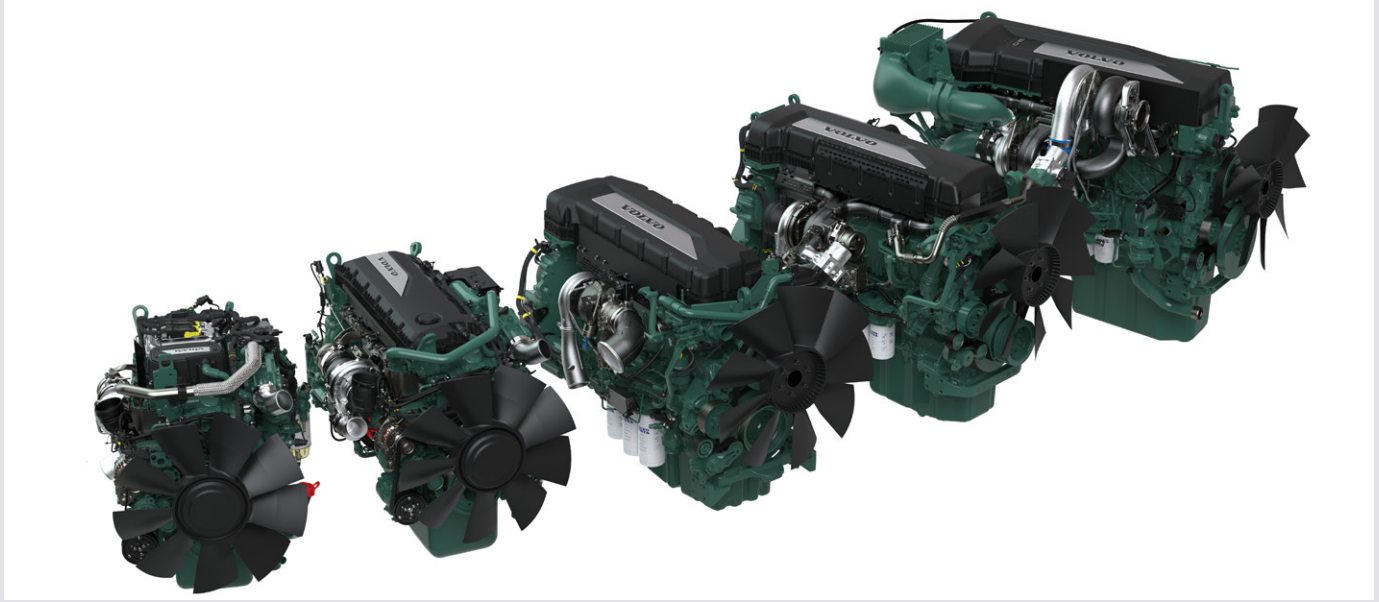
Finally, during TOC Europe, the company revealed the **Bromma Plus** line. For instance, the all-electric, single-lift, 45-foot telescoping yard care spreader **YSX45E** will feature in the Plus version the following additions: stronger telescoping and twistlock drives, higher safe working load (51t), extended warranty terms, and design prepared for the options specifically recommended for automatic yard crane spreaders (landed-hold, redundant telescoping position, auto lubrication, Hawkeye camera platform, etc.). “With the introduction of Bromma Plus and the first model YSX45E Plus, we are setting a new standard for the highest demanding applications and customers. Bromma Plus will provide our customers with the latest innovations and the additional things that you want in the highest demanding terminals and operations, automation being one of them,” **Alf-Gunnar Karlgren**, Vice President of Spreader Solutions, Bromma, highlighted.

Volvo Penta's e-terminal tractor

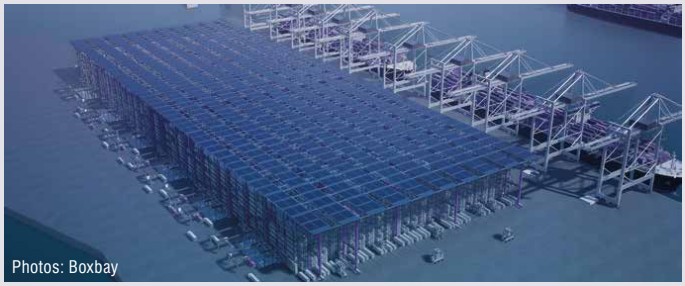
Photos: Volvo

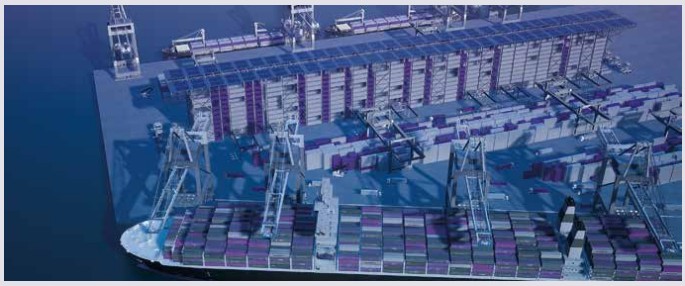
Featuring a **Volvo Penta** electric driveline and building upon **Volvo**'s bus & truck electromobility applications, the company presented what it says is an emission-free terminal tractor. "We strive for sustainable power solutions not only from an environmental standpoint but also from an economic one," **Peter Granqvist**, CTO, Volvo Penta, highlighted before adding, "We are seeing that certain electric applications are now reaching a point where they are providing a lower total cost of ownership than diesel engines. Material handling is a promising segment for electrification due to its high machine utilization and greater accessibility to charging. We, therefore, decided to create a proof of concept for this segment in order to implement market feedback into our development." Earlier this year it was announced that Volvo Penta will develop the electric powertrain in Austrian manufacturer **Rosenbauer**'s first industrialized electric fire truck as well as provide the propulsion system to Gothenburg's all-electric ferry. "Our approach going forward in the development will centre around close collaboration with OEMs [original equipment manufacturers] and operators; this is critical for success. With deep application knowledge, our solutions will be fit for purpose and adapted to customer needs. We take a full systems supplier approach, using our global aftermarket service network to take responsibility for the full system installation. This is how we will help our customers in the transition towards new, clean technology solutions," Granqvist added.

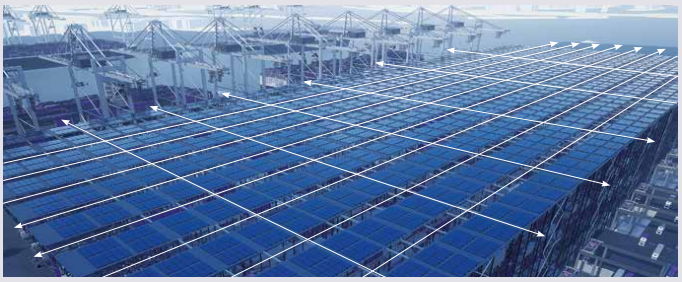
In addition, the company also presented its Stage V diesel engine range as well as the Exhaust Gas After Treatment System solution at the trade fair. Granqvist shared details about the former, "The Stage V engine range is a competitive solution, bringing value to OEMs and operators in the material handling segment. The range is optimized for customers' needs and offers ease of installation, operation and maintenance. Fuel consumption is reduced by up to 5% across the range (compared to the Stage IV engines). Passive regeneration has also been maximised, removing the need for stand-still regeneration."



800 boxes/hour

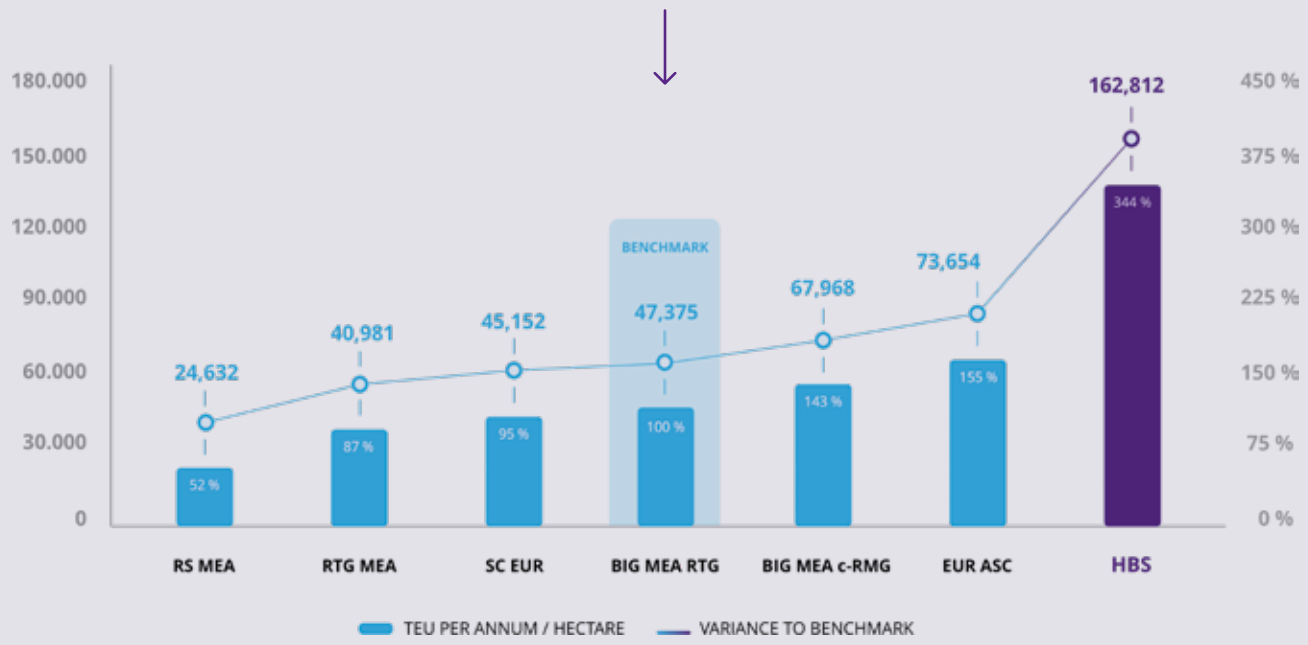

Photos: Boxbay



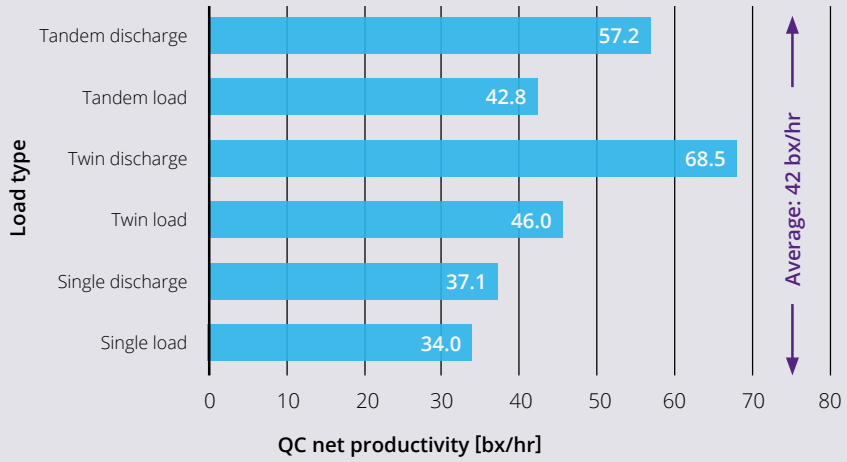


DP World, **Amova**, and **SMS** have formed the joint venture **BoxBay** in order to develop further the high bay storage (HBS) concept aimed at increasing the yard performance of container terminals. Under the HBS concept, each box is "suspended" on its own platform, which means the stacks can go up to 11-high and that every container can be accessed wherever it is in the stack without having to remove those boxes stacked on top of it. Specifically, the HBS concept has been designed to cater to the needs which follow the fundamental changes undergoing modern supply chains, driven largely by the explosive growth of e-commerce. "The expectation of end consumers as to when they receive their goods has changed; meanwhile manufacturing is happening in smaller

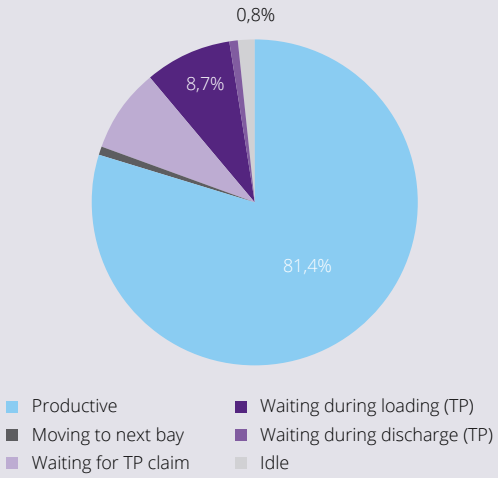
YARD CAPACITY OF ACTUAL SITES VERSUS HBS



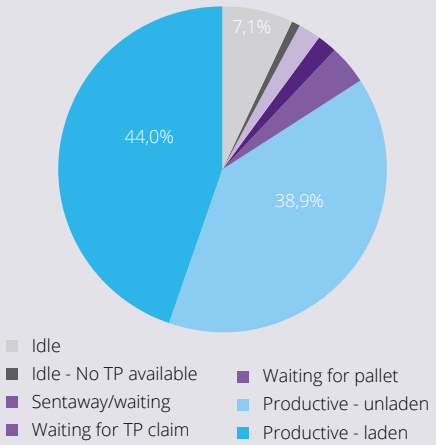
QUAY CRANE NET PRODUCTIVITY FOR DIFFERENT LOAD TYPES



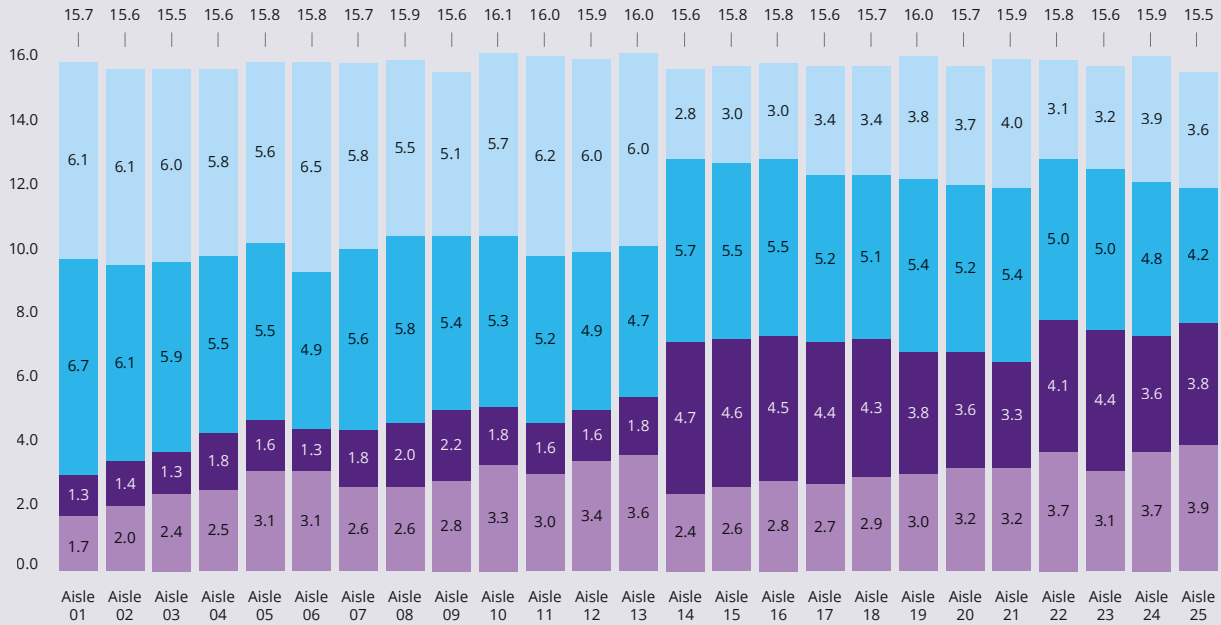
PRODUCTIVITY STATUS OF QUAY CRANES



PRODUCTIVITY STATUS OF HBS STACKER CRANES



STACKER CRANE MOVES (AISLE AVERAGE) PER HOUR









clusters, and we believe these two together mean that less-than-container load (LCL) shipments are going to grow dramatically – especially in regions such as Latin America and Africa, where it is very expensive to ship full-container loads (FCLs)," **Patrick Bol**, Director of Global Operations, DP World, explained. "We believe we can provide a 'supply chain compression' solution for that change, particularly for high-velocity cargoes such as electronics, apparel, automotive and furniture," he added. According to BoxBay, this would see the HBS yard block of containers connected directly to a series of LCL-intensive, automated distribution centres operated either by third-party logistics or major shippers that have technologically advanced logistics operations, thus compressing supply chains in both length and time. "For example, an empty container can be pulled from the HBS directly into an adjacent distribution centre for LCL stuffing, thereby cutting out two trucking legs," Bol pointed out. **Matthias Dobner**, Chief Executive, BoxBay, put the spotlight on another difficulty the container industry struggles with, "Globally DP World has a utilisation of around 78% so how to address expanding capacity? Could we expand the terminal area? Unlikely, as these are set by concessions. Can we increase the number of containers we stack? Probably not, because we would have to change all the equipment. We need to serve ULCV [ultra large container] vessels at around 500 containers per hour. But we are nowhere near this because of re-handling; we don't want to be re-handling containers, and under the HBS system we think we can go up to handling 800 boxes per hour."

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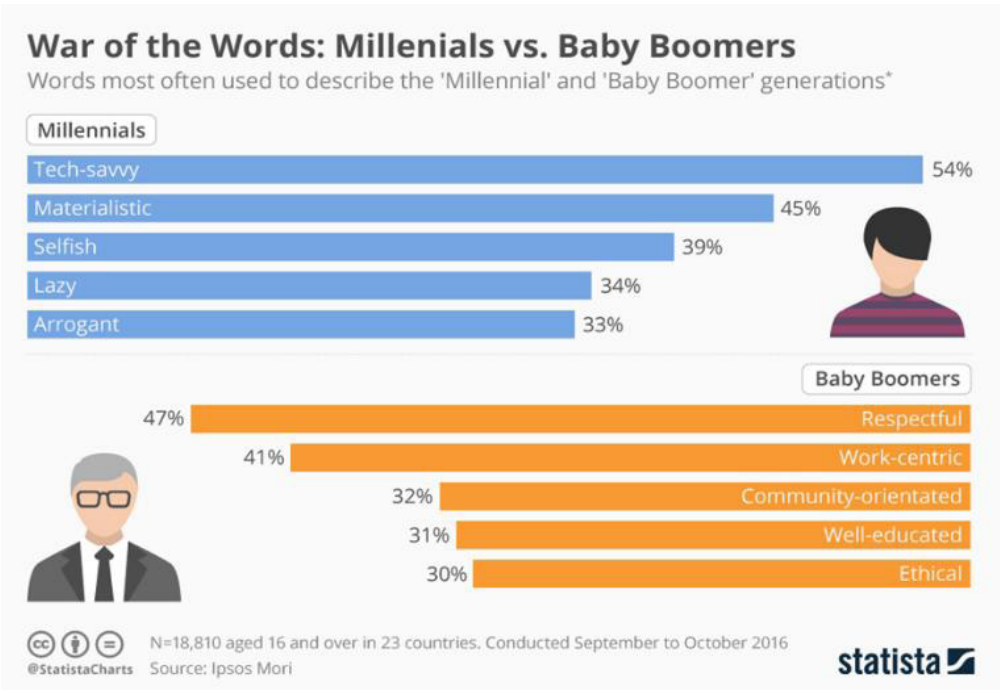
Millennials in Maritime

by **Matthew Wittemeier**, *Marketing & Sales, Logistics Division, INFORM*

Something different happened at TOC Europe this year, going mostly under the radar. A quick session on Wednesday (19/06) morning took place on the TECH TOC stage, and while it was only a brief, 75 minutes in duration, it was undoubtedly different from everything else that cropped up during the three-day event. The meeting, organised by INFORM and titled "Millennials in Maritime" (MiM), solely featured Millennial-aged panellists debating topics across four main categories: people, environment, industry, and technology. Challenged by the session's moderator, Dirk Schlemper of INFORM's Logistics Division (distinctly not a Millennial), many of the answers offered a unique perspective on our industry, its role in the broader global marketplace, and the role of Millennials therein.

"Millennials," "Generation Y," Digital Natives," "Generation Avocado Toast." These are just a few terms used to describe a group of people born between 1981 and 1996. Today, they are the largest generation on this planet, and, by 2025, they will make up 75% of the global workforce.

However, one only needs to take a look around to see that in our industry Millennials are underrepresented. Take, for example, the Tech Talk sessions at TOC Europe. Having gone through the list and counted the number of Millennial speakers across all three days (excl. our session), the number of Millennials was 7 vs. 65 Baby Boomers or Generation Xers. What's worse, many of these industry veterans are going to retire in the next decade, and we need to attract younger people to fill the gaps their retirements will create. In short, the Millennials are about to inherit the legacy of the Baby Boomers. But, is it the legacy that they would want?



What's extremely important, too, the MiM session looked beyond the stereotypes commonly held for Millennials – that they're materialistic, arrogant, lazy, and selfish people. Instead, it focused on their use of, impact on, and relation to other people, the environment, the transport & logistics industry, and finally, of course, technology, the tissue that binds these elements together.

The panel comprised six Millennials stemming from across the maritime industry. The aim was to build a representation that reflects the diversity of our industries' makeup. As such, the MiM team included Elliot Benjamin (Tideworks Technology, the Supplier perspective), Eslie Vrolijk (Royal HaskoningDHV, the Port Planner), Dr. Jennifer Sommer (HPC Hamburg Port Consulting, the IT Consultant), Anastassios Adamopoulos (Llyods List, the Journalist), Marius Waldum (Maersk, the Carrier), and Krzysztof Zaleweski (the Port of Gdańsk, the Port). Behind these six individuals was a range of backup panellists and other experts who also added tremendous value along the way. What follows is a series that offers a snapshot of the MiM session enriched with anecdotes and supporting interview content where appropriate. ■

CLICK THE IMAGES BELOW TO READ MORE ABOUT MILLENNIALS' APPROACH TOWARDS OTHER PEOPLE (ROUND 1), THE ENVIRONMENT (ROUND 2), THE TRANSPORT & LOGISTICS INDUSTRY (ROUND 3), AND TECHNOLOGY (ROUND 4), AS WELL AS THE "MILLENNIALS IN MARITIME" CLOSING THOUGHTS

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