

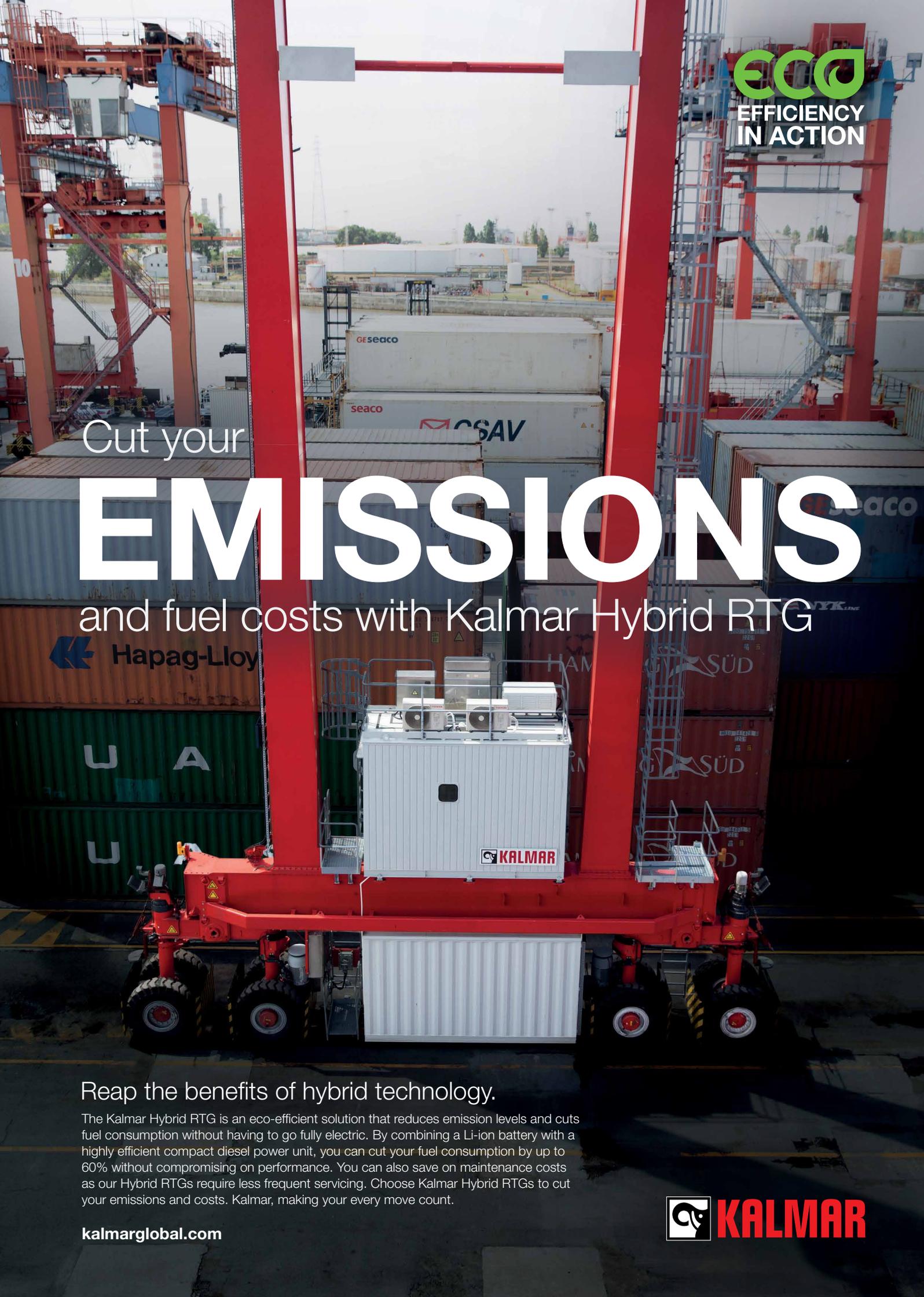


# THE E-JOURNAL OF PORTS AND TERMINALS

## EDITION HIGHLIGHTS

- RSGT driving Saudi Arabia's maritime evolution
- Digital release of containers at the Port of Antwerp
- ScanTairn: Using AI to identify container damage

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## FROM THE EDITOR

Port and container terminals' primary job is to move containers from ship to port and beyond as they keep the supply chain moving. Growing demand has seen many ports experiencing a surge in container throughput with many having experienced record-breaking months, despite the COVID-19 pandemic.

To stay up to date and ahead of the competition, ports across the globe are implementing digital solutions to ensure container handling operations are kept reliable. This includes tracking the movement of containers, digital documentation and inspection for damage.

In this edition of the Journal the Port of Antwerp provides an example of how it is turning to a digital solution for the release of containers, ultimately saving time in the movement of containers through the port.

Meanwhile, the Red Sea Gateway Terminal is using its long-term investment of \$1.7 billion to upgrade container handling and yard

infrastructure, among other things, as it looks to its TEU throughput growing to 8.8 million TEU.

The demand on ports has led to suppliers and vendors creating new solutions to enhance container handling operations. In this edition ScanTainr talks about the issues surrounding container damage as containers are moved multiple times throughout their journey and how AI can help identify damage in a more efficient way, reducing both financial and time costs.

The physical movement of containers is also a key consideration and EagleRail offers up its solution of a monorail track with electrified carriers to safely move containerised cargo.

At the very beginning of all these types of projects is an innovative idea, a new concept or a solution to a problem and the Port of Tyne is looking to generate such ideas through its innovation hub which celebrated its first anniversary in 2020.

**Beth Maundrill**  
Editor

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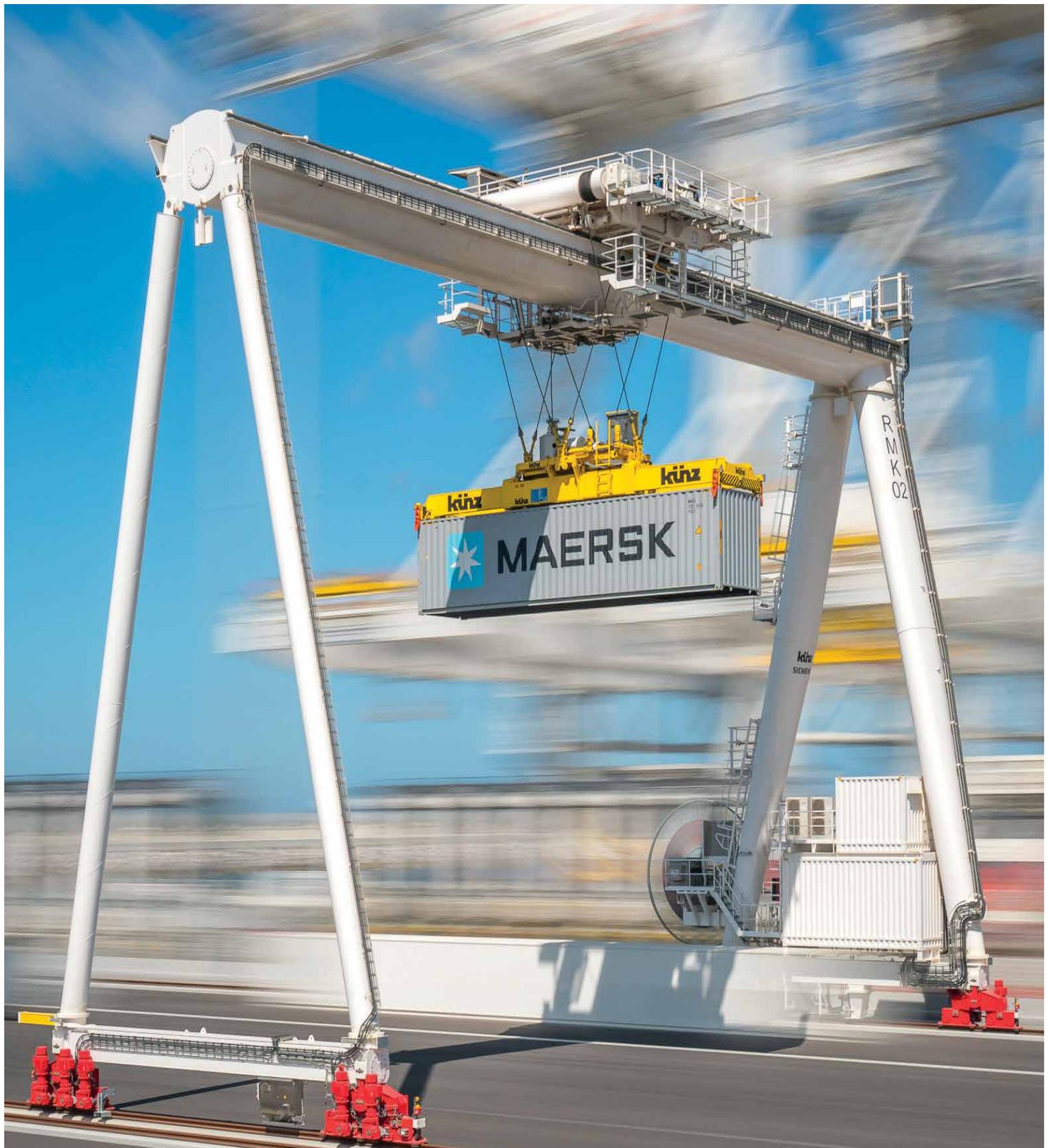
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# DIGITAL RELEASE OF CONTAINERS AT THE PORT OF ANTWERP



The Port of Antwerp has developed a new container release process based on the sharing of real-time information on a unique central data platform.

Originally unveiled in June 2020, Certified Pick Up (CPU) will be used operational on 1 January 2021 and replace the current system of PIN codes.

This new way of working will guarantee a secure, transparent and optimised release process for incoming containers, which will then leave the port by rail, barge or truck, the Port explained. The CPU assures that the right container is assigned to the right carrier.

## EVOLVING THE OPERATION

Today unique PIN codes are needed to pick up a container terminal in the port and the time between providing the PIN code to the shipping company and the driver entering this code at the terminal is considerable. The PIN code is also seen by multiple parties which increases the risk of abuse.

The CPU should make this process more secure and efficient as it is a neutral, central data platform which connects all stakeholders involved in the container import process.

The CPU platform works by receiving and processing container information to generate an encrypted digital key, with which the eventual carrier can pick up the container.

This digital key is only created when the final carrier is known. The time between the creation of the digital key and the collection of the container is therefore minimal.

It will also be possible to trace which parties were involved in the collection of the container. This allows the competent authorities such as customs and police to access the data exchanged and generated in CPU within the boundaries of their legal powers.

## ANTWERP AS A DIGITAL PORT

The CPU has been developed by the Port of Antwerp and NxPort, the logistics data platform for Port of Antwerp and subsidiary of Port of Antwerp port authority.

**NUMEROUS MEMBERS OF THE PORT COMMUNITY ARE NOW INVOLVED IN HOW TO FURTHER SHAPE THE CPU AND IMPLEMENT IT IN PHASES.**

“They have the specific digital and data expertise and are the best party to join us in this project,” a spokesperson for the Port told PTI.

NxtPort is a company that provides solutions to enable the sharing of existing data amongst port players. The NxtPort Data Utility Platform collects and pools data from various stages in the supply chain.

The CPU solution will be stored via Cloud computing and will be hosted on European servers. The application is subject to regular penetration testing, security audits and constant security monitoring.

NxtPort is also ISO 27001 compliant, which means that they meet the strict requirements for information security.

Connecting to the CPU will be completed via application programming interface (API). “This has the advantage that customers can use their own systems (TOS etc) to connect to CPU. For customers who do not want to connect their own systems there will be a user interface available,” the spokesperson explained.

Access to the CPU solution is initiated via C-point, the Port of Antwerp port community system. Companies must be registered to C-point to gain access.

It has also been explained by NextPort that while all parties involved in the container import flow will be prompted to give release information only two parties are considered to be data providers and these are the ship agents and terminals. These parties must give their approval before a container can be picked up.

The Port of Antwerp highlighted that the CPU has operational benefits for all logistics partners in the port chain. It simplifies administrative processes, allows employees to



work more securely and reduces the turnaround time of import containers in the port.

Numerous members of the port community are now involved in how to further shape the CPU and implement it in phases.

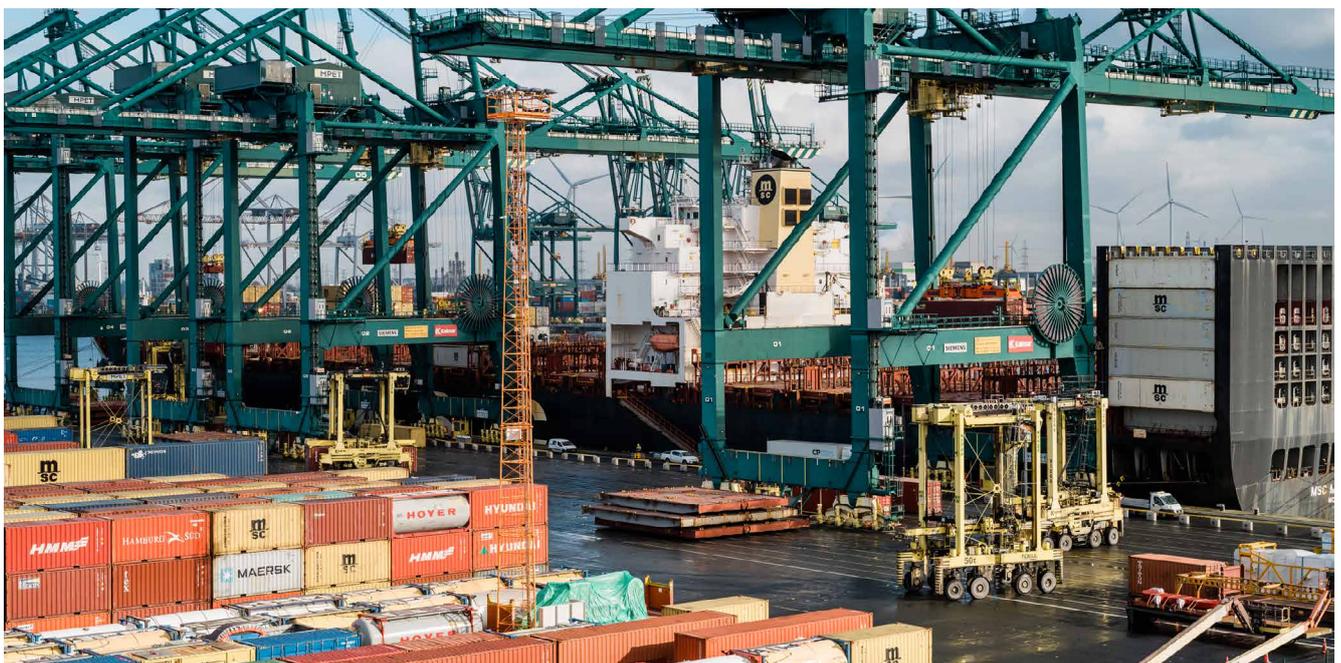
In the longer term, the CPU should allow the digital key to be eliminated. An identity-based security process with fingerprints or eye scans might be developed.

“We are focus on onboarding the shipping companies and agents, terminals, shippers, forwarders, logistics operators, truck companies, inland navigation and rail operators (all involved parties) at Port of Antwerp,” the spokesperson said.

“We are focusing on Antwerp locally – it’s too early to discuss this topic with other ports.”

*Written by Beth Maundrill*

**IN THE LONGER TERM, THE CPU SHOULD ALLOW THE DIGITAL KEY TO BE ELIMINATED.**





# RED SEA GATEWAY TERMINAL

## DRIVING SAUDI ARABIA'S MARITIME REVOLUTION



The Red Sea Gateway Terminal (RSGT) at the Jeddah Islamic Port (JIP) in Saudi Arabia is embarking on an advanced expansion project which will be a critical part of the country's long term maritime and economic strategy, including its Vision 2030.

Saudi Arabia has made strides in recent years to improve its maritime sector and utilise its wealth and strategic location on one of the world's busiest shipping lanes. Recent steps include joining TradeLens, the blockchain-based initiative that looks to make world trade more efficient.

Global trade is rising, and carriers are building larger fleets to meet the demand in trade and containerised goods. Ports also need to expand to keep up, and this means upgrading its container handling and yard infrastructure.

The world's container shipping lines now carry more than 11 billion tonnes of cargo a year and container movements at ports is estimated to have exceeded 800 million TEU.

"RSGT is now undertaking an expansion

programme which will incorporate, under a new 30-year concession agreement," an RSGT spokesperson told PTI.

The terminal's plans include the long-term investment of \$1.7 billion in infrastructure, equipment and technology, with an annual TEU throughput capacity growing to 8.8 million.

This is critical as the World Trade Organisation has estimated that total world merchandise exports surpassed \$19 trillion in 2018 and will continue to increase.

The growth is unrelenting, and global gross domestic product (GDP) could expand by 5.4% in 2021. Saudi Arabia alone will increase its GDP by 3.1% and these macro-economic trends have been "the key factors in the ongoing expansion of the port of the logistics industries," according to the spokesperson.

The RSGT's expansion is not limited to physical expansion but will also see investment in equipment and infrastructure, such as automation. These investments will im-

**"OUR GEOGRAPHIC  
POSITION BETWEEN  
KEY GLOBAL  
WATERWAYS MAKES  
THE KINGDOM OF  
SAUDI ARABIA AN  
EPICENTRE OF TRADE  
AND THE GATEWAY TO  
THE WORLD."**

prove safety and efficiency as volume increases and calls from ultra large container-erships (ULCS), which can carry more than 20,000 TEU, become more common.

For that reason, the RSGT has recently installed new ship-to-shore (STS) cranes, which the spokesperson said includes “advanced automation technology as a remote control, Optical Character Scanning capability, chassis alignment, and automatic landing systems, vessel profiling, gantry and trolley positioning systems, and intelligent status condition monitoring systems.”

Automation has been a matter for debate for the maritime industry for the better part of a generation, however RSGT insists it still has the potential to improve operations.

“We will continue to assess our operational needs as we continue to invest in the expansion of our Jeddah terminal facilities.

“For logistic hubs, where larger movements of containers onto and off of the vessels, including the ULCS 20,000 TEU class, are standard procedure. Automation is essential to limit the risk to terminal operations personnel, as more cargo is handled in smaller concentrated time periods.

“Improved efficiency and increased productivity are benefits of automation for container handling in the loading and unloading processes, as well as in yard operations.”

**ACCELERATING DIGITAL TRANSITIONS**

Ports are and have always been indispensable to the movement of goods and therefore critical to the wider global economy. The COVID-19 pandemic has made ports more important as vital supplies as they have had to handle vital supplies such as food and medicines.

The pandemic caused a shock to the supply chain in early 2020 as many nations entered lockdown. However, RSGT said the effect on its operations has been limited and in fact has served as a basis for accelerating digital and automated technology.

“RSGT has not been affected by any disruptions in service due to the COVID-19 global pandemic,” the spokesperson said.

“We in fact have accelerated our transition from face-to-face handling of paperwork to digital transmission, enabling our customers to access services such as Real-Time Container Status, Invoice Generation, Pre-pickup Tickets, Return Depot Details, Custom Seal Number Details, and Vessel Schedule remotely 24/7, to save time and contribute to reducing operational cost and decrease container port stay time.

“We continue to play a vital role in keeping the food, medicine, and other essential supplies flowing to the region. Other safety procedures have been put into place to assure the health and safety of all of our employees, on the quay, and in the offices.”

The pandemic has not only forced governments and authorities to explore the use of automated and smart technologies but has encouraged a reappraisal of the role of ports in the global economy, a trend which was already under way before.

Instead of being purely throughfares for trade, ports are increasingly being required to be hubs of innovation and collaboration for the whole supply chain and provide ways of transporting goods in the most efficient way.

**WORKING WITH PARTNERS**

One idea, known as port-centric logistics (PCL), sees ports in free zones house major national and international company’s distribution centres closer to the ports themselves. The RSGT is not alone in this and has sought to improve the speed of transporting goods from market to sea and back as quickly as possible. This requires ports and other supply chain partners to work closely together.

“RSGT, along with their sister company LogiPoint, Saudi Arabia’s first and the largest Bonded and Re-Export Zone (BRZ) at Jeddah

Islamic Port, are a good illustration of the close association between terminal operations and landside logistics services working together to provide seamless, integrated logistics solutions,” the spokesperson said.

“This is not only to help in cost reduction through faster, seamless operation; but also, to help streamline communication and to provide more transparency across the entire process.

“Ultimately, this enhances customer experience, leads to increased customer satisfaction and builds confidence amongst all the stakeholders.”

RSGT’s efforts to increase efficiency and become an attractive gateway are part of Saudi Arabia’s drive to upgrade its maritime industry, which is crucial to Vision 2030 a wider drive to diversify its economy through technological innovation.

According to the spokesperson, one of the three pillars of Vision 2030 is the transformation of Saudi Arabia’s strategic location into “a global hub connecting three continents, Asia, Europe and Africa”.

“Our geographic position between key global waterways makes the Kingdom of Saudi Arabia an epicentre of trade and the gateway to the world,” the spokesperson continued.

“As the Kingdom’s preeminent port and terminal facility, RSGT thus will play a primary role in the continued growth of Jeddah Islamic Port as a key component of the global logistics chain, as called for in this national undertaking.

“Over the past ten years, RSGT has significantly invested in, and upgraded equipment, technology, and personnel; our latest expansion goals will make RSGT, already the largest terminal on the Red Sea, the primary gateway for Saudi Arabia, as well as a central logistics hub for the Red Sea, East Africa and the Middle East.”

*Written by Max Schwerdtfeger*



**ABOUT THE ORGANIZATION**

Located at the Port of Jeddah, the Red Sea Gateway Terminal was established in 2009 as Saudi Arabia’s first private sector Build-Operate-Transfer project. Currently, with an annual container throughput capacity of 5.2 million TEUs, RSGT is providing world-class integrated logistics solutions, port operations in one of the world’s 40 busiest container ports and serves as an engine of growth for both local and regional economies.

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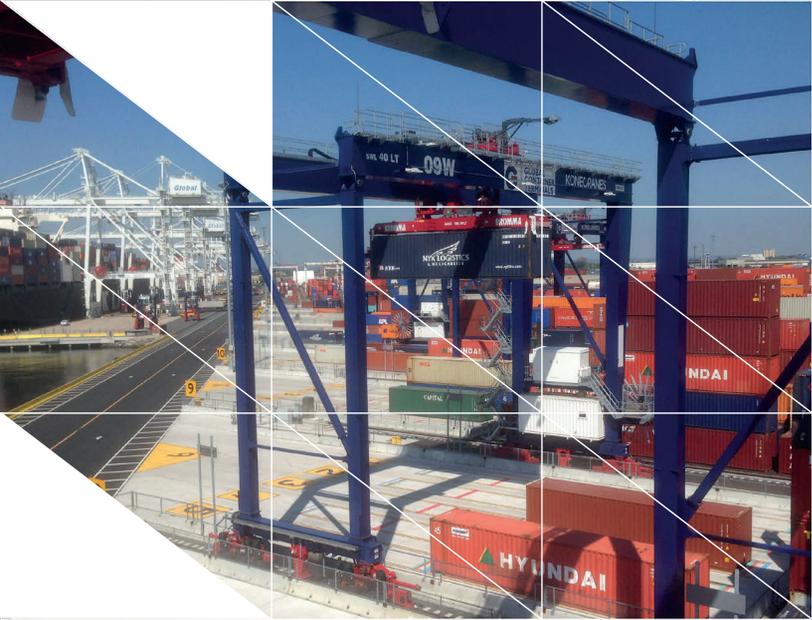
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# SCANNING FOR A SOLUTION

## USING AI TO IDENTIFY CONTAINER DAMAGE

Interview with Teddy Preststulen, CEO, ScanTainr

Shipping containers are handled hundreds and thousands of times throughout their journeys and come up against all types of weather, storms, tropical temperatures and frozen conditions.

All of this can lead to damage through weather, human error or machine malfunctions. There are also numerous cost implications when it comes to container equipment damage including the cost of detecting and logging damages, the cost of repairing damages, and the cost of managing claims due to damage incurred while a container was in a company's possession.

Speaking to Port Technology International Teddy Preststulen, CEO of ScanTainr, explains how the company looks to digitally analyse and identify ocean-going shipping container defects and damages.

### THE DAMAGING ISSUE

Because of the damage that a shipping container can be subject to throughout its jour-

ney it is important that regular and accurate inspections are carried out to assess the container grade and value, manage repairs, and manage liability and claims.

"These inspections are critical to ensuring that containers are stable and safe, especially aboard vessels," Preststulen explained. "The integrity of the container must be secure when it is weighed down by stacks of containers during the voyage. A faulty container at the bottom of a stack could result in costly damage to freight and containers in transport, as well as harm personnel onboard a vessel."

Preststulen said there are many challenges to container equipment inspection.

"The process of detecting and responding to equipment damage today is mainly manual and lacks standard inspection methods and processes. The current manual system is costly in time, manpower, footprint and is susceptible to significant human error.

"This lack of consistency and standardization can result in safety issues and conflict

between supply chain stakeholders in regard to liability and cost. Without the proper transparency, process standards and regular inspections there are too many things that can go wrong."

Regarding costs associated with container equipment damage Preststulen noted that accurately determining the associated costs is difficult. However, there are costs to be saved.

A Q4-2018 national survey of US logistics and transportation companies found that nearly 40% of companies have been asked to pay for container and/or trailer damage when they did not cause the damage and nearly 33% paid more than \$500 per incident. The likely costs are estimated at more than \$1 billion in the US annually. Over 60% of respondents said they paid the claim because they didn't have documentation that proved they weren't responsible.

Painting a picture of the consequential time and costs associated with inspections Preststulen noted that a recent industry

challenge proposal looked at the labour, infrastructure and systems costs associated with equipment inspections at depots and terminals. The Container Depot Association (Singapore) (CDAS) sponsored the research.

They found that 3-5 surveyors are deployed to an average depot with an average daily throughput of 100-200 containers. The depots reviewed have a relatively high standard with handheld devices and covered inspection bays which increase efficiency. Along with this high-level view, the proposal specified that the “time taken to inspect each container may range from 5 to 10 mins (no defects), 20 minutes (minor defects) and up to around 40 minutes (serious defects).

**SOLVING THE PROBLEM**

ScanTainr is a solution that has been developed by Mavisoft, an Artificial Intelligence (AI) research company based in Rotterdam that develops machine vision software products for damage detection and surveying. Mavisoft’s technology detects damages and defects in concrete and metal.

“The first commercialisation of this technology was through a product called Infrascan, an industrial surveying tool. Mavisoft has since partnered with major drone operators to deliver this solution to clients including the Port of Antwerp and the Port of Rotterdam,” Preststulen explained.

ScanTainr is the second realisation of the AI and image-based optical character recognition (OCR) technology from Mavisoft, which digitally identifies and analyses ocean-going shipping container defects and damages.

Damages are classified based on size, severity, and location and then reported to port and terminal operations, or any other designated stakeholders. The report includes an estimated repair time and overall cost. Operated locally or as software-as-a-service (SaaS), ScanTainr generates comprehensive damage reports according to ISO CEDEX regime for dry, tank, and reefer (refrigerated) containers.

Preststulen highlighted that in 2019, ScanTainr was validated by the PortXL Antwerp port and maritime accelerator.

“PortXL brings together port and maritime tech scale-ups, start-ups, corporate partners and mentors interested in collaborating to disrupt the status quo. At PortXL, ScanTainr quickly rose to the top, ultimately graduating from the program. As part of Mavisoft, ScanTainr benefits from Mavisoft’s strong development team that’s constantly enhancing the software with additional features,” he said.

“Whether augmenting or replacing traditional container inspections, ScanTainr technology will help address the challenges with a consistent, transparent and more accurate digital process,” Preststulen explained.



With the adoption of a digital container inspection framework, improvements will be seen in these areas:

- Claims and liability management
- Repair and maintenance
- Repair resource allocation
- The accuracy, accountability and throughput of equipment damage and detection
- Container damage reporting accuracy
- Shippers will have a better customer experience
- Timely comprehensive digital damage reports generated in under 3 seconds

“Overall, ScanTainr levels the playing field for all container supply chain stakeholders with a fairer, more transparent system for review and allocation of damage costs,” Preststulen said.

**LOOKING AHEAD**

“We have seen a very positive reception to ScanTainr by the industry. Automating damage detection has major benefits in cost, safety, throughput, accuracy, and visibility. In addition to the great benefits of fully automating container inspections, we are also seeing companies interested in augmenting their current inspection process. Optimising the in-person workforce is very valuable, especially during the COVID-19 pandemic,” Preststulen said.

“Another reason we’re seeing significant interest is due to the robust integration capabilities of ScanTainr. It easily integrates with existing container handling software at a port or depot, for example, to streamline and enhance workflow communication so the necessary steps are taken to repair a damaged container or take it out of service,” he added.

Ultimately as the shipping industry moves towards a new generation of digitalisation it is likely that a part of that shift will be towards the automatic inspection

of containers at multiple points along the logistics chain.

“In the long run, ScanTainr will help companies inspect containers for repair and liability, but it will also collect immense amounts of data to improve their businesses. It will optimize workforce operations and increase safety, but it will also show accurate asset value across thousands of containers.

“It will increase throughput while decreasing footprint, but it will also help automate further processes and communication between stakeholders. ScanTainr represents a bridge between the physical world of containers and the datasets that will guide decisions in the rapidly approaching digital shipping industry,” Preststulen concluded.

**ABOUT THE ORGANIZATION**

Mavisoft is an Artificial Intelligence (AI) research company developing novel approaches to damage detection. As a young team of experts, Mavisoft is able to rapidly create cutting-edge tools to serve their customers. Mavisoft’s mission is to build a more efficient and data-driven world through widespread use of their technology.

**ABOUT THE INTERVIEWEE**

Theodor Preststulen is a disruptor; he identifies opportunities and creates clever solutions built on novel technologies. Teddy’s career has seen him in Silicon Valley, Singapore, and Rotterdam, which has given him insight into large industrial problems. Mavisoft, the second company he has founded, is automating a problem faced for centuries, detecting damage.



# ADVANCED FIXED GUIDEWAY SYSTEM FOR TRANSPORTING SHIPPING CONTAINERS

Kevin Russell, Senior VP Port Engineering, EagleRail

Transportation of shipping containers to and from marine container terminal typically relies on diesel powered trucks. For many terminals around the world the volume of trucks entering and exiting the terminal has been increasing with the growing demand for container shipping.

This increase of truck volumes leads to congestion on roadways near the terminal. In addition to the roadway congestion, the trucks are sources of noise and air pollution.

Most of the containers are shuttled for a short haul of 10km or less between the terminal and warehouse, rail ramp, or other destination. Often this destination is the same general area for a significant percent of the containers being transported to and from the terminal.

This causes the challenges of truck transportation to be focused on local roadways near the ports that may be at rated capacity.

### ALTERNATIVE SOLUTIONS

Several Fixed Guideway Systems that have been proposed as alternatives for transport containers at marine terminals. These include: Conventional train railroad with diesel engines locomotive; Conventional train railroad with electrified locomotive; Linear Synchronous Motor placed on conventional railroad tracks; Magnetic Levitation cars on elevated track; and Monorail track with Electrified container carriers.

A conventional train railroad system is one type of Fixed Guideway System used at many terminals. Conventional train

**“THE EAGLERAIL ELEVATED MONORAIL TRACK ALLOWS THE CARRIERS TO MOVE OVER TOP OF EXISTING ROADS.”**

railroad with electrified locomotive is a significant improvement of the noise and pollution emitted compared with diesel locomotive. These typically have 50 to 100 rail cars being parked at the terminal with containers being unloaded then the next set of containers loaded onto the rail cars. The rail cars are then transported out of the terminal with a locomotive. These systems usually have the track placed on the ground which may have intersections with existing roads. The capital and operating costs of the conventional railroad system are normally based on long haul, more than 100km, transport of the containers, not for the short haul transportation.

Linear Synchronous Motor on conventional track systems have been proposed by a few companies. The technology uses permanent magnets mount on the carriers and electromagnets on the guideway. The guideway propulsion system is complex especially when multiple carriers are operating on the track system.

Magnetic Levitation cars on elevated track has been considered. Magnets on the cars and track are used lift the cars instead of wheels. Linear Synchronous Motor is used for propulsion. These systems have been built for people transportation in a few cities. The systems have been designed for high speeds and long distance (>25km) between stopping points.

**THE MONORAIL SOLUTION**

Monorail track with electrified carriers is a system proposed by EagleRail Container Logistics. The track is an elevated monorail design with the carriers suspended below the track. The carriers are individually propelled by electric motor mounted on the wheels. Each carrier is fully automatic

operation being with loading a container, transport container to its destination then unloading the container.

The EagleRail elevated monorail track allows the carriers to move over top of existing roads. The traffic on the existing roads does not impact the carrier's movements. The elevated track can also be placed over waterways, railways, and other utility right of ways. The monorail design allows for smaller radius curves to fit the track within existing infrastructure.

The EagleRail carriers operate independent of each other allowing each container to be transported in optimal time. This is compared to a system with a train of cars that requires many cars to be loaded prior to the complete train moving.

The carriers have sensors mounted to avoid obstructions and other carriers. An automated master control center controls the total system operation with monitors for occasional human intervention. The master control center interfaces with the Terminal Operating Systems for smooth transiting of containers.

After being involved in the port automation and port-efficiency space for the past 25 years, I realised that without making the repetitive short-haul container intermodal movement also more efficient outside of the port gate, the investment returns on just improving port processes is becoming greatly diminished.

Of all of the systems I have mentioned above and studied, I believe that overhead, automated and electrified suspended monorail with individual container movement the best choice when considering cost, speed, efficiencies, ease of hand-off, safety, cleanliness and the smallest footprint that can also pass over other infrastructure and topographical challenges.

**ABOUT THE AUTHOR**

Kevin Russell has over 40 years of industrial control and automation systems experience as an engineer and executive manager. Previous to EagleRail, Kevin was General Manager of a global Fortune 500 business that provided automation, power drives and motors as electrical control systems for shipping container handling equipment, including cranes and AGVs.

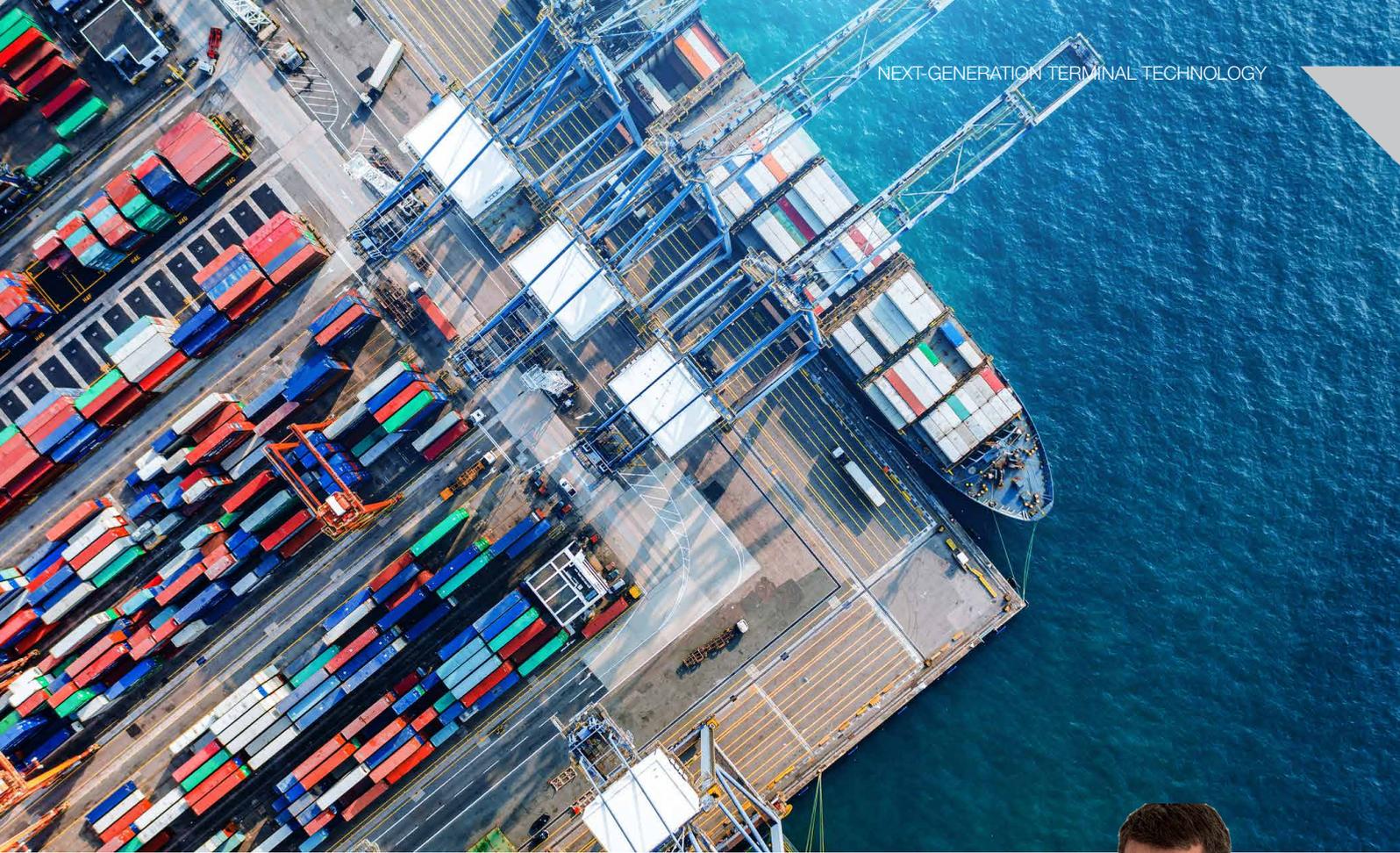
At EagleRail, Kevin is responsible for mechanical and electrical engineering including the control system of the EagleRail technology. Kevin manages the EagleRail system simulation

programming implemented with FlexSim and has filed patent applications for several major components of the EagleRail system.

**ABOUT THE ORGANIZATION**

EagleRail is both a custom technical-solutions provider as well as long-term operating partners. EagleRail can integrate into unique business models with specifically designed CAPEX solutions, and/or can partner with customer operations in a variety of OPEX models to alleviate container congestion on a unitary basis. EagleRail understands regional PPP models and can assist with project financing. Localised partnerships assure proper legal and regulatory compliance in all markets, and in-market supply-chain and resourcing, as well as job creation, are two of our most important core business values.





# PORT COMMUNITY SYSTEMS

## SURGING DEMAND

Interview with Richard Morton, Secretary General, International Port Community System Association (IPCSA)



Port Community Systems (PCS) are in high demand. This was one of the key talking points of a recent Port Technology International Webinar which explored how to provide real-time, digital information with PCS.

The events of 2020 and the ongoing pandemic have been an eyeopener for ports and the need for the electronic distribution of data is more imperative now than it has ever been.

In an effort to give ports the best tools to integrate PCS into their operations IP-CSA, which launched in 2011 as the European Port Community Systems Association (EPCSA), provides its members with practical information, activities, projects, advice and guidance.

Following the webinar Richard Morton, Secretary General, IPCSA, described some of the association's key aims, latest developments and issues it is dealing with today.

### UNIQUE APPROACH

This mission of IPCSA is to act in the common interest of IPCSA members to influence public policy at the international level, in order to promote the electronic exchange of information to enable seamless and efficient trade logistics processes.

Since its inauguration in 2011 under the name EPCSA the now international association, IPCSA, has gained Non-Governmental Organization with Consultative Status at the United Nations and the International Maritime Organization.

"The success of the association is down to its members and their commitment to supporting the wider community with the electronic exchange of information and as IPCSA we consider that we have to adapt and change constantly as an association in order to effectively represent our members at national, regional and international level," Morton explained.

"We always consider that in order to stay the same, you have to change. We maintain that philosophy through activities, and it

allows us the flexibility to be adaptable to change needs," he said.

The association itself tries to stay away from political statements and focusses on the exchange of information between its members.

Morton said that unlike many other associations IPCSA considers the whole community. "As our members are community organisations and as such, we have to consider not just our direct members but their users as part of this 'Community of Communities'."

"As an association we look towards the whole process flow of information in the supply chain from Exporter to importer and all the transport operators in between. Thus, we have to act neutrally in our activities to ensure that the association and consequently our members are considered neutral and trusted third parties."

### IMPORTANCE IN INITIATIVES

As already noted, IPCSA focuses on activities and initiatives. Morton explained, "We split this into different themes which cover our own IPCSA initiatives which we under-

To watch the webinar [CLICK HERE](#)

take for the benefit of our members or those initiatives, which may also be, related to policy developments, standards and other themes which are considered of interest or value to IPCSA members.”

#### *IPCSA Initiatives*

- PROTECT: The Port Message Design Group was integrated into IPCSA in January 2020 and aims to take this beyond the European participants to more of the IPCSA members outside Europe.
- Currently involved in multiple United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) projects including updating dangerous goods message IFTDG and IMO Mapping.
- IPCSA Bill of Lading Initiative: Led by Israel Ports to develop a Proof of Concept and text blockchain technology in the exchange of Bills of Lading between all parties.
- Network of Trusted Networks: Port of Port and Cross Border enabling platform simplifying Cross Border Agreements and fee negotiations, whilst using standard API IPCSA develops for its members to exchange data.

- PCS for small and medium sized ports: Guidance for small and medium sized ports, and how they should firstly consider and then how to develop a PCS.
- PCS Development: Supporting ports, funding authorities and other organisations in “How to Develop PCS” and sharing international experience.

IPCSA is also involved in other international initiatives such supporting and leading on the development of different standards with the UN/CEFACT.

In addition, IPCSA is actively taking part in the EU Expert groups for the implementation of the European Maritime Single Window Environment (EMSWe), including taking part in discussions on interfaces, data elements and the creation of new EU wide databases.

Finally, with customs a critical element of many of the IPCSA members activities the group is working on EU Union Customs Code (UCC) implementation including ICS2, Single Window and transit is vital as they form part of the logistics flow of information thus we actively participate in many EU Customs meetings.

#### **NETWORK OF TRUSTED NETWORKS**

On 1 July 2020 IPCSA launched its Network of Trusted Networks (NoTN) with the purpose of providing predictability, visibility and certainty within the supply chain.

The NoTN is a new, secure port-to-port and cross-border data exchange solution. At the time of launch, IPCSA noted that when it comes to providing this kind of cross-border solution, others have tried to deliver such a concept – but the key stumbling block has always been trust.

The priority for the NoTN is to respond to the requirement of consumers and logistics companies for real-time, end-to-end information on their shipments.

The launch consisted of commitment from 16 members covering 73 seaports and nine airports to share and exchange data through the IPCSA NoTN.

July and August have seen the on-boarding of these members and the first APIs have been finalised, these include for real-time Portcall information and real-time shipment information and status.

“PCS and Single Window operators are in a unique position that enables them to have real-time data and share that, within the bounds of commercial confidentiality with other interested parties,” Morton said.

“Collaboration between PCS is a fundamental requirement if transparency throughout the whole supply chain is to be successfully achieved.”

Morton noted that the industry faces several challenges as it moves towards its demanding digital age.

“Collaboration, there is lots of talk and very little of it is true. Too much theory and not enough practice. Everyone talks about collaboration, but true collaboration comes with trust and time,” he said.

On standards and harmonisation, he said that standards organisations need to truly work closer together and agree harmonisation of standards in order to provide choice to the trade.

Finally, he noted that neutrality is crucial for the supply chain data exchanges to work and it is important that those sharing data know what the data is being shared for and with whom, and that that data is not then commercialised for other reasons without explicit agreement.



**“COLLABORATION BETWEEN PCS IS A FUNDAMENTAL REQUIREMENT IF TRANSPARENCY THROUGHOUT THE WHOLE SUPPLY CHAIN IS TO BE SUCCESSFULLY ACHIEVED.”**



# PORT OF TYNE

## A HUB FOR INNOVATION

PORT  
of  
TYNE

In July 2019, the Port of Tyne in the UK inaugurated the Maritime 2050 Innovation Hub. The initiative will see the involved partners collaborate to develop solutions to the technological challenges facing the maritime sector and the wider logistics industry both nationally and globally.

As to what the focus is for the hub, Dr Jo North, Technology & Transformation Director, Port of Tyne explained, "In broad terms we are looking at any innovative or disruptive technologies that can help take the sector forward towards its Maritime 2050 targets."

The Maritime 2050 Strategy is a UK Government strategy which sets out the government's ambitions for the future of the British maritime sector.

"As part of our innovation sprints and workshops we have identified some specific challenge statements. These are to achieve operational efficiency through technology and automation, improve supply chain integration and hinterland connectivity, commit to a zero harm policy using the broadest possible interpretation and to work towards full decarbonisation, following the best practice principles of the circular economy."

Alongside the Port of Tyne the Innovation

Hub will see contribution from PD Ports, Nissan, Connected Places Catapult, Accenture, Royal HaskoningDHV and Ubisoft.

The learnings from the Innovation Hub are not just for the UK either.

"The Port of Tyne is currently working closely with several ports, nationally, European and worldwide. We are exploring ways of working collaboratively together and to learn from each other," North explained.

"The 2050 Innovation Hub is looking to promote an open approach to innovation, and we would be willing to share our knowledge, data, experiences and expertise with other like-minded organisations for the benefit of all."

As with all ports, competitiveness is a key factor, and ports in the North of the UK need to collaborate with manufacturers and technology partners in order to increase their global competitiveness.

At the moment the Port of Tyne is the UK's second largest car exporting port and handles 40% of the UK's raw team imports.

### WORKING WITH GOVERNMENT

As mentioned, the UK Government Department of Transport has its Maritime 2050

strategy within which it states a desire to establish a Maritime Innovation Hub by 2030.

"The Port of Tyne responded immediately, by opening ours within six months," North said.

"Just like Maritime 2050, the Hub's objective is to work towards the greater good of the UK maritime industry, by utilising collaborative thinking from cross sector organisations to stimulate innovation and help promote the UK as a world leader in Maritime."

"The Port of Tyne has developed its own 30-year plan, Tyne 2050, which is also aligned to Maritime 2050. These integrated project work streams will run alongside the work undertaken by the hub and help to deliver mutual benefits to the Port of Tyne and the wider port community."

As well as the UK Government the Port is also working with its industry partners to provide specialist knowledge to the Hub.

"We intentionally looked beyond the maritime sector when we approached partners for the 2050 Innovation Hub. The organisations and individuals involved all share a common vision to make a real difference to the maritime element of the UK's critical national infrastructure and to help the sec-

tor and UK in general to thrive,” North explained. “Our partners also bring a wealth of experience in the development of new solutions and bringing them to market.”

**BRINGING INDUSTRY AND INNOVATION TOGETHER**

Since its inauguration, the 2050 Maritime Innovation Hub has hosted over 20 events, and as with millions of others moved online during COVID-19. The Hub had welcomed over 1,500 attendees from over 200 companies to its events.

“All of our delegates have given up their time and energy for the greater good and enhancement of the UK maritime sector. One of our achievements was the UK’s first maritime hackathon, which included a dozen teams working towards a common minimum viable product (MVP) statement,” North explained.

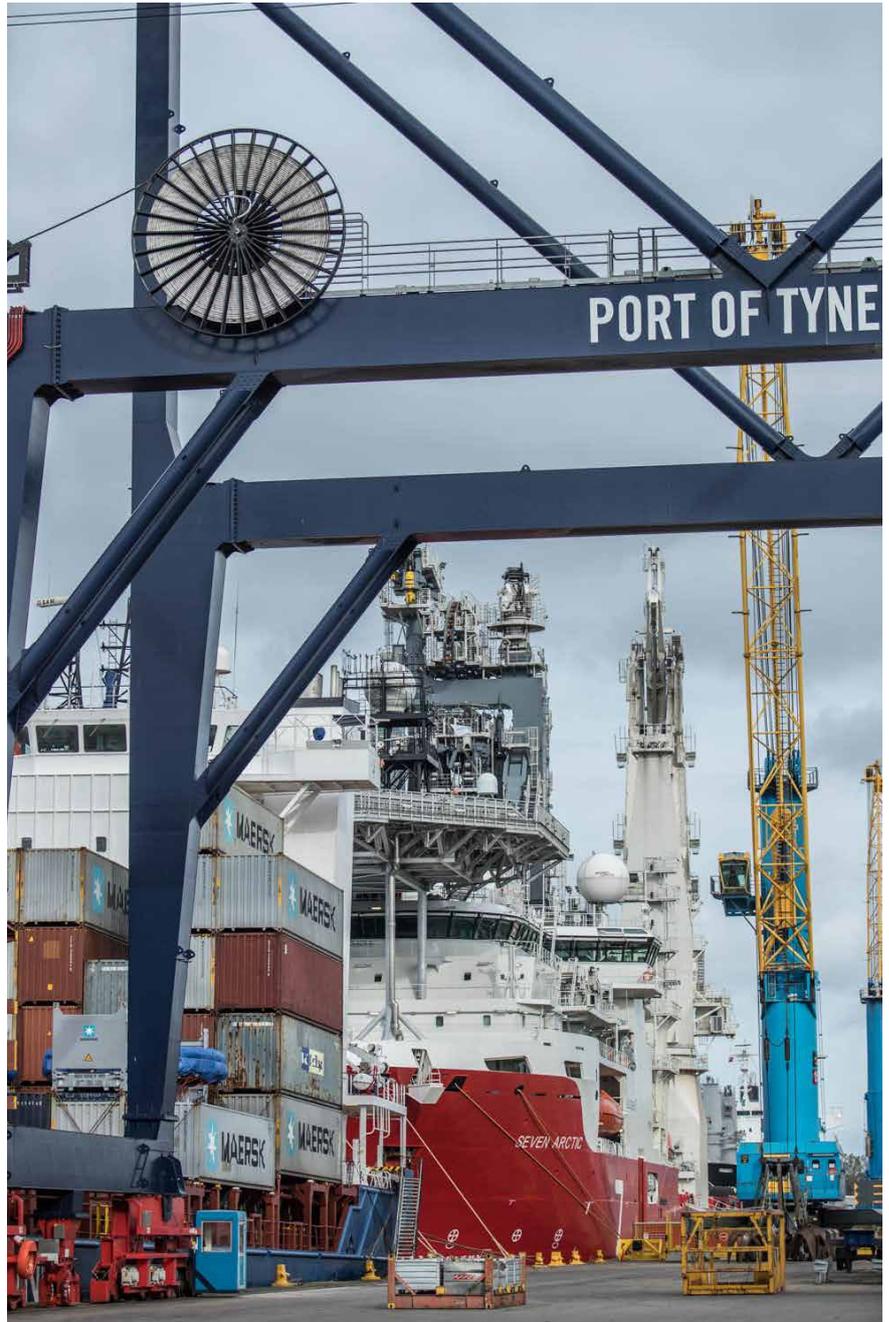
“In March 2020 we began a virtual series of online workshops and seminars. This included 8 Deep Dive sessions on the theme of Clean Energy where we explored topics such as solar, wind, tidal and geothermal to understand their potential benefits at the Port of Tyne. The output of these sessions has helped us formulate the Port’s renewable energy strategy for the future.”

North said that presently the Port and the Hub are particularly focussed on renewable energy initiatives to assist with the vision of becoming net-carbon zero by 2030.

As for the next steps North said, “We are looking to establish ourselves as a national testbed for innovative technology, to assist companies to turn their creative ideas into reality. We will be looking to form collaborative consortiums to bid for funding, to accelerate development and implement relevant technology.

“We are looking for like-minded companies to help us transform our vision into reality.”

*Written by Beth Maundrill*



**“WE ARE LOOKING TO ESTABLISH OURSELVES AS A NATIONAL TESTBED FOR INNOVATIVE TECHNOLOGY, TO ASSIST COMPANIES TO TURN THEIR CREATIVE IDEAS INTO REALITY.”**

**ABOUT THE ORGANIZATION**

The Port of Tyne is one of UK’s most innovative and efficient deep-sea ports handling cargoes across five continents.

The Port is continually investing in improving and extending its leading-edge facilities at our location on the River Tyne in North East England, served with a network of sea routes, major roads and rail.

Tyne handles a diversity of cargoes from cars to containers and bulk goods to renewable energy and offshore.

# #CHALLENGE YOUR TOS

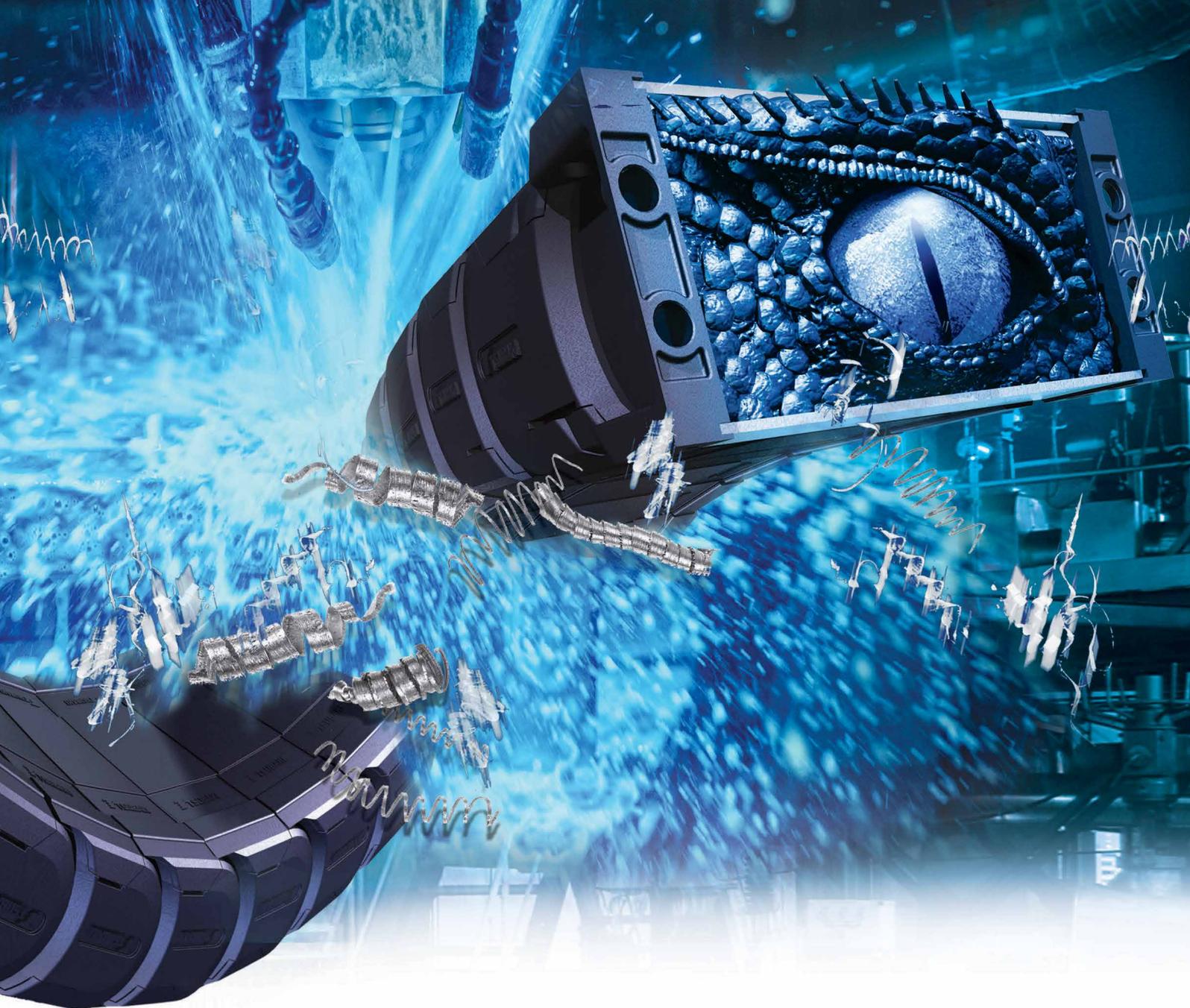
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