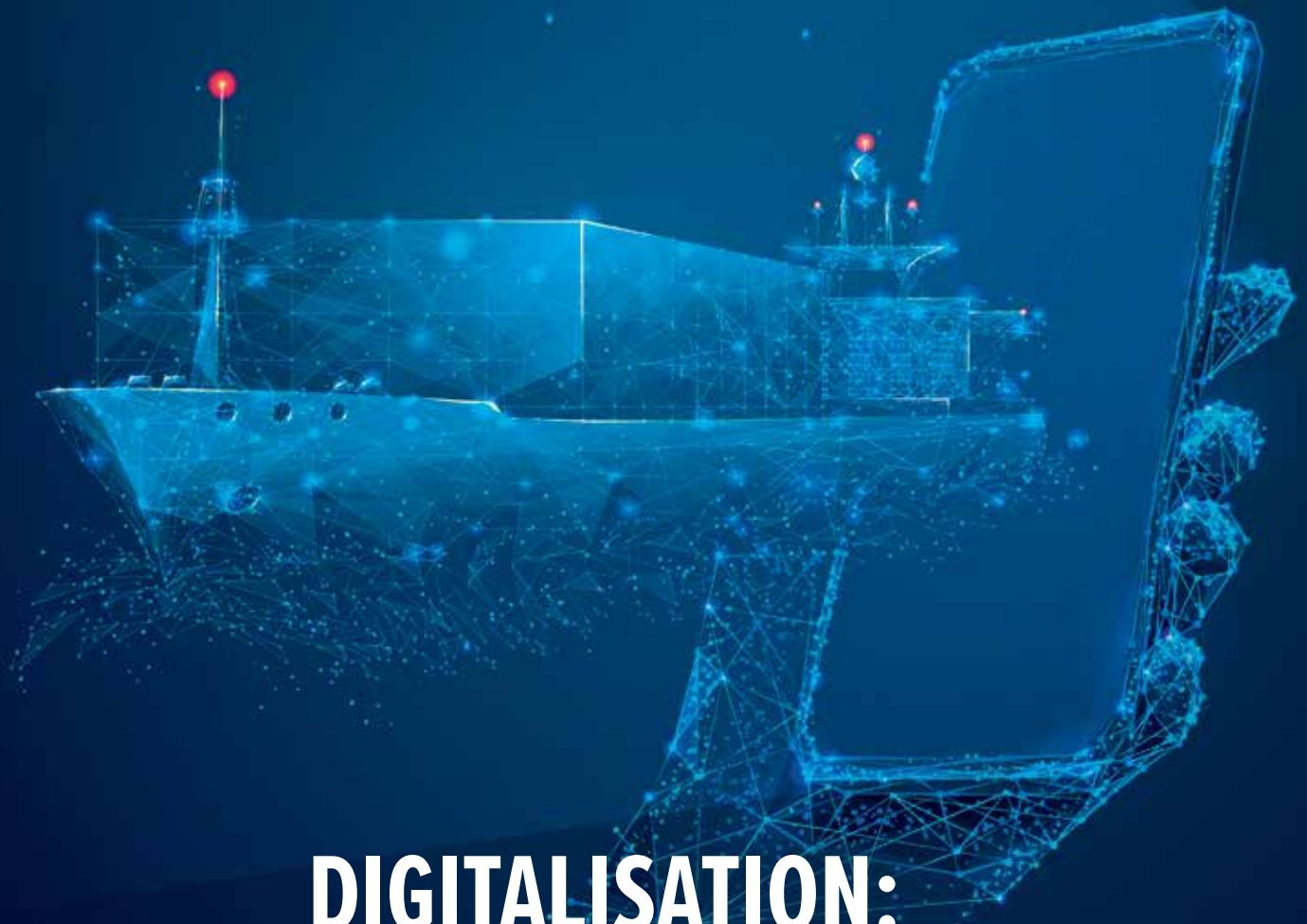


# LOGISTICS PILOT

EDITION

JUNE 2023

 GERMAN PORTS



## DIGITALISATION: FACETS OF PROGRESS

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# **SAFER, MORE EFFICIENT, MORE SUSTAIN- ABLE**

## **Dear readers,**

Exciting times are ahead for the shipping industry. Automation and digitalisation continue to evolve, which offers enormous potential for modern, sustainable and future-proof shipping and logistics.

With modern ships and robotic technologies, we can improve shipping efficiency and safety. Automated ship navigation, drones for inspecting both vessels and port facilities, and automated data processing can help minimise errors and increase efficiency within the industry. Artificial Intelligence, Big Data and Generative AI also contribute significantly to this by optimising processes and data required, as well as by making predictions and performing simulations that aim to simplify the supply chain and manage it even better. In the future, big data analysis will allow us to improve processes further for our customers in terms of quality, time and costs.

Furthermore, digital networking will enable us to monitor and control shipping and logistics processes, from both the water and from dry land – this will allow for quicker decision-making and route optimisation, as well as ensuring a consistent level of high quality. Last, but not least, it will facilitate better cooperation within the industry. Digital networking, standardisation and automation are the basis for the future of shipping and logistics.


Automation and digitalisation offer us the opportunity to be safer, more efficient and more sustainable. To ensure that the shipping industry remains competitive, it must focus on integrating new technologies and on training a workforce that can apply them. We can look forward to an exciting future in shipping and logistics; one that will be shaped by new technologies, approaches to work and collaboration between new partners.

**Best wishes, Ralf Belusa**

A portrait of Ralf Belusa, a middle-aged man with a grey beard and hair, wearing a dark blue turtleneck and a matching blazer. He is standing with his arms crossed against a plain, light-colored background.

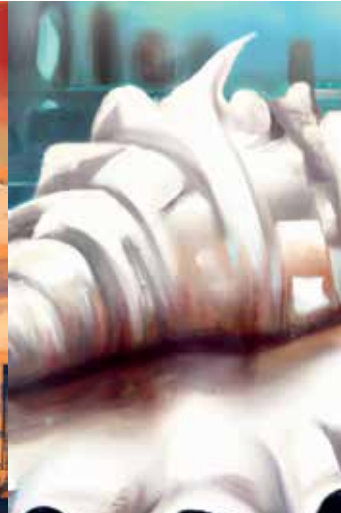
**Ralf Belusa, Managing Director for Digital Business and Transformation at Hapag-Lloyd**

# AI AT WORK

Surely you've heard of "DALL-E" by now, haven't you? This is a computer program developed by OpenAI that uses artificial intelligence (AI) to create new types of images based on text descriptions. With a name formed by fusing "WALL-E" – the cute robot from the animated film – and that of the famous Spanish painter, Salvador Dalí, you could almost refer to it as the artist brother of "ChatGPT" (see page 13). The program's special ability is its unprecedented way of combining the most diverse motifs and artistic styles, simply based on countless pieces of information from the internet. Why not ask "DALL-E" what a modern-day port setting would look like in the style of Rembrandt, or how Caspar David Friedrich would conjure up a winter landscape featuring freight containers on canvas? We put it to the test ourselves – check out the results here ... [\(bre\)](#) 



Container port at sunset, in the style of Edward Hopper



Seashell in front of the city of Atlantis



Spectacular epic film scene inspired by Steven Spielberg – huge Japanese fish flying over a new city



Stained-glass window depicting a sailboat



Thousands of rubber ducks jumping out of a container into the water



Submerged lorry surrounded by plastic



– a digital painting



Seagull over the sea, in the style of Auguste Renoir



Blue whale with shipping containers on its back



ing boat



Harbour city skyline, centred on watercolour paper, brush strokes, abstract watercolour painting



Port cooperation between Lower Saxony and Bremen as a prospect for the future – an oil painting



stic waste




Living in freight containers



Fish on a bicycle in the city with blurred background

# DASHING INTO THE FUTURE?



Where exactly are we on our path towards digitalisation and automation, and where will it take us? Where are the stumbling blocks, and what's the best way to advance digitalisation? One thing is clear – speed isn't everything, but we shouldn't underestimate it either.

**S**mart digitalisation is key for the maritime industry and logistics. However, assessments differ as to whether progress is being made fast enough or whether we need to play catch up. For example, the assessment made by Bitkom, the German information and telecommunications sector's industry association, is positive. They describe German logistics as "a digital pioneer", adding that the majority of logistics companies here are "well-positioned, technologically speaking". The "Digitalisation Index for SMEs 2020/2021" telecommunications study drew similar conclusions, designating transport and logistics companies as crisis-proof and being prepared to increase their investments in digitalisation projects.

The "Digitalisation Index 2022", published by the Federal Ministry of Economics and Climate Protection, gives a slightly different impression, stating that the German economy became only slightly more digital in 2022 compared to 2021. According to the report, it would be reasonable to say that digitalisation in 2022 had stagnated, given the strong increase in 2021. The front-runners in digitalisation last year were the information and communication technology sector and vehicle manufacturing, whereas the transport and logistics sector's development here was significantly below average. Optimists see these study results as good news – the German economy has not taken any steps backwards where digitalisation is concerned. Pessimists, however, feel vindicated in their view that digitalisation in this country is proceeding at a snail's pace at best.

### **Holocher and Freitag feel the need for action**

"Numerous studies show that Germany isn't exactly spearheading European digitalisation," said Klaus Harald Holocher, Professor of European Transport Economics and Port Management at Jade University of Applied Sciences, when assessing the current situation. "In my view, the local ports are on the right track,



**"Germany isn't exactly spearheading European digitalisation."**

Klaus Harald Holocher, Professor of European Transport Economics and Port Management at Jade University of Applied Sciences

they're just too slow. To make faster progress, the German government and the coastal states, their authorities and the maritime industry would have to work together more closely and quickly, with more focus on the benefits, such as cost and efficiency gains, than on the General Data Protection Regulation."

"On the one hand, there are some innovative companies with lighthouse projects," added Michael Freitag, Executive Director of BIBA – Bremen Institute for Production and Logistics. "On the other, though, the state of digitalisation in SMEs varies greatly. For me, the problem in the logistics field is that classic logistics service providers and terminal operators are very focused on their daily business. There are isolated projects and implementation of prototypes, but often no overarching digitalisation concept." In his view, cooperation and networking between the main figures within the logistics chain is particularly lacking, which is why he believes there to be a "real need for action" where German ports are concerned.

### **"Ports must adapt to the climate"**

It is precisely with this progressive view that Stefan Färber, Head of Port Development and Innovation at bremenports, identified a close connection between digitalisation and sustainability. "The ports →



**"Classic logistics service providers and terminal operators are very focused on their daily business."**

Michael Freitag, Executive Director of BIBA – Bremen Institute for Production and Logistics



Representatives from the entire maritime transport chain came together to contribute their ideas at the first SmartPort workshop on 18 April.

of the future are digital connectors,” he stated. “They are intelligent and networked transshipment points, partly with autonomous and automated processes. Digitalising the entire supply chain, with zero emissions or with the smallest possible carbon footprint, is conceivable.” Together with the Internet of Things (IOT) and the application of artificial intelligence (AI), he identifies Big Data as the most important future technology for this. “These developments have made the world many times more dynamic and presented the maritime industry with the challenge of offering better solutions more quickly and easily,” he added.

The ports of Bremen have embraced this challenge and, with the “Port Development Concept 2035”,

published last year, and the SmartPort campaign launched in April (see page 29) have, following intensive cooperation with all relevant stakeholders, charted an important course towards digitalisation.

“The role of the port authorities has changed,” emphasised Färber, with this in mind. “The lessors have become proactive instigators who bring the individual players in the port together and participate in interdisciplinary projects.” In addition, he believes that the importance of the ports will continue to grow as Germany’s energy supply is secured. “If the energy transition through the use of hydrogen and its derivatives is to succeed, the ports will also play a major role in supplying the nation with energy. As part of the ‘green transformation’, the port infrastructure must also adapt to the changing climate,” he continued.

### Involve all stakeholders early on

Hendric Maasch, Head of Commercial Affairs at NPorts and JadeWeserPort, also sees a correlation between digitalisation and the climate. “In the port of the future, we’ll use digital progress in almost all areas,” he outlined. “The efficiency of the ports will essentially depend on systematic data mining and will be shaped by developments in sensor technology and simulation. This will benefit logistical processes, safety and operational readiness, as well as the environment and the climate,” he continued. In his view, digital technologies that are able to process and visualise the results obtained through data mining or AI, in a way all decision-makers can understand, will be in particular demand. Like Färber, Maasch considers it inevitable that all stakeholders will be involved in this development process from the get-go. “The great art of shaping the digital transformation is in bringing people along with us and making them understand the advantages of digitalisation. This is something we should be doing every day,” he concluded.

In this context, Holocher emphasises that processes should not be modified in a one-size-fits-all approach. Instead, it is important to tailor the processes to the fluid possibilities and requirements of digitalisation. “Otherwise, the process will be cumbersome and lengthy,” he said. “In the port, we also talk in terms of ‘bullshit in, bullshit out’ in such cases.” In his opinion, the EUROGATE Container Terminal Wilhelmshaven (CTW), which is currently converting its container handling from a manual system to an automated one, is on a good path. “After several years of EUROGATE testing the introduction of driverless van carriers and straddle carriers, CTW is currently converting to double-trolley container

**“The ports of the future are digital connectors; intelligent and networked transshipment points.”**

Stefan Färber, Head of Port Development and Innovation at bremenports





gantry cranes operated by Automated Guided Vehicles (AGVs). There will also be an automated warehouse service,” said Holoher. “In the not-too-distant future,” he added, “it should also be possible to operate the container gantry cranes without a driver through remote control. For this to work, robust sensors will have to be used and I suspect some legal regulations will need to be adapted.”

### “No fully automated ports”

“The vision for the future is the SmartPort, with autonomous cranes, carriers and AGVs, as well as a digital twin of the physical processes,” explained Freitag when speaking about the port of the future and the technologies used there. “This, in turn, will be connected via platforms to both the upstream and downstream processes and to stakeholders.” However, he feels there will be no fully automated ports, as situations will always arise in day-to-day business where people are indispensable. “Plus, it’s precisely for these interactions between humans and autonomous systems that new processes and interfaces have to be created,” he continued. “I feel that this as an important research and development task for the next few years.”

### Showcase projects in Lower Saxony and Bremen

A multitude of different digitalisation and automation projects currently being worked on in the ports of Bremen and Lower Saxony, with the aim of ensuring the sites’ long-term survival, demonstrate what possible paths to the “port of the future” might look like. Indeed, as they know that the appropriate solutions cannot only increase handling figures and efficiency,



“The great art of shaping the digital transformation is in bringing people along with us.”

Hendric Maasch, Head of Commercial Affairs at NPorts and JadeWeserPort

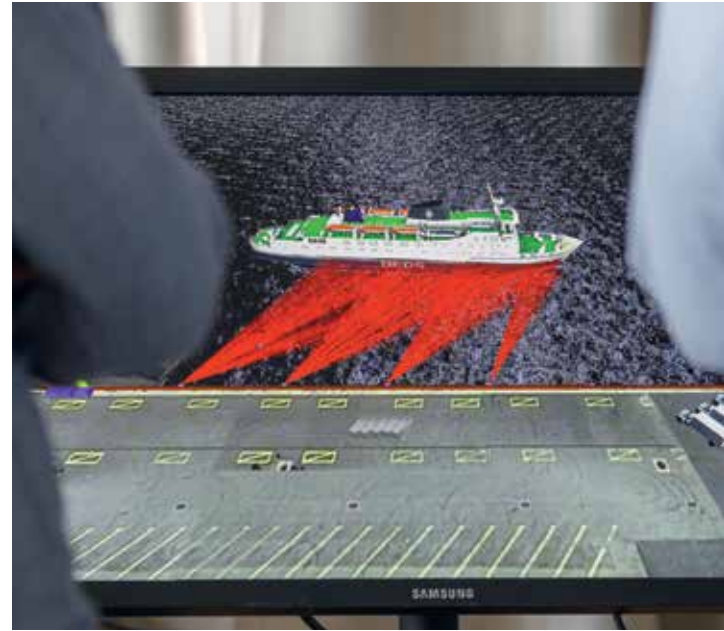
they can also simplify complex processes, minimise waiting times and reduce energy consumption. It has also been shown that introducing new technologies guarantees better digital networking between all participants in the maritime transport chain.

Where Bremen is concerned, the Port Information and Operation System, or “PRINOS” for short, the intelligent port logbook “Port2Connect” and the previously mentioned SmartPort culture feature among the showcase projects. “PRINOS” is a customer portal with a modular system structure that has been supporting Bremische Hafeneisenbahn in capacity planning, scheduling and payroll accounting since 2022. The intelligent portal ensures smooth communication between all authorised users, shunting service providers and terminals using what is known as a TAF-TSI interface for the digital transmission of data. “Port2Connect” was launched in January this year and includes a digital, smart port logbook that monitors ships – for example, by determining position data through the use of an accurate radar measurement system, which is then made accessible using AI and machine →

A firm eye on the railways – while “PRINOS” supports Bremische Hafeneisenbahn in planning capacities, scheduling and payroll accounting, the JadeWeserPort’s tiger in the tank is “Shunting Terminal 4.0”, which is testing fully automated shunting using a locomotive.



# MAIN TOPIC



“SmartKai” is a parking aid for ships. Our photos give an impression of how the sensor (front) “catches” a ship in Cuxhaven and how this process is then displayed on the monitor.

learning methods – during their time in the port. This should enable efficient and sustainable use of the port infrastructure and contribute to environmental protection efforts. The “SmartPort” project, which has already been mentioned, is of a much higher order. Indeed, bremenports is using it to achieve their goal of improving the performance of Bremen’s ports through networking and digital solutions in close cooperation with the stakeholders. Among other things, a SmartPort community is to be established in four phases, between April this year and February 2024, and will proactively help shape the digital future of the ports and develop a SmartPort strategy with concrete actions.

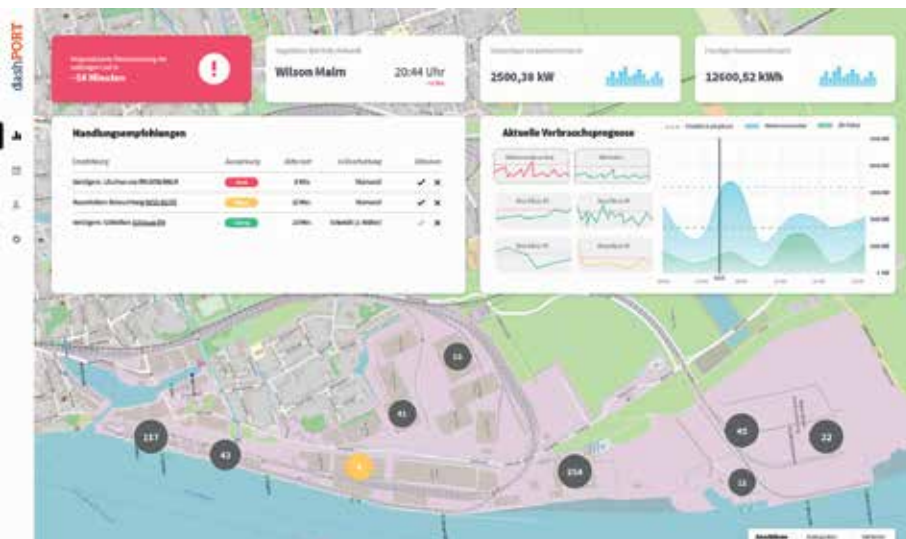
This screenshot shows how the “dashPORT” digital control centre in Brake visualises energy consumption and energy consumers in the port.

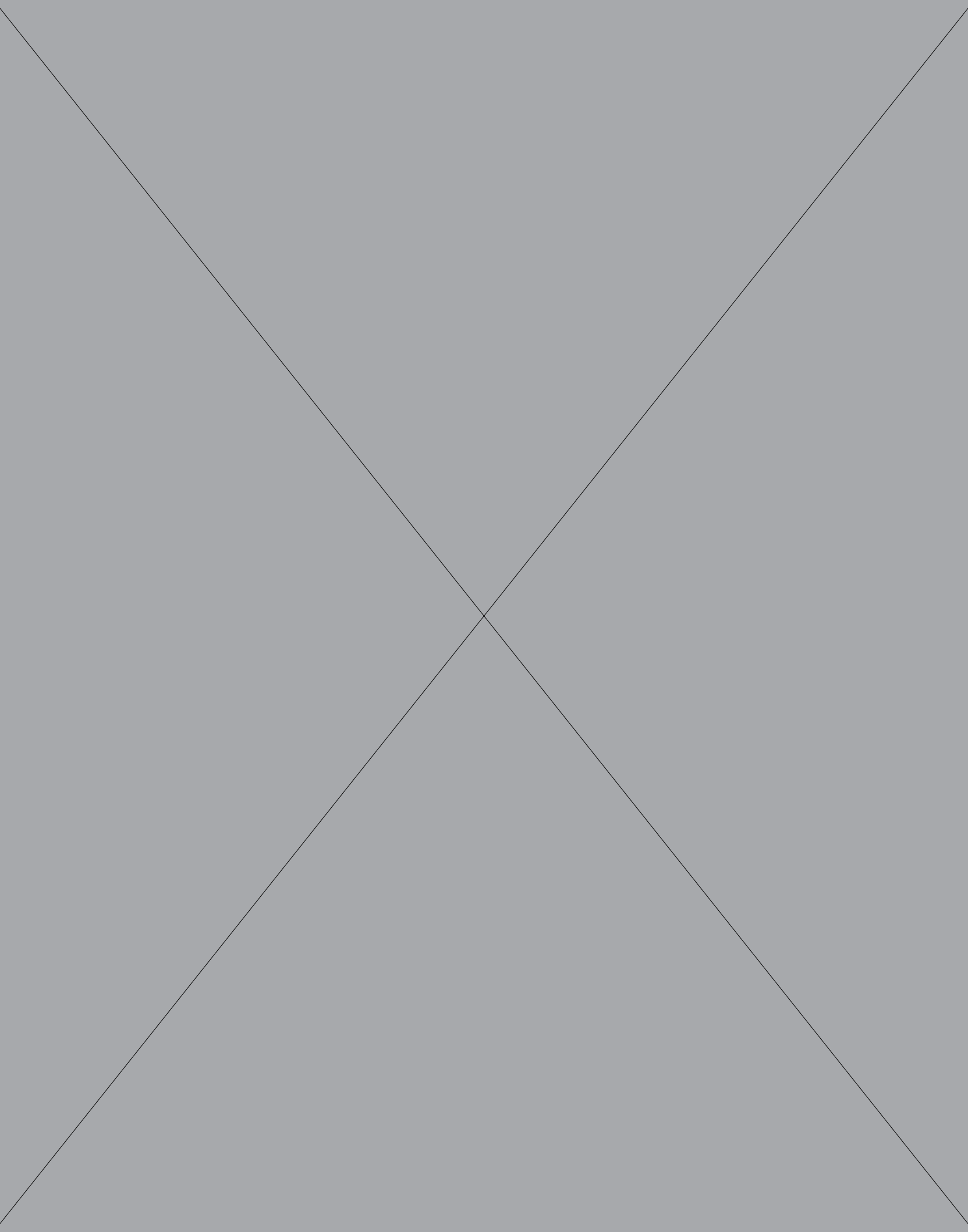
In Lower Saxony, too, all seaport locations have long since begun working on a wide range of digitalisation measures. The IHATEC projects “Shunting Terminal 4.0” and “SmartKai” in Wilhelmshaven and Cuxhaven, as well as “dashPORT” in Brake are just a few of their digital

successes. “Shunting Terminal 4.0”, for example, is testing fully automatic shunting with a locomotive – this is intended to optimise rail operations, both in accordance with the requirements of container handling and from an environmental perspective. The project will run until the end of May, which is when the “SmartKai” ship-independent guidance system project – a parking aid for ships, so to speak – being tested at NPorts in Cuxhaven will also end. Using a variety of sensors, a ship’s positioning and movement can be continuously and precisely assessed when it enters and leaves the port area, which will help to prevent accidents and damage to property within the ports. The “dashPORT” digital control centre was successfully completed in Brake in September 2022. This project involved the development of a software solution that visualises both energy consumption and energy consumers throughout the port. The findings can help derive suitable measures for reducing energy consumption and CO<sub>2</sub> emissions in each case. The pilot project, which NPorts, the Fraunhofer CML, the Oldenburg OFFIS Institute and J. MÜLLER AG implemented together, was awarded first prize in the “How can ports and maritime logistics be made more sustainable?” category at the Maritime Cluster Northern Germany’s “MCN Cup 2021”.

Even if these projects can only give a small impression of the range of digitalisation and automation activities in Lower Saxony’s and Bremen’s ports, they do show one thing – at these sites, digitalisation is reality, carried out with passion, and not just some vague idea implemented slowly and half-heartedly.

(bre)





# **“MANY LACK THE COURAGE TO CHANGE”**

In an interview with LOGISTICS PILOT, dbh director Marco Molitor discusses the differences in digitalisation in large and small companies, the acceleration of digital change due to the Covid-19 pandemic, and the requirement to make the general public more aware of digitalisation.

**“We need significant improvement in digital infrastructure.”**



**LOGISTICS PILOT: How do you assess the German economy in general, and German logistics in particular, in terms of digitalisation? Have you identified any areas where things are going particularly well?**

**MARCO MOLITOR:** I find it difficult to make sweeping statements in this day and age, when our everyday lives are changing completely, especially where the German economy is concerned, as it's precisely here that considerable differences are apparent. There are the larger companies that are already investing a great deal in new technologies and actively shaping digital change. They have both the financial and the human means to do so, though. The small or medium-sized company with 20 employees already working at full capacity will find this much more difficult. Since you ask where things are going particularly well ... the port industry is already well positioned in terms of digitalisation, but in logistics there's still a lot of potential.

**LOGISTICS PILOT: Why is there such a lack of development at the moment? Do companies in this country lack the courage required to implement digital innovations, or has the necessity for this not yet reached the general consciousness?**

**MARCO MOLITOR:** Yes, most companies have realised that they need to invest in new technologies. But, as I said, not everyone can afford it. Plus, you're right: many certainly lack the courage, or their willingness to do so varies greatly. Many companies have an attitude like "Progress? Yes, but with as little change as possible please!" Often, the desire to change only comes when problems arise, for example a customs audit or a hacker attack. Our general mindset needs to change in this respect.

**LOGISTICS PILOT: Has Covid slowed companies down in their digital transformation or pushed them to embrace it? And has the war in Ukraine helped to make those in charge more sensitive to IT and data security?**

**MARCO MOLITOR:** The Covid-19 pandemic definitely contributed to the acceleration of the digital transformation. Video conferencing, mobile working and webinars, to name just a few examples, existed before, of course, but these areas were expanded rapidly during the lockdowns. Digital transformation costs money, though. Smaller companies don't have this money, and this hinders their digital transformation. Plus, the decision-makers are sometimes not necessarily those who are familiar with

digital transformation and don't understand what steps are necessary. Regarding the war in Ukraine – data security was already a significant factor before, but the number of requests for security solutions has skyrocketed since it started. Here's an example – before the war, our data centre was attacked by around 10,000 hackers a day; now it's 40,000. We can deal with that. However, every company should make an active effort to ensure its data security. Our task must be, therefore, to sensitise those responsible in each case to the fact that IT security is a relevant topic, now more than ever, and that sufficient resources must be made available for it. Alternatively, it's possible to leave it to the professionals.

**LOGISTICS PILOT: What does it take for digital technologies to be used even more quickly and comprehensively in Germany?**

**MARCO MOLITOR:** We definitely need a significant improvement in the digital infrastructure. 5G is a prime example. Expansion is already underway, but not quickly or efficiently enough in my opinion.

Network failures are still a big issue, other countries are already much further in this respect. As is true for so many industries, the shortage of skilled workers is also a huge problem. We need to raise awareness of IT among the general public and attract qualified young people early on – for example, by introducing computer science as a subject in schools much earlier.

**LOGISTICS PILOT: Which digitalisation project has impressed you the most in recent months?**

**MARCO MOLITOR:** That's an easy one – our "PRINOS" (Port Railway Information and Operation System) digitalisation project.

For just under three years, dbh Logistics IT AG has been developing this new IT system for Bremische Hafeneisenbahn, which considerably speeds up the processes involved in planning capacities, scheduling and payroll accounting. It's a real change project that ensures improved efficiency and transparency. We've already successfully introduced "PRINOS" in Bremen-Grolland, and Bremerhaven is to follow this coming summer. (bre) □

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# CHATGPT HAS THE POTENTIAL TO OUTPERFORM THE LIKES OF GOOGLE

Since the US company OpenAI published the first prototype of the chatbot "ChatGPT", which stands for Generative Pre-trained Transformer, in November 2022, this technology has been on everybody's lips. ChatGPT uses artificial intelligence (AI) and machine learning to respond to questions. The chatbot's knowledge is based on a huge dataset of texts and conversations taken from various sources on the internet. In the course of its development, ChatGPT has continuously learned improved techniques and algorithms to provide increasingly accurate answers.

"In its current stage of development, ChatGPT has surpassed all previous AI models and applications and will rearrange the market and what has gone before," said Daniel Becker, Head of IT at bremenports. "Such technology has the potential to outperform even the likes of Google. In my view, the latest version 'ChatGPT-4' has the performance to provide answers to complicated questions on a human level, and at a very high speed." However, many AI

researchers point out that the chatbot is still at the beginning of its development and that its answers can still be flawed, so they should always be questioned and double-checked.

Hendric Maasch, Head of Commercial Affairs and IT at Niedersachsen Ports and JadeWeserPort, also sees a major challenge in checking the source of what ChatGPT produces and assessing the accuracy of the results. "In the application of our human language, there are certain assumptions of understanding that the AI remains unfamiliar with," he emphasised. "Pronouns should be avoided in queries, for example, because ChatGPT often relates them incorrectly to nouns in previous sentences." Nevertheless, Maasch is also convinced that this technology will be an essential element for accessing knowledge. In the future, however, school teachers, in particular, will have to become skilled in recognising what is acquired knowledge in submitted work and what has been provided by technology. (bre) □

# AI ON THE RISE

July 2022 marked the official launch of the Transfer Centre for Artificial Intelligence (AI) at the Bremen and Bremerhaven sites. The centre has since not only raised awareness of AI among the general public by organising such events, rather it has also supported local small and medium-sized companies in implementing AI technologies. The main goal, however, is to use networking activities to strengthen and expand Bremen's AI ecosystem. The centre is funded by the Senator for Economic Affairs, Labour and Europe.



**N**ot everyone is aware of how often we already use AI in our everyday lives. We use it, for example, when we surf the internet or when we shop online and are presented with personalised buying suggestions based on our previous purchases. AI is also often behind the navigation systems and virtual assistants that direct us to the right contact person when we call a company or a public authority.

"AI guides and helps us with a variety of options that shape our future," explained Inis Ehrlich, project coordinator responsible for managing the Transfer Centre for Artificial Intelligence Bremen/Bremerhaven – on behalf of Bremen's Senator for Economic Affairs, Labour and Europe, Kristina Vogt. Here, the possible areas of application for AI range from search engines and recommendation services, to chatbots and voice control, to robotics and cyber security. "However, the areas we deal with most intensively in logistics and the maritime industry are route planning and transport optimisation, storage and inventory management, as well as predictive maintenance," Ehrlich elaborated. Moreover, in logistics, exoskeletons – robotic frames that employees can wear on their bodies to help them lift heavy loads, among other things – are today's hot topic.

However, at "Future Day" on 7 July 2022, the Transfer Centre's kick-off event, the focus was on completely different forms of AI. Robots, autonomous vehicles on a large and small scale and intelligent augmented reality and virtual reality (AR and VR) glasses appealed most to the public and increased their enthusiasm for AI. "The launch event was a great success," said Ehrlich. "For many of the more than 300 visitors, including companies, numerous schoolchildren and university students, the event was their first real contact with AI. We hope to have piqued their interest further in how AI overlaps with daily life."

## Isabella, KITE, K4R and more

Interest in AI in the maritime industry and in logistics has been high for a long time, and it is constantly growing. Accordingly, this makes reporting on successful AI projects in this market segment from Bremen and Bremerhaven, "Isabella" and "Isabella 2.0", for example, quite easy. These projects focused on the development of an intelligent planning and control system for logistics processing and the movement of automobiles between ship, train and HGV – a prototype was tested at the BLG

Kristina Vogt, Bremen's Senator for Economic Affairs, Labour and Europe, sees Bremen as an "internationally recognised AI development hub".





First experiences of AI – schoolchildren interacting with robots at last year’s “Future Day”.

AutoTerminal Bremerhaven. Those involved were BIBA – Bremen Institute for Production and Logistics at the University of Bremen, BLG LOGISTICS and the Bremen software specialist 28Apps Software. “KITE” was also developed with the participation of BLG. This



Hands-on AI technology – nobody could resist trying out AR and VR goggles at “Future Day”.

is an AI-based process for HGV route planning that has enabled the companies involved so far to reduce their empty journeys by up to 15 per cent, thus contributing to the reduction of greenhouse gas emissions in transport. “KITE” has received funding of around one million euros from the Federal Ministry for the Environment and Digital Infrastructure.

For Ehrlich, the “Knowledge4Retail” (K4R) open-source platform, developed by the German Research Centre for Artificial Intelligence (DFKI) in Bremen, the University of Bremen and other collaborators, and the Ubica scanning robots are also considered showcase projects in the logistics field. The goal of K4R, she says, is to create a variety of new AI and robotic applications in retail, for example in the form of intelligent intralogistics, as service robots or for strategic retail marketing. The digital twins from Ubica Robotics, on the other hand, recognise and record the fixtures and inventory in various retail branches on a daily basis. The data gathered can be analysed with AI to improve shelf replenishment, optimise stock management or carry out a complete inventory audit, for example. “All these projects are important modules for Bremen and Bremerhaven’s AI hub, and there are many more of them in our compact little state,” stated Kristina Vogt, Bremen’s Senator for Economic Affairs, Labour and Europe. “Hundreds of highly qualified specialists are already conducting excellent research and work here, making Bremen an internationally recognised AI development hub.”

### Bremen AI Days in June 2023

In this diverse field, Ehrlich’s focus is always on the future and on new challenges, one of these being the next “Future Day” event, which will take place at the Bremen AI Transfer Centre in the Digital Hub Industry under the new name of “Bremen AI Days” on 27 and 28 June 2023. “Once again, we will open up to the general public and hope to see plenty of interested people join us. One of the closing events in the ‘MINT 4 Girls’ series will also be part of the AI Days. Similarly, we’re delighted to feature an array of presenters drawn from Bremen’s female AI experts who will be showcasing their innovations and projects,” explained Ehrlich excitedly, unable to resist dropping this plug. (bre) □

\* MINT is the German abbreviation of academic subjects that corresponds to STEM in English.

**More information:**

[www.transferzentrum-bremen.ai](http://www.transferzentrum-bremen.ai)  
Contact: [i.ehrlich@transferzentrum-bremen.ai](mailto:i.ehrlich@transferzentrum-bremen.ai)



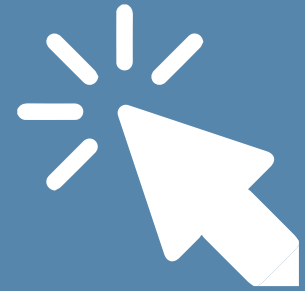
Inis Ehrlich is the project coordinator responsible for managing the AI Transfer Centre Bremen/Bremerhaven.

# BLESSING OR CURSE?

Whether it is Work 4.0, artificial intelligence (AI) or digitalisation and automation, people respond very differently to these keywords. Whilst these terms are viewed by some as a promise of progress, they elicit fears about the future of work among others. We have therefore researched some exciting numbers, studies and surveys which can provide guidance in the digital jungle – but also encourage further discussion. For example, would you have ever thought that South Africa would lead the ranking of countries with the highest duration of internet use per day, or that Finland would be the country with the highest degree of digitalisation in the EU?

AROUND

2.982



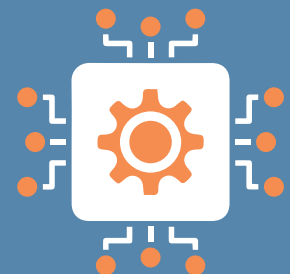
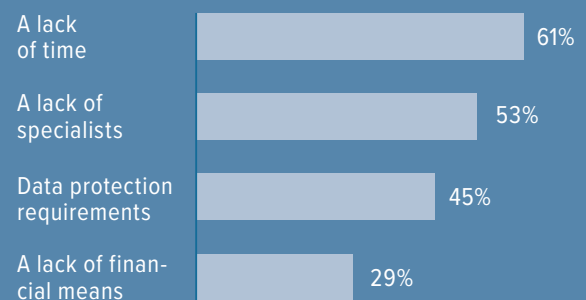
MILLION COMPUTERS

were sold worldwide in 2022.

## THE FIVE MOST IMPORTANT TECHNOLOGY TRENDS FOR 2023

1. Digital immune systems
2. Applied observability
3. AI trust, risk and security management (AI TRiSM)
4. Cloud platforms for industry
5. Platform engineering

What are the largest obstacles to digitalisation at companies?





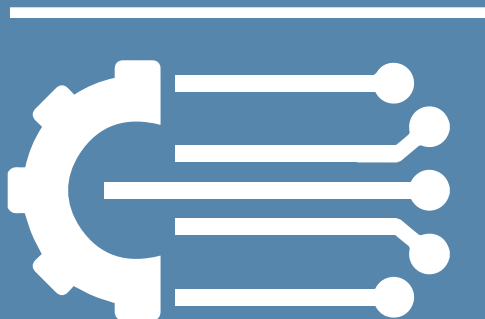
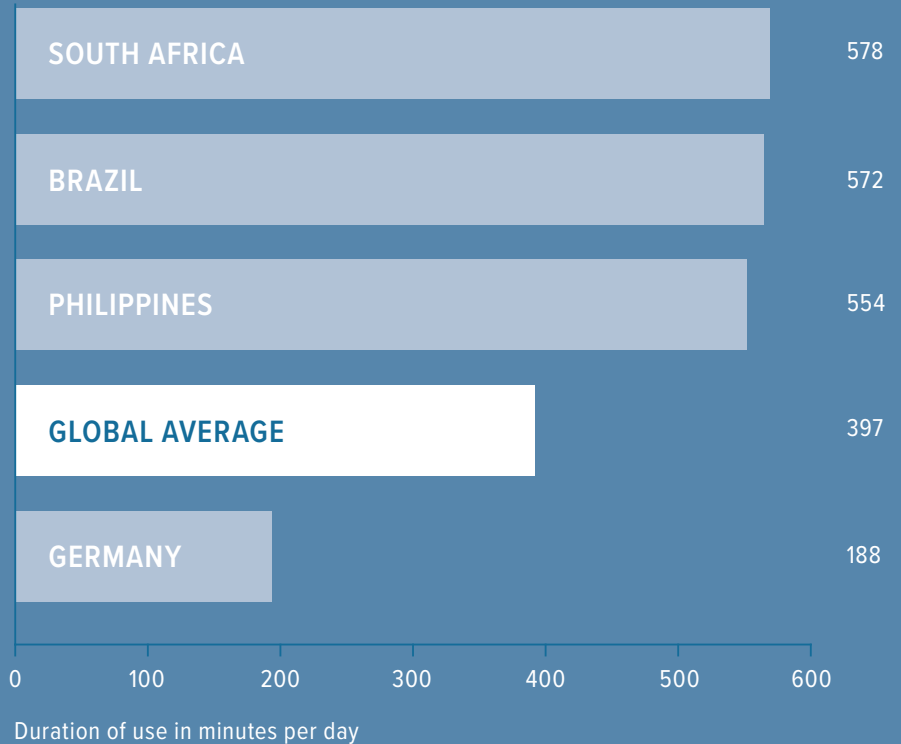
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billion internet users  
worldwide in 2022.

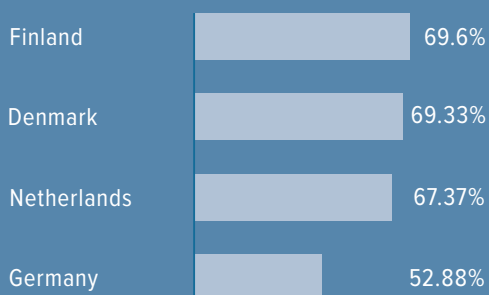


The number of people online therefore increased by around 2.9 billion within a period of ten years. The region with the greatest number of internet users (2022: 2.93 billion) is Asia.

South Africa leads the ranking of the countries with the highest duration of internet use per day.

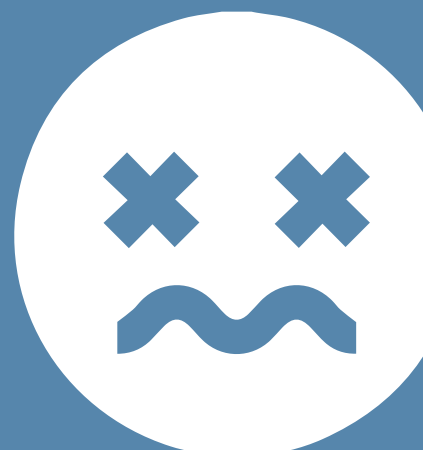


The degree of digitalisation in EU countries in 2022 according to DESI.



## GERMANS' TOP-FIVE DIGITAL FEARS

1. My data will be misused.
2. Internet crime is on the rise.
3. Citizens are increasingly monitored.
4. Terrorist cyberattacks
5. Society is losing its ability to differentiate between facts and fake news.



# ON THE WAY UP

With the amount of space available dwindling and automation on the rise, more and more logistics companies are not only thinking ahead, but are also thinking upwards. Examples include the high-bay storage systems for BOXBAY containers and for NORDFROST frozen foods.



The high-bay storage system for containers at the Port of Jebel Ali in Dubai measures 230 metres in length, 26 metres in width and 50 metres in height, and features 792 spaces for boxes. The full version can accommodate 800 storage and retrieval manoeuvres per hour, with a theoretical capacity of 92,000 TEU a year.

First two, then three to four, and now up to six containers high. Containers are stacked higher and higher at the terminals. “Without additional technology, it’s just not practical to go any higher,” said Mathias Dobner, CEO of BOXBAY, which is a member of the SMS Group in Düsseldorf. “That’s because increased restacking to access specific boxes reduces productivity.”

An attempt was made in the 1980s to stack containers even higher using high-bay storage technology, but demand was limited in the past. “Back then, there was still enough space at the port terminals,” stated Dobner. That has since changed, he added, largely in terms of restacking activities, electricity consumption and staff and time requirements.

“Very few companies around the world are as well acquainted as we are with handling large and heavy loads,” emphasised Katja Windt, Chief Digital Officer (CDO) of the SMS Group. Featuring shelves up to 50 metres in height, special automated high-bay storage systems have been developed to accommodate up to 40 tonnes of heavy metal coils, which can be stored and retrieved 24 hours a day.

The 2013 New Horizon innovation strategy took a closer look at where this special expertise could be put to use in future. Two sectors quickly stood out: freight logistics at airports and container logistics at seaports. Luckily for the SMS Group, port operator DP World was also looking for industrial companies to



“The project in South Korea was the breakthrough.”

Katja Windt, CDO of the SMS Group

collaborate with on the idea of a high-bay storage system for containers – and ultimately placed its trust in the Düsseldorf company.

### Extensive testing in Dubai was successful

Many drafts later, the BOXBAY joint venture was founded in 2018, and construction of the proof-of-concept (POC) test system at the Port of Jebel Ali in Dubai kicked off in summer 2019. After a construction period of 18 months, the system began operating in 2021, with more than 200,000 container movements conducted under realistic operating conditions since then. During this time, the testing demonstrated the desired function, performance and productivity and confirmed that the system was ready for the market.

And now it is time for the next major step: a high-bay storage system for containers is now under construction at the Port of Busan in South Korea, representing the world’s first commercial application. The Pusan Newport Corporation (PNC) is a subsidiary of DP World, making the automation statement all the bigger in the sector. That is because there is a lot of catching up to do particularly in container spaces. →



The high-bay storage system at NORDFROST Seaport Terminal in Wilhelmshaven was built in around 14 months and has been operating since November 2021.

“BOXBAY simplifies logistics, as all the boxes are directly accessible, and availability can be predicted with precision,” explained Dobner. Whilst traditional stacking requires complex warehouse management algorithms to ensure intelligent stacking and unstacking, the lorry or straddle carrier is often already there when the rubber-tyred gantry (RTG) or rail-mounted gantry (RMG) crane is still in the process of restacking.

It is also worth noting that a significant increase in handling is forecast, with traditional stacking pushing far more ports than before to their limits. “Three per cent growth means that 45 per cent more space will be required in ten years. Our high-bay storage system can accommodate 3,000 rather than 500 TEU on one hectare, reducing space requirements to around 25 per cent,” emphasised Dobner.

“The project in South Korea was the breakthrough,” said Windt with delight. “We’re currently involved in 20 to 30 conversations about additional applications,” added Dobner. “This type of high-bay storage system is ideal for ports that handle



**“Our high-bay storage system can accommodate 3,000 rather than 500 TEU on one hectare.”**

Mathias Dobner, CEO of BOXBAY

500,000 TEU or more a year – especially if there’s limited space for expansion.”

### **High-bay storage systems for palletised frozen foods**

NORDFROST, the company which warehouses and distributes a variety of palletised frozen foods, from vegetables, fish and meat to baked goods, convenience products and ice cream, has also been using fully automated high-bay storage systems in Herne since 2020 and at Container Terminal Wilhelmshaven since 2021. Using automation technology, the logistics company plans to fulfil customers’ requirements in frozen food logistics, with a particular focus on quality and flexibility.

The process of loading and unloading lorries at the NORDFROST Seaport Terminal is already fully automated. “That’s something new in the services sector,” emphasised Britta Bartels, Managing Director of NORDFROST. “This will accelerate logistics processes, ensure efficient use of vehicle loading capacities and reduce the amount of manual work required in freezer spaces.”

But full automation in high-bay storage systems also extends to important process steps such as transporting palletised goods from incoming goods to the warehouse using pallet conveyor technology. In addition, fully automated processes include placement on shelves with storage and retrieval systems, subsequent retrieval for customer orders and transport to outgoing goods for loading, which will ultimately lead to some logistical changes. “Most importantly, conveyor technology will be used on routes that are otherwise covered by employees with forklift trucks at conventional warehouses. The technology is operated from a central control station,” explained Bartels. “The system and IT have high demands in terms of load carrier and box quality and in terms of labelling and interface data. We’ve offered internal training courses on the necessary automation-specific adjustments to working methods in the office and warehouse.”

### **Automated packing of up to 125 mixed pallets**

“There’s even an automated picking system connected to the fully automated high-bay storage system in Herne that fulfils its tasks at exceptional speed and with very high quality,” continued Bartels. For example, up to 125 mixed pallets can be packed automatically per hour based on recipients’ orders, even with an extensive and alternating range.

A variety of conveyor technology types make it possible to move pallets and individual boxes in the automated warehouse areas in Herne. There is an automated depalletiser system available for removing boxes from pallets. Individual boxes are temporarily stored in the so-called shuttle warehouse until they are accessed for order picking.

The combination of automated and manual processes selected at both locations provides NORDFROST with extraordinary flexibility, allowing the company to handle an extensive range of goods in the warehouse and during the picking process. "That's important because it allows us as a logistics service provider to fulfil a whole host of customer requirements. The fully automated processes are only suitable for goods and load carriers that fulfil technical requirements in terms of pallet dimensions, for example," stated Bartels. Even if the building projects currently under

## "Automation and digitalisation are increasingly shaping the future of logistics."

Britta Bartels,  
Managing Partner,  
NORDFROST



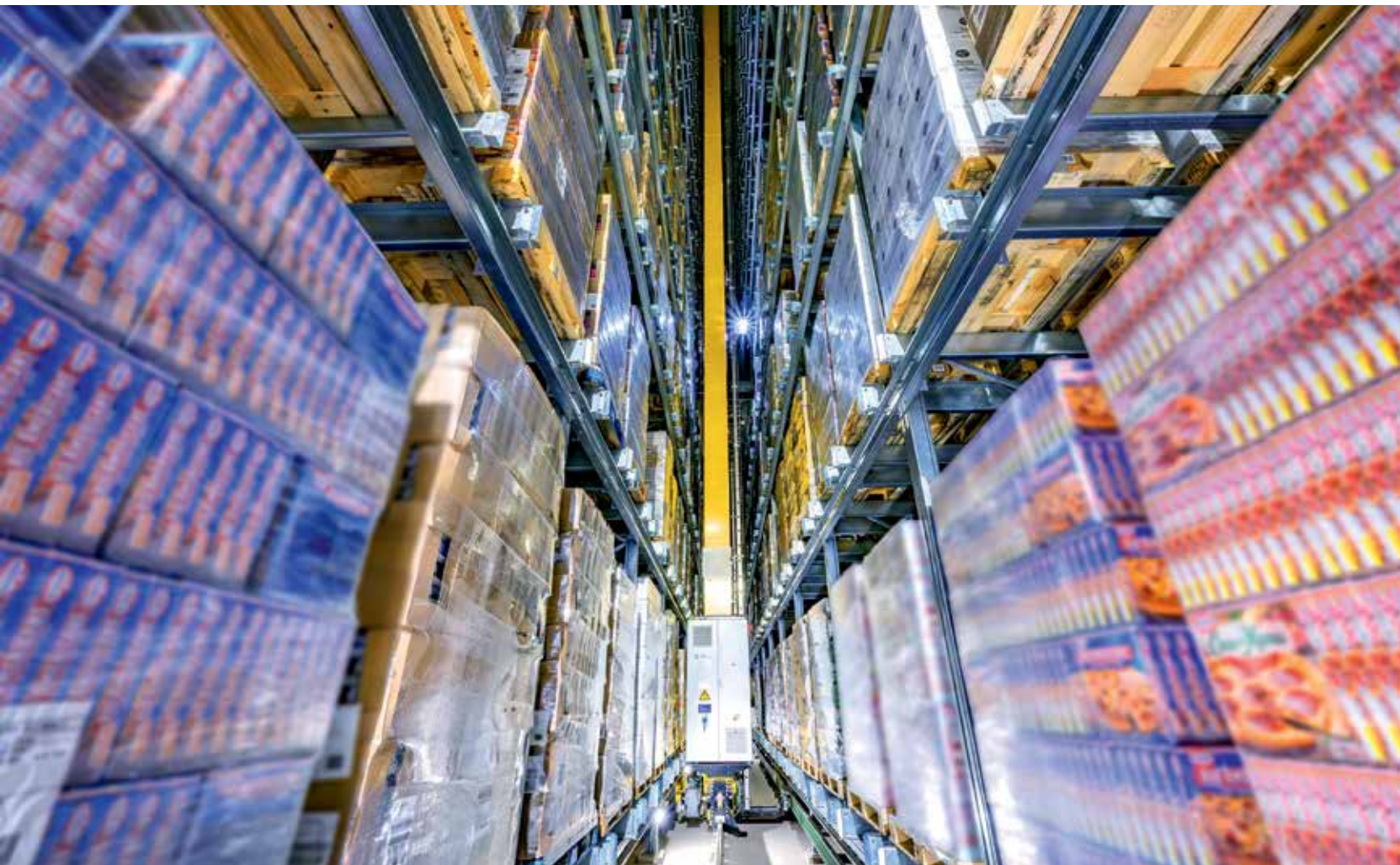
construction or in the planning phase in Wilhelmshaven, Wesel and Bremerhaven do not contain fully automated high-bay storage systems, the managing partner is sure of one thing: "Automation and digitalisation are increasingly shaping the future of logistics."

More  
information:

[www.boxbay.com](http://www.boxbay.com)  
[www.nordfrost.de](http://www.nordfrost.de)

(cb) 

The 34-metre-tall high-bay storage system features six shelf aisles, each of which is equipped with a storage and retrieval system, and offers space for 42,000 pallets.



# LOGISTICAL TWINNS ARE A LOGICAL CHOICE

OHB Digital Services, a Bremen-based company, has developed a digital twin which, thanks to satellite data, works best precisely where it is most difficult for other software – in large outdoor spaces – and offers a high degree of flexibility without permanent markings or manual registration of goods and location.

**A**n aerospace company that also focuses on logistics? It may sound unusual, but that is exactly what the listed OHB technology group based in Bremen is. With customers such as the European Space Agency (ESA), research institutes and the Bundeswehr, the Group has been active in the aerospace industry for more than 40 years and tapped into logistics five years ago.

“Satellites provide extensive metadata – however, these are not yet ready for use by non-professionals and companies,” explained Christian Stelljes, Manager of Innovations & Sales at OHB Digital Services. “Years ago, we started thinking about how we could make these data usable for companies as application solutions.” Some companies have been active in this field for longer. But with the bundling



of this expertise, the OHB Digital Services division was founded specifically for interpretation and data processing and to develop and market products associated with the transmission and use of satellite data.

“The key field of logistics proved to be especially suitable because it functions on the basis of logic,” explained Stelljes. The idea: “We combine logistics and processes with our expertise in satellite precision.” The result was several products, including the LogTwin software application, which can be used to produce a digital image of all the logistical spaces, goods movements, processes and means of transport.

How does it work? Two aerials mounted on transport vehicles or machines are used to receive and send global navigation satellite system (GNSS) data. One is for positioning, the other for orientation. With the aid of a proximity and an altitude sensor, all six dimensions of goods movement can be identified and tracked. To calculate a position on the earth’s surface, these GNSS receivers measure the length of time it takes the radio signal to travel between the satellite and the receiver. Combined with a reference antenna at the site of operation and a mathematical calculation, this provides the precise position of each dimension down to the centimetre.

“The connection point is the incoming goods inspection by employees, at which time the goods are equipped with a GNSS signal,” explained Stelljes. That also means that the goods no longer need to be labelled by hand. Once the GNSS signal has been applied, the system is fully automated. “Anything with electrical

## THE BHV DIGITALISATION WORKING GROUP

With its spokesperson Christian Stelljes at the helm, the digitalisation working group gets together once a month at Bremische Hafen- und Logistikvertretung (BHV). The working group has bundled the digital expertise of users and suppliers within the association since 2021. One of the group’s first areas of focus was developing an expertise directory, which has been available online at <https://kompetenzatlas.bhv-bremen.de> since early 2023 and offers an overview of members’ ongoing and completed software and research projects – with the aim of increasing interaction in the field of digitalisation. During an advisory hour from 10 to 11 a.m. on the second Wednesday of every month, working group members also provide advice on digitalisation issues in an effort to assist with the digital transformation in company processes and help overcome challenges. (cb)



power can be incorporated into the system. And based on the positions and activities of the vehicle carrying the connected goods, the direction in which the goods are moving can be calculated,” said Stelljes. “You no longer need to scan or manually enter the storage location and goods whenever there’s movement. Satellite and vehicle data therefore prevent potential human errors.”

### 3D image of the terminal

The whole thing is illustrated using the outdoor area of port services provider Weserport in Bremen, which was once a pilot customer and continues to operate as a partner for product changes and new developments to this day. The storage spaces were recreated as a digital twin, which is a three-dimensional, one-to-one reproduction. When the software launches, the screen displays the entire port site along with the goods and vehicles present.

For example, you can watch a forklift approach several steel coils, lift and load one of them, and then drive to the storage space not far from the quayside – all in real time. Satellites can be used to monitor every movement and locate the position of goods and vehicles down to a few centimetres. “The virtual view even displays the different dimensions of the goods,” said Stelljes, describing one of the unique features.

Unlike conventional storage space, the digital twin supports dynamic space planning, meaning there is no need for a fixed division of space with

The first-ever BHV Project Logistics Award was presented to the IT company OHB Digital Services based in Bremen for its LogTwin software at the Project Logistics Expert Forum in 2023.

clear coordinates and labels. “Our software takes positioning out of the equation. The areas specified for certain groups of goods can be reassigned and the geometrics changed to meet current demands – all with a mouse click,” explained Stelljes.

### Optimised routes for reduced CO<sub>2</sub>

That offers a variety of benefits. For example, planning internal logistical processes is much more efficient, which is an important factor, as wait times are expensive and the handling process needs to be fast and seamless. And because goods can no longer get lost, there is no longer any need to search for them. Manual documentation in paper form is a thing of the past.

In addition, LogTwin can help improve preliminary planning. But if necessary, the software can also make decisions itself and thus optimise capacity and utilisation planning. “Our satellite knows where each vehicle is on the site at all times and whether it’s actively processing a transport order. Thanks to geo-supported order picking, we can allocate goods to vehicles without an active transport order based on their proximity to those goods, with the aim of preventing empty running and thus reducing unnecessary consumption, provided the vehicle is designed to transport those types of goods,” stated Stelljes. Of course, a forklift with a five-tonne capacity can only transport the corresponding weight when it is in close proximity. “The CO<sub>2</sub> emissions associated with empty running can be reduced by around 30 to 50 per cent depending on the customer,” said Stelljes.

“It always makes sense to generate a digital twin when the level of manual work required is high.” Digital twins can be used for different types of goods such as breakbulk cargo, consolidated cargo, bulk cargo and project cargo – in open storage, in warehouses and at ports. Orders can be managed via drag-and-drop – even from remote locations, via laptop or tablet. And it is also possible to plan and simulate storage constellations. All this can also be introduced in existing storage spaces, as the required technology can be installed.

## FACTS

### OHB GROUP

Its areas of business include telematics and satellite, aerospace and security, payloads and science, international aerospace, aerospace transport and aerospace structures.

### ESTABLISHED

1958

### HEADQUARTERS

Bremen

### EMPLOYEES

Approx. 3,000

### TURNOVER

Approx. EUR 1 billion

### More information:

[www.ohb.de](http://www.ohb.de)  
[www.ohb-ds.de](http://www.ohb-ds.de)  
[www.logtwin.de](http://www.logtwin.de)

(cb)



## NPORTS EQUIP PORTS FOR A SUSTAINABLE FUTURE

**OLDENBURG** With its third sustainability report issued in March, NPorts demonstrated that the ports of Lower Saxony have attained a healthy position for sustainable development in both the region and federal state state, thanks to a variety of measures to save energy as well as innovation projects and compensating for negative repercussions. Between 2017 and 2021, the port company reduced its energy consumption by 15 per cent and its CO<sub>2</sub> emissions by 21 per cent. NPorts also announced its intention to become climate-neutral by 2035. For further information and the 2023 Sustainability Report, please visit: [www.nports.de/nachhaltigkeit/](http://www.nports.de/nachhaltigkeit/).



## COLUMBUS PENINSULA READY FOR CRUISE SHIPS

**BREMERHAVEN** The first construction phase of the new Columbus Quay was completed in late March. Dr Claudia Schilling, Bremen's Senator for Science and Ports, released the first 400 metres of the new quay for the arrival of cruise ships. The first of the three new passenger bridges also opened for passengers to board a cruise ship. During the ceremonial celebration, Schilling remarked: "Bremerhaven has firmly established itself as an anchor point on the European cruise map. By renewing the infrastructure, we are moving our competitive position to the very top."

## DIGITALISATION PIONEERS CELEBRATE 50 YEARS

**BREMEN** dbh Logistics IT will be celebrating its 50th anniversary at the end of this year. The software and consulting experts for logistics have been focussing on digitisation since the company was founded back in 1973 and was also responsible for developing the first ever Port Community System in the world, which took place in Bremen and Bremerhaven in 1977. dbh now employs more than 250 staff across five German sites and has become a global player, whose software solutions and colocation data centres serve over 3,000 customers.



## BREMEN IS HOST TO EUROPEAN PORTS

**BREMEN** The annual conference of the European Sea Ports Organisation (ESPO) entitled "European ports as partners in the race towards a net-zero future" took place in Bremen in early June. More than 200 representatives from political institutions, associations, companies and port companies discussed how ports can contribute towards building a more sustainable future in Europe. The conference was opened by Bremen's Senator for Science and Ports, Dr Claudia Schilling. Andreas Bovenschulte, Mayor of Bremen, then hosted a dinner for all attendees in the town hall.



## FOCUS ON CLIMATE CRISIS

### BREMEN/UNTERWELLENBORN

On 27 April, participants of "LOGISTICS TALK" met up in Unterwellenborn, Thuringia. Following a guided tour of the Thuringia steelworks, around 60 attendees were welcomed by Sonja Reissmer, bremenports' regional representative. Martin Querengässer (Thuringia steelworks), Michael Maass (Kühne+Nagel) and Robert Howe (bremenports) discussed the global impact of the climate crisis and the inherent risks and opportunities for the ports. Afterwards, the three experts were on hand to answer further questions during the get-together.



## CONSTRUCTION START FOR NEW LOGISTICS CENTRE

**WILHELMSHAVEN** Construction of a modern logistics centre in the JadeWeserPort began in April. P3 Logistic Parks, a leading developer of logistics properties in Europe, is building three logistics warehouses in the JadeWeserPort freight transport centre in Wilhelmshaven. Covering a total area of around 122,000 square metres, the buildings will provide roughly 11,000 square metres on the mezzanine level and 7,000 square metres of office space. Robert C. Spies Industrial Real Estate and CBRE from Hamburg have been commissioned to market the property. The first phase is due to be completed in the first quarter of 2024.





## SUSTAINABLE PORTS IN LOWER SAXONY

**OLDENBURG** At the annual press conference of the Lower Saxony seaports in late March, Seaports of Niedersachsen, the port marketing company, presented its cargo handling figures for 2022. Around 54 million tonnes were recorded for the seaports – Brake, Cuxhaven, Emden, Leer, Nordenham, Oldenburg, Papenburg, Stade and Wilhelmshaven – equivalent to a six per cent rise compared to 2021. Furthermore, roughly 117 million euros were invested in the ports in 2022, significantly more than in previous years. This figure was mainly due to the construction of the LNG terminals in Wilhelmshaven and Stade. At the press conference, Lower Saxony’s Minister for Economic Affairs and Transport, Olaf Lies, stated: “The ports play a central role in securing the energy supply for Germany as well as in the energy transition”. Focussing on digitalisation as a possible impetus for North German port cooperation, he said: “As far as container handling, in particular, is concerned, the handling of cars and agricultural products as well as the expansion of offshore wind farm capacities and securing the future supply of energy for Germany, Lower Saxony can incorporate the strengths of its ports due to their location in a closer cooperation among German ports.”



### MIDDLE SEA DYKE TO BE REINFORCED

**BREMERHAVEN** Initial works to the Middle Sea Dyke Section began in early May. This is the last section of the sea dyke in Bremerhaven, spanning a stretch of 1.4 kilometres, to be strengthened by building to a height of 8.40 metres above sea level. The dyke is to be upgraded in line with specifications set out by the Senator for Climate Protection, Environment, Mobility, Urban Development and Housing. The “Coastal Protection Master Plan”, put forward by the federal states of Bremen and Lower Saxony, takes into account current calculations on future climate development. Completion is scheduled for 2025.



### ØRSTED NOW OPERATES OUT OF EMDEN

**EMDEN** The Danish energy company Ørsted opened a project office on the Südkai of the Seaport of Emden in March, in order to coordinate locally the installation works of “Borkum Riffgrund 3” and “Gode Wind 3”. Ørsted is working alongside the Ems Ports Agency and Steve-doring Beteiligungs GmbH (epas) to build both offshore wind farms off the East Frisian coast in the North Sea. The new office space is mainly intended to enable Ørsted, which by its own account intends to become one of the leading global producers of green energy, to manage the offshore construction site.

### STRONG NETWORKING FORCE

**MUNICH** “transport logistic”, the international leading trade fair for logistics, mobility, IT and supply chain management, reopened its doors in Munich in May after a four-year break. Among the exhibitors were bremenports, Seaports of Niedersachsen and JadeWeserPort, who were also well supported by other regional attendees and representatives on attractive joint stands from the various port locations. Olaf Lies, Minister of Economic Affairs for Lower Saxony, was also present to fly the flag. The partners attracted visitors to their stands during the four-day event, thanks to their cumulative expert knowledge and broad scope of logistical and maritime services. Take a closer look: [www.bremenports.de/TL23](http://www.bremenports.de/TL23)



### TO GROUP: KELLER NOW AUTHORISED OFFICER

**BREMEN** On 1 April, Ninette Keller was appointed an authorised officer of Transport Overseas Logistics, thus sending a strong signal in the growth strategy featuring women senior managers. Keller is a qualified shipping agent and has been working for TO Logistics in Bremen since 2016. She is now the training officer and bears much responsibility. Following her appointment as authorised signatory, Tim Oltmann, CEO of the TO Group, stepped down as MD of Transport Overseas Logistics. Senior management comprises Christian Weber and Sebastian Kozak.

# TEACHING ROBOTS WITH A FLICK OF THE WRIST

With its no-code software Wandelbots Teaching and a so-called TracePen, the Dresden start-up Wandelbots enables just about anyone to teach robots new abilities with a flick of the wrist. You do not need any programming skills at all to teach artificial helpers how to weld and glue or have them work in logistics or the automotive industry.



Human and machine collaborate with Wandelbots Teaching.

**T**he TracePen works like a computer mouse and can be combined with different attachments such as a welding nozzle, a glue gun or any other tool. With the pen in their hand, the 'writer' then performs the desired movements, which are simultaneously recorded by sensors in the input device and then transmitted as data to the Wandelbots Teaching app. Software processes these data and translates the movements into algorithms, which the robot can then reproduce accordingly. "In this way, we can ensure that robot programming is no longer restricted to experts – in line with our motto 'Robots for the people'. Automating robot applications is up to 20 times faster and ten times more affordable than other market options," explained Christian Piechnick, CEO and co-founder of Wandelbots.

According to Piechnick, this technology can even be used to teach different robot models from different manufacturers in the same way.

Initially launched as an offshoot of TU Dresden in 2017 with a handful of employees, the Wandelbots start-up now has around 160 employees from 17 different countries and maintains partnerships with OT system integrators in Germany, Europe and the US. Initial financing has now reached more than USD 123 million. Wandelbots has already received the German Startup Award (2020) and the Saxon Founder Award (2019) for its work and its innovative ideas.

Robots from Universal Robots and Yaskawa are currently equipped with the teaching technology at over 100 Wandelbots customers, including Volkswagen, Bayer and Fraunhofer. Wandelbots has been working successfully with Volkswagen since 2018. In the case of the car manufacturer, it was primarily 'intelligent clothing' that in recent years enabled an important step towards today's TracePen and guided robots during assembly and repair. Via sensors and actuators in a jacket or gloves, a person would transmit their movements to software, which would 'tell' the robot what to do. (bre) □



**'We can ensure that robot programming is no longer just in the hands of experts.'**

Christian Piechnick, CEO and co-founder of Wandelbots



## ENERGYPORT IS OF NATIONAL IMPORTANCE

**BREMEN** In late March, the Bremen Senate gave the go-ahead for the planning of an EnergyPort in Bremerhaven. The southern fishing port

## FOCUS IS ON SUSTAINABILITY

**BREMEN** This year's "Maritime Research Forum", which was organised together with the City University of Applied Sciences (HSB) in March, focussed on projects for more sustainability in the future. The forum attracted roughly 100 participants from the worlds of science, industry and politics. In her welcome address, the Bremen Senator for Science and Ports, Dr Claudia Schilling (centre), emphasised the central role of Bremen in the pending change process. No other location in Germany offers such diversity in maritime and marine research disciplines as this Hanseatic city on the River Weser.

will become an important element in the successful development of the port for energy transition. "Germany has set itself the goal of becoming independent as far as possible in terms of energy supply and reliance on renewable energy in the fight against climate change". Dr Andreas Bovenschulte, Bremen's mayor, stated that both goals cannot be achieved without efficient ports, meaning that an EnergyPort in Bremerhaven is of "national importance".



## BLG LOGISTICS CONSIDERS USE OF ELECTRIC TRUCKS

**BREMEN/BERLIN** In April, the BLG Group started tests with a Volvo FH Electric, an electrically driven tractor unit, for inner-city truck traffic at Falkensee near Berlin. After the initial tests on practical viability were over, BLG Regional Manager Michael John stated: "We were able to reduce both CO<sub>2</sub> emissions and urban traffic noise as a result of using electric trucks." The use of electric drives for inner-city logistics would be the next step for the BLG Group, which, as part of its "Mission Climate", has set itself the goal of becoming climate-neutral by 2030



## STIMULI FOR NAUTICAL TRAINING

**BREMEN** The "Berufsbildungsstelle Seeschiffahrt" (BBS), a German vocational training institute for maritime shipping, published its 2022 annual report in late April. In this report, the Association makes it clear that the number of new recruits, compared to 2021, had risen by ten per cent, but that this rise did not address the desired trend reversal. "We need even more maritime training recruits, in order to guarantee maritime know-how in shipping and thus in Germany as a business location," emphasised the chairmen of BBS Erik Hirsch and Peter Geitmann. We will only achieve this goal if the right channels are found to make the attractiveness of various training and apprenticeship programmes in shipping tangible for young people. A step in the right direction will be this year's programme of events, including an open day that will take place at all three maritime vocational colleges in Elsfleth, Lübeck-Travemünde and Rostock in September. Moreover, the BBS intends to honour the 40th anniversary of ship mechanic training in November this year, with a festive event on the training ship "Deutschland". This will be followed on the next day by the BBS "2nd Training Conference", where the future course and further impetus will be discussed.



PHOTO: BREMENPORTS, ANN GABRYSCH GMC, BLG LOGISTICS, BERUFSBILDUNGSSTELLE SEESCHIFFFAHRT



## POLLUTION BELOW THRESHOLDS

**BREMERHAVEN** The immissions from various emission sources of air pollutants in the area of the city of Bremerhaven's overseas port area do not pose any health risks for the surrounding residential areas. This is the pleasing result of a study presented in March, which looked at the values for nitrogen oxide, sulphur

dioxide, particulate matter and carbon dioxide for the entirety of CY2019. "The assessment of air pollutant immissions was carried out in comparison with the existing assessment values according to the 39th German Immission Control Legislation (BImSchV) and in relation to local conditions," stated bremenports in its press release.



## A COMMITMENT TO WILHELMSHAVEN

**WILHELMSHAVEN** With NaturLink, the first food supplier has relocated to Freight Village (GVZ) JadeWeserPort Wilhelmshaven. The company from Dortmund supplies natural fruit and vegetable raw materials that are required by the beverage, ice-cream and food industries. Construction will take place

in two phases and will include a hall with office space, laboratory and warehouse, where products can be picked individually according to customer requirements. Building on the 1.8-hectare site is due to start in early 2024. Around twelve million euros has been invested in Wilhelmshaven.



## A JOINT EFFORT FOR A SUSTAINABLE FUTURE

**BREMEN** In March, the 4th Maritime Research Forum took place at the City University of Applied Sciences (HSB). Around 100 experts debated projects related to the sustainable use of maritime resources. Young scientists at five stands presented their work on: port and hinterland, ship optimisation, detection, marine biology and operational ship operations. The main goals of all the projects are the protection of the marine environment, avoidance of emissions as a contribution to climate protection, and optimisation of processes to reduce the use of resources.

## PRESENTATION WITH A TAILWIND FROM LOWER SAXONY

### OLDENBURG/COPENHAGEN

Seaports of Niedersachsen and Niedersachsen Ports used the "WindEurope" annual event in Copenhagen as a platform to present both onshore and offshore wind energy projects in the Lower Saxony seaports in late April. They not only enjoyed active support from seven co-exhibitors – Cuxhaven Agency for Economic Development, Anker Schifffahrts-Gesellschaft, Cuxport, Ems Ports Agency and Stevedoring (epas), EVAG Emdor Verkehrs und Automotive Gesellschaft mbH, Jade-Dienst and von Weert-Ihnen – but also from numerous representatives of Lower Saxony port locations.



## LIST OF DEMANDS PRESENTED AT ELECTION

**BREMEN** In the run-up to the local elections in Bremen on 14 May, the Bremen Chamber of Commerce, BHV – Bremische Hafens- und Logistikvertretung, Bremen Freight Forwarders Association, Association of Bremen shipowners, ISH – an initiative of the City of Bremen ports and GVZ Entwicklungsgesellschaft Bremen – presented a catalogue of demands containing ten points. They made an appeal to the future Bremen Senate to perceive port policy as a "fundamentally important task for the future". In face of current and futures challenges, the six associations from the industry advocated a "Master Plan for the Port and Logistics for the State of Bremen". Furthermore, this catalogue contains points, including availability and prospects, infrastructure and hinterland connections, optimisation of processes and renovation of the quay of the CT Bremerhaven, as well as seven other demands. For further details, please visit: [www.bhv-bremen.de](http://www.bhv-bremen.de).



## NEW CAMPUS FOR OFFSHORE DRONES IN CUXHAVEN

**CUXHAVEN** With the Offshore Drone Campus Cuxhaven (ODCC), Fraunhofer IFAM created, in March, a test and development infrastructure for unmanned aviation systems for offshore use. The new locations offer “unique local and technical opportunities to further develop offshore drones together with scientific partners and industry,” announced the Fraunhofer IFAM. The main research areas include the safe utilisation of drones for offshore work, as well as the development of new safeguarding concepts for engines and materials for use in flying devices.

## CONTINUED COOPERATION BY WIND TRADE FAIRS

**HUSUM/HAMBURG** In April, the partner agreement for the “WindEnergy Hamburg” and “Husum Wind” trade fairs, which has been in force since 2014, was extended until December 2029. “Both fairs will continue to differ from each other in the future and will provide an extensive and unique range of products and services,” emphasised the heads of both trade fairs Bernd Aufderheide and Michael Lohmann. “WindEnergy Hamburg” takes place in even years and is a leading trade fair for the global market. By contrast, “Husum Wind” takes place in odd years and is geared towards the German-speaking market.



## BLG BEGINS LIGHTHOUSE PROJECT WITH MERCEDES-BENZ

**BREMEN** In early May, BLG LOGISTICS celebrated the inauguration of the new XXL logistics plant C3 Bremen together with Mercedes-Benz. Robert Habeck, Federal Minister for Economic Affairs and Climate Action, Andreas Bovenschulte, Mayor of Bremen and Bremen’s Senator for Climate Protection, Environment, Mobility, Urban Development and Housing Maike Schaefer were all present to witness the symbolic act of cutting a green ribbon. “The C3 Bremen Logistics can be considered in many respects a blueprint for the construction and design of logistics properties for the future,” said Frank Dreeke, BLG LOGISTICS GROUP board chairman. The facility is powered by Germany’s largest continuous roof-mounted photovoltaic system.



## CULTURAL CHANGE WITH SMARTPORT STRATEGY

**BREMEN/BREMERHAVEN** Numerous digitalisation projects (see “Main Topic” p 6) have already been implemented in Bremen’s ports together with players from the port industry. The next major step – “SmartPort” strategy – has now been carried out. In April, the Bremen Senate approved the analysis developed by bremenports on behalf of the Senator for Science and Ports as well as further planning. Dr Claudia Schilling, Bremen’s Senator for Science and Ports stated: “New technologies such as AI, the Internet of Things and Big Data also offer huge opportunities for ports and the maritime industry. Nevertheless, they pose major challenges at the same time, which we can only overcome together. The ‘SmartPort’ strategy will enable us to initiate a cultural change within the port community and to set up overarching and shareable structures. This will allow us to ensure that Bremen’s ports become more digital, sustainable and efficient, so that we remain competitive in the future, too”. The ‘SmartPort’ strategy is based on extensive analyses, including a survey of stakeholders and opportunity-risk assessment. It envisages that, first of all, port stakeholders such as shipowners, terminals and service providers will network with authorities and port-related institutions and develop common goals in terms of digitalisation plus the way to achieve them. The aim is to create new and useful applications and intelligent systems for all stakeholders.

2023		 <b>GERMAN PORTS</b>	
<b>SAVE THE DATE</b>  Numerous exciting events have been announced and are planned. However, there may still be short-term postponements after the editorial deadline. The information published here is subject to change. We would recommend that you check again shortly before the event is due to take place, for instance on our website <a href="http://www.logistics-pilot.com/event-kalender/">www.logistics-pilot.com/event-kalender/</a>	<b>JUN</b>	<b>1. – 2. 6. 2023</b>	<b>ESPO Conference</b> <a href="http://www.bremenports.de">www.bremenports.de</a> Bremen, Germany
		<b>4. 6. 2023</b>	<b>Excursion to Lune Plate</b> <a href="http://www.bremenports.de/en/events">www.bremenports.de/en/events</a> Bremerhaven, Germany
		<b>6. – 8. 6. 2023</b>	<b>Breakbulk Europe</b> <a href="http://www.europe.breakbulk.com/home">www.europe.breakbulk.com/home</a> Rotterdam, Netherlands
		<b>7. – 9. 6. 2023</b>	<b>World Congress of Dredging and Surveying</b> <a href="http://www.bremenports.de/en/events">www.bremenports.de/en/events</a> Bremen, Germany
		<b>15. 6. 2023</b>	<b>German Ports Reception</b> <a href="http://www.bremenports.de/en/events">www.bremenports.de/en/events</a> Berlin, Germany
	<b>JUL</b>	<b>11. 7. 2023</b>	<b>Hafenclub Special</b> <a href="http://www.bhv-bremen.de">www.bhv-bremen.de</a> Bremen, Germany
	<b>AUG</b>	<b>31. 8. 2023</b>	<b>LOGISTICS TALK</b> <a href="http://www.bremenports.de/veranstaltungen">www.bremenports.de/veranstaltungen</a> Haiger/Düsseldorf/Neuss, Germany
	<b>SEP</b>	<b>1. 9. 2023</b>	<b>31st Lower Saxony Port Day</b> <a href="http://www.seaports.de">www.seaports.de</a> Stade, Germany
		<b>1. 9. 2023</b>	<b>56th Captain's Day</b> <a href="http://www.bremenports.de/en/events">www.bremenports.de/en/events</a> Bremen, Germany
		<b>5. 9. 2023</b>	<b>Hafen trifft Festland</b> <a href="http://www.jadeweserport.de">www.jadeweserport.de</a> Frankfurt, Germany
		<b>14. – 15. 9. 2023</b>	<b>National Maritime Conference</b> <a href="http://www.bmwk.de">www.bmwk.de</a> Bremen, Germany
		<b>21. – 22. 9. 2023</b>	<b>ENVOCONNECT</b> <a href="http://www.envoconnect.com">www.envoconnect.com</a> Bremerhaven, Germany
		<b>26. – 28. 9. 2023</b>	<b>Breakbulk Americas</b> <a href="http://www.americas.breakbulk.com/home">www.americas.breakbulk.com/home</a> Houston, USA
		<b>27. – 28. 9. 2023</b>	<b>HYDROGEN Technology</b> <a href="http://www.bremenports.de/en/events">www.bremenports.de/en/events</a> Bremen, Germany


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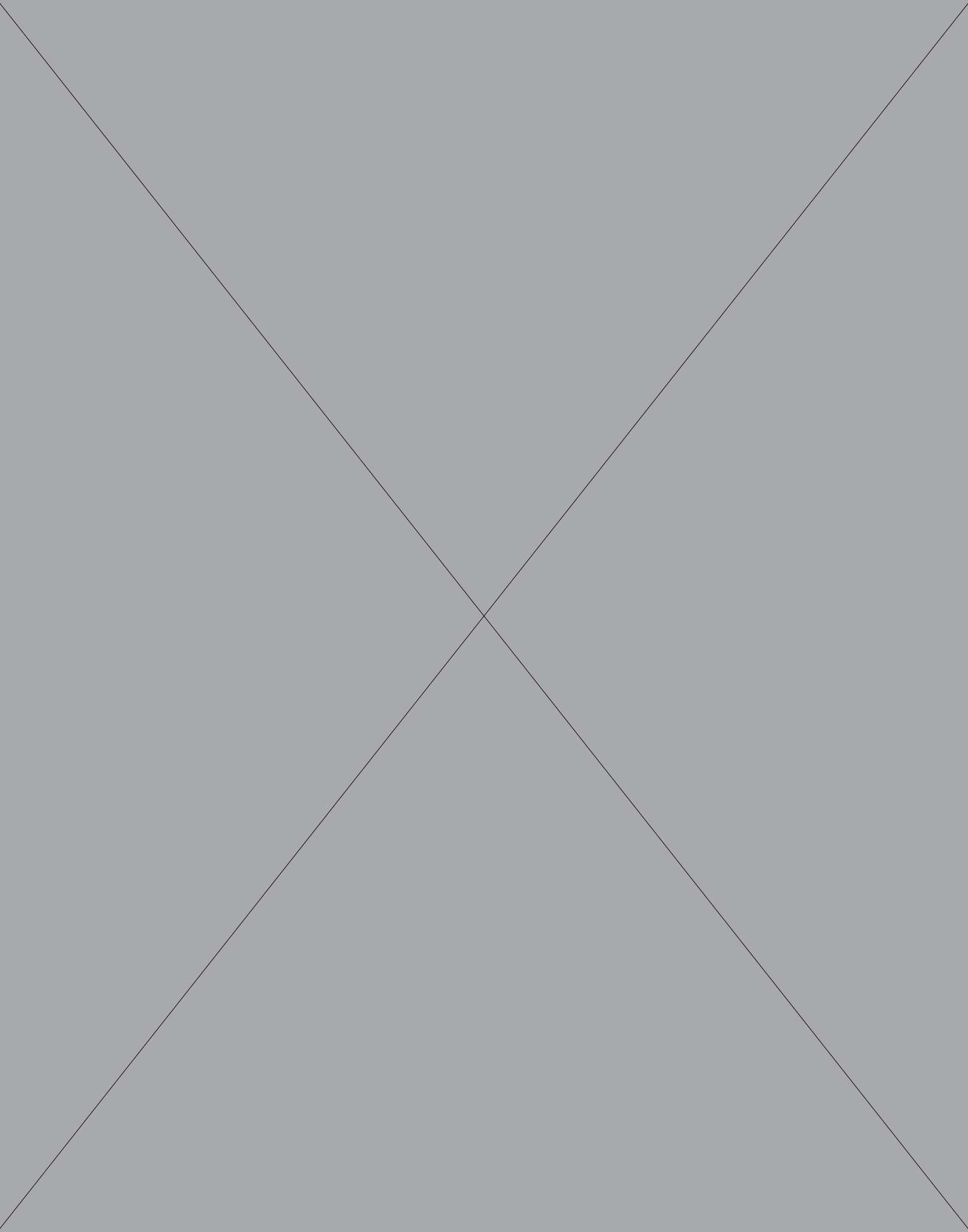
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