Inspire

ISSUE 2021/22

GATE'S MAGAZINE ON INNOVATIVE & SUSTAINABLE AIRPORT TECHNOLOGIES

Computed Tomography Scanners for Security Checkpoints

Faster screening process with Vanderlande

Neural Network for AutoID

With artificial intelligence PSI Logistics optimize the automated baggage handling at Hamburg Airport

Baggage Handling Unchained

More efficiency with Industry 4.0 powered by Lenze

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Inspired by Future

Jens Reinhard,
Managing Director
GATE

PHOTOS: Oxmox Oxmoxmox

Across the city in an air taxi, a short trip into space, the parcel by drone – the world of flying is becoming ever more colorful and innovative. And flying is becoming more sustainable – be it through further efficiency improvements, optimized flight routes or more sustainable fuels. In parallel, airports are evolving. They are focusing on more comfort and safety for passengers, using the latest technologies to save energy and thus CO_2, and investing in digitalization to make processes faster and more transparent. As the leading association in the airport industry, GATE sees itself as a driving force in this business. Our member companies have a worldwide reputation for reliable, innovative and sustainable solutions.

With our first issue of INSPIRE, we would like to give you a little insight into the innovative power of our members: from digital, cloud-based announcement systems to e-mobility vehicles for the apron and state-of-the-art baggage reconciliation systems. INSPIRE shows the range of possibilities how an airport of tomorrow can be more innovative and sustainable. Let us inspire you.

Yours sincerely
Jens Reinhard

PS: Would you like to become a member of our GATE network and exchange ideas with industry experts? Contact me and check in with us.

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Platform for New Airport Technologies

GATE MEMBERS TEST PROTOTYPES AT INNOAIRPORT

Passenger comfort, security, climate neutrality – the demands on a future-proof airport are high. In times of COVID-19 and in the focus of politics, innovations must no longer be a random product, but must be applied in all areas. Pilot projects are difficult to test in ongoing operations, which are determined by tight timings. However, this is made possible by GATE InnoAirport, where member companies can design, optimize and test pioneering airport technologies under real conditions.

"Innovations are the driving force of the aviation industry. To promote them and bring them quickly into the field, InnoAirport offers the perfect infrastructure," summarizes GATE program manager Kevin Fischer. 'The Future Area, Proto Area and Ready Area' are available to put new airport industry solutions, technologies and products to the test. "As Rostock-Laage Airport, we are pleased to be part of the GATE family and to offer ourselves as a platform. All areas of the airport can be used for this purpose. We have short paths and a one-stop store for decisions, so we can implement projects and achieve results in the shortest possible time," comments Dörthe Hausmann, managing director of Rostock-Laage Airport. Kevin Fischer leads the dialog with all GATE members who want to transfer their innovation capabilities into real operations and thus gain a competitive advantage. PSI Logistics, Sittig Technologies, Materna IPS and Gorgy Timing have already implemented their visions for the future. For example, the baggage reconciliation system installed by PSI Logistics ensures the compliant tracking of baggage. For this, the company supplied the necessary software, the core of the product, required servers, a control station

„Innovations are the driving force of the aviation industry. To promote them and bring them quickly into the field, InnoAirport offers the perfect infrastructure."
Program Manager GATE InnoAirport
Kevin Fischer

1 Michael Karkein (from left), Kevin Fischer and Dörthe Hausmann at the X-ray system with the baggage reconciliation system of PSI Logistics
2 The camera of the baggage reconciliation system
3 Check-in for the next generation: the Pax.Go self-service solution from Materna IPS

The Ledi® TIMER airport display from Gorgy Timing can be used to optimize processes during the aircraft preparation phase

and touch workstation, handheld devices for ground staff and surveillance camera systems (CCTV). With the 'PAXGuide Cloud', Sittig Technologies is ushering in a new era for passenger and staff information at Rostock-Laage Airport. The cloud-based, automated solution plays out loudspeaker announcements in multiple languages. The modular software architecture allows the announcement system to be tailored precisely to the needs of different airports. "International cruise passengers can thus be addressed effortlessly in their local language," comments Johannes Sittig. The Pax.Go kiosk from Materna IPS simplifies the check-in and baggage drop-off process. Gorgy Timing's airport display Ledi® TIMER optimizes operations during the aircraft preparation phase by visually presenting the most important information to pilots, flight attendants and ground staff.

Further pilot projects by GATE members are in the starting blocks.

"In the future, we would like to focus more on the topic of green airport and sustainability, for one thing. Here, we want to use the apron in particular to test autonomous driving," announces Michael Karkein, senior executive special operation at Rostock-Laage Airport. For example, there are concrete plans with the joint venture SAE Smart Airport Equipment, which has created a development platform with integrated hardware and software technologies that can control vehicles fully autonomously on the airport apron.

InnoAirport offers three service segments:

1. FUTURE AREA

Perfect for products that need to be taken to the next level and need an airport specific adaption.

- Future-Workshops apply creative methods like business canvas, design thinking etc.
- Kick-off speeches + keynote presentations
- 'Futurelab' providing infrastructure and services for every step of the innovation process
- Talent/workforce/creative/science/technology and investors networks

2. PROTO AREA

The innovation has reached a high degree of maturity, but the company has to acquire further data and experiences from routine operation on an airport.

- 24/7 access to airport infrastructure for data collection, product references, certification etc.
- Pre-business tests: market acceptance and usability
- Sneak preview: product presentation prior to market release

3. READY AREA

The product is market-ready and needs to be presented and marked.

- Product presentations for customers and stakeholders, press conferences, photo shootings, launch campaigns etc.
- Development of airport-specific sales and marketing concepts Open Innovation: customer feedback on new products and services
- Last mile: innovation development under real-life conditions

PHOTOS: GATE

Kevin Fischer
Program Manager
GATE InnoAirport

GATE InnoAirport
www.gate-alliance.com/innoairport/

The Future of Passenger Announcements

PAXGUIDE CLOUD AUTOMATES HIGH QUALITY INFORMATION TRANSFER

PHOTOS: iStock

The efficient routing of passengers at airports stands and falls with the transmission of information via various media. Automated announcements for passengers via the public sound systems are a central aspect here. Automated announcement systems increase efficiency and customer comfort – from entering the terminal to boarding the aircraft. However, existing solutions often have the problem that they require complex IT infrastructures on site. The purchase and maintenance costs for such a system are high, especially for smaller and medium-sized airports.

Sittig, the German market leader for automatic announcement systems, has taken up this challenge and, with the support of the state of Hesse, is developing its announcement system into a digitalized cloud solution – the ‘PAXGuide Cloud’ system. In the future, automatic announcements will be streamed from Sittig’s cloud to airports worldwide. Interfaces to other systems such as camera systems or public address systems ensure maximum automation. The modular software architecture enables customers to easily and individually adapt the system to their own requirements. ‘PAXGuide Cloud’ thus offers maximum flexibility and significantly reduces the expenditure for on-site IT infrastructures. An initial prototype of the system is being put into operation and tested at GATE InnoAirport Rostock-Laage. With the further development, Sittig would like to make its system for automatic announcements available in particular to small and medium-sized airport groups, station networks and industrial sites worldwide.

DECENTRALIZATION

No server hardware and expenses for its maintenance thanks to the latest high secure cloud technology

INTEGRATION

Deep integration with public address systems for unified and detailed audio management

AUTOMATION

Interfaces to third-party systems (e.g. camera systems) automate a wide range of airport processes

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Sittig Technologies GmbH
www.sittig.de

Premier Face Recognition Technology for Border and Airport Security

ENABLING TRAVELER VERIFICATION AND PHOTO CAPTURE, PEOPLE FLOW MANAGEMENT AND WATCH LIST CHECKS

1

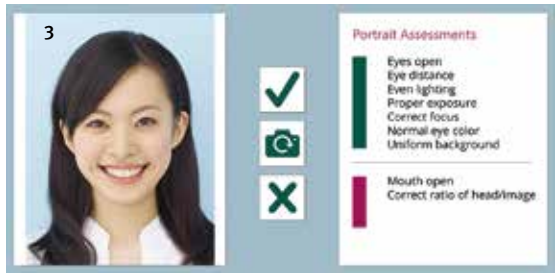
A glance at the camera, and the gate opens. Face recognition has proven essential to automating border control processes, and eGates are playing an important role in creating airports with fewer touchpoints and faster processing times. For many years, Cognitec's FaceVACS-Entry VS technology has supported fast person verification in eGates that allows travelers to complete self-service border checks in a few seconds.

Quick capture of biometric photos

Cognitec recently extended its entry product line to offer an all-inclusive device for capturing standards-compliant biometric photos. The FaceVACS-Entry CS system finds the face of the person, adjusts the position of the camera to body height, and takes best-quality pictures. Animated user guidance instructs the user to take the correct position in front of the camera. The technology supports automatic or operator-triggered image acquisition, and can be easily integrated into any border control IT system. Light-weight, slim design and flexible mounting methods allow for varied installation options on booths, counters, walls, or in free-standing pillars.

2

3



1 Alerting to crowds, long lines, and persons not wearing required masks: Anonymous image analysis with FaceVACS-VideoScan
2 Combining smart hardware with Cognitec's software for image quality checks: the FaceVACS-Entry CS device
3 The capture result: a best-quality, cropped image, checked for a configurable list of ISO compliance requirements

Video security and people flow management

In addition to automating border crossing processes, face recognition is gaining momentum as a reliable alert mechanism for real-time events. Cognitec's FaceVACS-VideoScan compares and analyzes faces seen in live video streams and instantly finds known individuals. In addition, security staff can receive an anonymous alarm if a person is not wearing a mask, if too many people gather in a specific area, or if a person does not pass through a high-security area within a required time frame. Anonymous facial analysis also allows airports to count individuals and track people movement in time and space. For example, the software measures waiting times and persons in queues, and triggers alerts to direct traffic, open counters or security lanes, or to schedule more staff for high-traffic times.

PHOTOS: Cognitec Systems

Cognitec Systems GmbH
www.cognitec.com

Intelligent Drive Technology for Airport Baggage and Cargo Logistics

AN INTERVIEW WITH SWETLANA THOMPSON AND ANDREAS BAUSER, SEW-EURODRIVE

SEW-EURODRIVE is a successful, international, family-owned company. How is your company responding to the current challenges in the airport industry?

MS. SWETLANA THOMPSON SEW-EURODRIVE has been supplying drive technology for baggage handling systems for over 50 years and we stay committed to the industry. We also see that certain trends that have been emerging in past years have been amplified by the pandemic. Besides the race to make all passenger handling processes touchless the need for aviation and airports to become carbon neutral is more urgent than ever. SEW-EURODRIVE has a portfolio of IE4 and IE5 energy efficient drives and control electronics that can save up to 50% of electricity and thus contribute to airports to achieve their CO_2 reduction targets.

Can you give us a specific product example and elaborate on the concrete benefits?

MR. ANDREAS BAUSER Our new MOVI-C® product portfolio is optimized to fulfill the current and future requirements in baggage handling systems. An example of this is the MOVIGEAR® performance drive unit. It not only meets the highest achievable efficiency class IE5, but also reduces the losses of the motor approximately by an additional 50% compared to the permitted values. Our MOVIGEAR® is a fully integrated drive unit comprising a decentralized inverter, a permanent magnet motor and a highly efficient gearbox. Furthermore, it has an optimized acoustic design without vibrating fan guards or vibrating cooling fins. This halves the noise emission from the drive, for a much more comfortable working environment.

What is particularly special about SEW-EURODRIVE products in regards to lifetime reliability?

MR. BAUSER We have been increasing the reliability of our products from generation to generation over the last 90 years as we know that this is a crucial factor for baggage operations. Recently we have also taken that a step further with our unique options such as Premium Sine Sealings or the SEW GearOil that increase the lifetime of our gear motors. Furthermore, we offer complete Premium protection packages with extended warranty as well as condition-based monitoring for our systems. Altogether, this scalable portfolio of special solutions enables trouble-free operation for many years.

1

1 MOVI-C® modular automation system – powered by SEW-EURODRIVE
2 Airport installations with drive technology from SEW-EURODRIVE

2

What is your personal highlight being part of the airport industry?

MS. THOMPSON Baggage sorters are true high-performance systems and system availability is of utmost importance. Our gear motors drive reliably baggage and cargo at the world's busiest airports. It is exciting to be part of the different projects as each airport baggage handling system has its unique requirements and set up. The turnaround of a project can take some time but it is very rewarding seeing your products performing at airports all around the world behind the scenes.

PHOTOS: SEW-EURODRIVE

SEW EURODRIVE

SEW-EURODRIVE GmbH & Co KG
www.sew-eurodrive.de

BAGGAGE HANDLING EXPERTISE FROM SEW-EURODRIVE

RELIABLE

In baggage handling, system uptime = on-time delivery. Airports around the world rely on SEW-EURODRIVE because of the reputation for delivering products that have a long life of trouble-free operation.

EFFICIENT & SUSTAINABLE

In decentralized installations, the above-average efficiency of the synchronous linear motors and economical mechatronic drives ensures a high level of productivity, and delivers energy savings of up to 50%.

EXACT POSITIONING

The precise control technology with software modules that are perfectly tailored to your application enable exact positioning of luggage on the conveyor.

LOW NOISE LEVEL

The drives have quiet, vibration-free motors – a huge bonus for both passengers and staff.

FASTER SORTING

High performance drive systems with shorter response time and local module controller enable increased throughput.

SIMPLER INSTALLATIONS

Integrated drive systems, single-cable technology, standardized interfaces and functions support faster installations and project implementation.

ECONOMIC

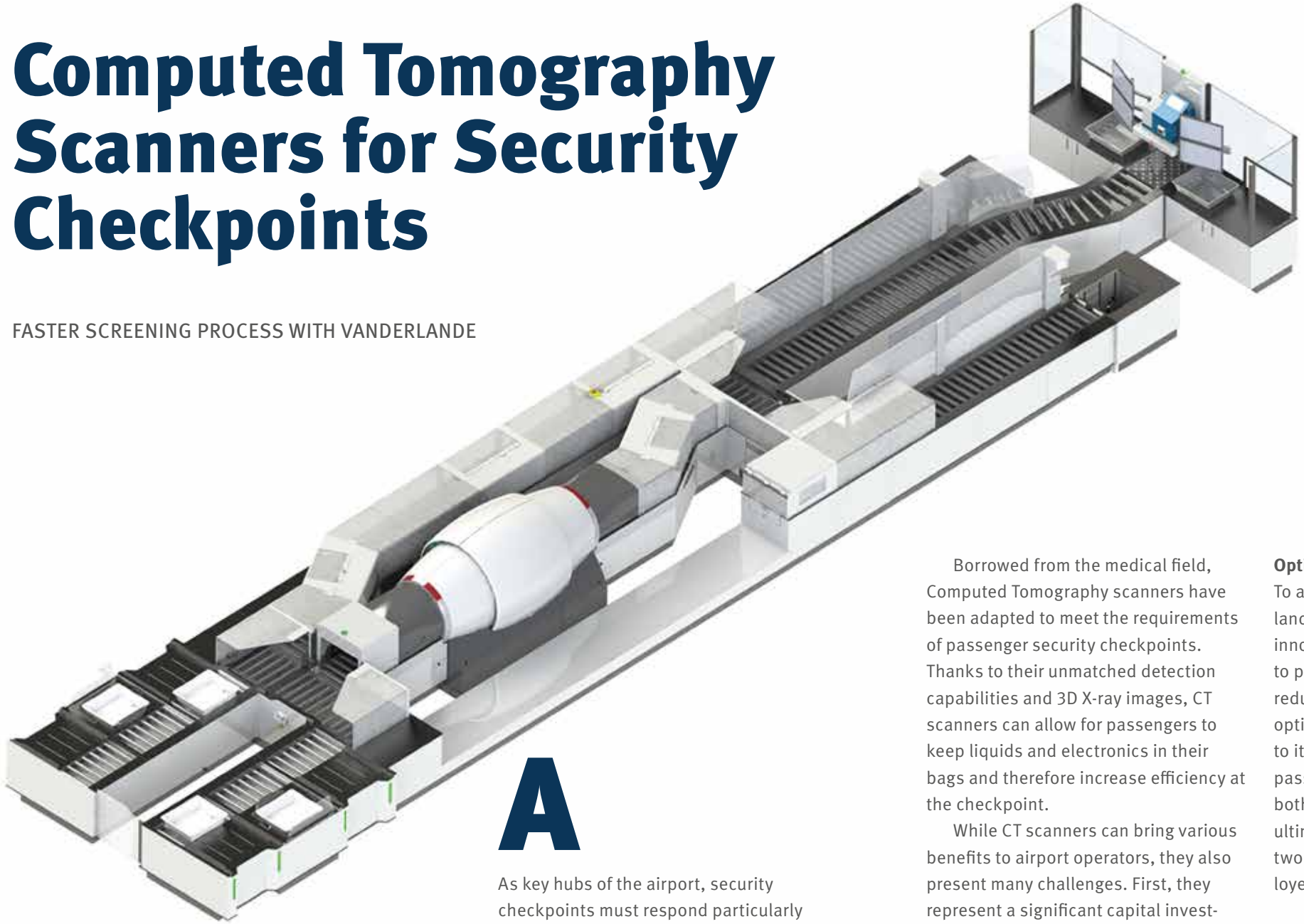
Lower investment cost as system can be realized with fewer variants and overall reduced life cycle costs with low-maintenance technologies.

GLOBAL

With locations in 52 countries, customers can rely on the global production and product availability, with local service and support.

Computed Tomography Scanners for Security Checkpoints

FASTER SCREENING PROCESS WITH VANDERLANDE



The Vanderlande PAX MX2 Checkpoint Solution

As key hubs of the airport, security checkpoints must respond particularly quickly to new market trends, passenger traffic variations, changing regulations and technological advancements.

Since the COVID-19 pandemic, the requirements are higher than ever. To speed up the processes, airports and security authorities are turning to a special technology: CT scanners.

Borrowed from the medical field, Computed Tomography scanners have been adapted to meet the requirements of passenger security checkpoints. Thanks to their unmatched detection capabilities and 3D X-ray images, CT scanners can allow for passengers to keep liquids and electronics in their bags and therefore increase efficiency at the checkpoint.

While CT scanners can bring various benefits to airport operators, they also present many challenges. First, they represent a significant capital investment when compared to traditional X-ray scanners. CT machines also take more space and the complexity of their 3D images often means that the image analysis process takes longer to accomplish. For optimal performance, CT scanners should be integrated with the right hardware and software solutions.

Optimization through innovation

To address these challenges, Vanderlande has designed PAX MX2 – an innovative dual-lane solution designed to provide a faster screening process, reduce the checkpoint footprint, and optimize screening equipment. Thanks to its unique design, PAX MX2 allows passengers to divest – and reclaim – on both sides of the screening machine, ultimately offering similar efficiency of two conventional lanes with fewer employees and less equipment.

A seamless, stress-free process

The passenger's journey through the checkpoint with a PAX MX2 system is similar to the one they would experience with other conventional solutions; they first divest their belongings, then go through the body scanner, and recuperate their belongings at the other end of

the lane or meet with an agent for secondary inspection. With PAX MX2 however the entire system has been designed to offer travellers an ergonomic and intuitive solution, from trays provided at waist height at the divest area to the automatic collection of empty trays at the end of the lane. The lane's smart sorting programme also ensures that trays are diverted to the same side they were originally divested on to ensure a smooth screening process.

Improved working conditions

For agents, working conditions are improved as PAX MX2 was conceived to limit the number of manual tasks required. For example, agents performing secondary inspection don't have to lift trays to the recheck table anymore, they can simply slide them over. Empty trays are also automatically stacked and moved back to the beginning of the lane thanks to the system's smart camera system and tray return system. And perhaps the most beneficial aspect of the PAX MX2 solution for agents is its integration with Vanderlande's remote screening software PAX Multiplex. By centralizing the image analysis process, the software allows agents to perform their task away from the checkpoint and its distractions.

A focus on efficiency

Airport operators can also reap significant benefits from the PAX MX2 and PAX Multiplex combination. By doubling the capacity at the divest and reclaim areas, the dual lane allows for the optimal use of the CT scanner and can reduce the number of machines required for the whole checkpoint almost in half depending on the local requirements. The system's design combined with the flexibility provided by the remote screening software can also contribute to a better use of human resources and reduce operating costs.

Towards a self-service screening process

For further improvements in efficiency and passenger experience, PAX MX2 can also be integrated with Vanderlande's PAX Divest Assistant. The new self-service solution allows passengers to go through the divestment process without the help of a local agent. Support agents are located outside of the checkpoint area and are connected to passengers in need of assistance via video calls. This capability brings airports increased flexibility while providing employees with a safer and more pleasant work environment. While there can be no one-size-fits-all solution for airport security screening, the integration of innovations such as PAX MX2 and PAX Divest Assistant are the first step towards the creation of a future-proof checkpoint where efficiency and passenger experience go hand in hand.

1 Security Checkpoint with Vanderlande PAX MX2
2 The Vanderlande Divestment Area PAX MX2

Vanderlande Industries GmbH
www.vanderlande.com

PHOTOS: Vanderlande

Frictionless Travel Through Innovation

SUPPORTING AIRPORTS WITH TOUCHLESS AUTOMATION

1

With automation being a familiar concept for the aviation industry in general, airport security is no different. The latest solutions in automated self-boarding gates have a dual purpose – restoring passenger confidence in flying, whilst maximizing passenger throughput for efficient and seamless boarding. By automating verification measures throughout the airport (pre-security, lounge & boarding), not only does this mitigate person to person and person to surface contact, but processes are as dynamic and as optimized as possible, queues are reduced, in turn resulting in satisfied passengers and contented airport personnel. Supporting airports with automation is the key focus of Gunnebo's specialist aviation team. To date, in excess of 3,000 cabinets have been installed in more than 100 airports worldwide, with large and small projects happening all the time and expanding at an impressive growth rate, it's extremely likely a frequent flyer will have traveled through a Gunnebo gate. With innovation at its core, Gunnebo are looking to increase the roll out of touchless and biometric-enabled gates due to the numerous benefits for both the passenger and the airport.

2

"BIOMETRICS OFFERS US THE OPPORTUNITY TO FURTHER ACCELERATE AND SIMPLIFY PROCESSES AT MUNICH AIRPORT FOR THE BENEFIT OF TRAVELERS. THIS NOT ONLY INCREASES PASSENGER COMFORT, BUT ALSO – THANKS TO THE CONTACTLESS PROCESS – HYGIENE STANDARDS AND HEALTH PROTECTION."
JOST LAMMERS,
CEO OF MUNICH AIRPORT

A touchless airport experience

Particularly in recent times of pandemic recovery worldwide, the airport team are collaborating with airports for the installation of contactless operation gates for the health and safety enhancements that they allow. Reducing key touchpoints throughout the airport is a crucial consideration of the industry, with obsolete and/or manual passenger processing being replaced with ultramodern and hygienic self-service gates.

Bespoke technology integration

Leading-edge airport security gates include biometric verification for the most contemporary and seamless solution in ID checks. Since one size does not fit all, gates are available in a range of identification integration options; from iris, facial and fingerprint biometric detection to travel document readers with barcode, QR code, regional ID card and NFC/RFID capabilities, with modularity a consideration of the airport range. By future-proofing gates, biometric upgrades and other amendments are easily made after initial integration. Gunnebo is accredited by all major CUTE/CUPPS providers, with data processing in line with ITPS standards. In being a strategic partner with key players in aviation, the airport team have advanced understanding of industry concerns and solutions, fulfilling Gunnebo's promise of innovation and quality.

PHOTOS: ebm-papst/Mattia Balsamini, Flughafen München/Stephan Görlich

1 Gunnebo in-house research and development
2 Biometric self-service gates in action at Munich airport

GUNNEBO

Gunnebo Entrance Control Ltd
www.gunneboentrancecontrol.com

Shaping the Future Together

> More than ever, the airport industry and airport management must pull together to meet the major challenges of climate protection. The GATE association sees itself as an initiator and facilitator in this task.
>
> KAY BÄRENFÄNGER, PRESIDENT GATE

> Long before the change in government in Germany, it became clear that flying must become greener. For many years, ADV airports have been working towards more sustainable solutions. We are pleased to have GATE as a strong partner by our side.
>
> RALPH BEISEL, GENERAL MANAGER
> AIRPORT ASSOCIATION ADV

> In the future, we would like to offer our apron to test autonomous driving on the apron and to be able to implement projects together with manufacturers and airlines. New technologies are also to be tested, particularly in the area of green airports.
>
> DÖRTHE HAUSMANN, MANAGING DIRECTOR
> ROSTOCK-LAAGE AIRPORT

> A major driver for making airports more sustainable is the apron. Innovative e-mobility concepts and hydrogen drives for GSE make a major contribution to CO_2 reduction.
>
> PATRICIA VASCONCELOS,
> MANAGING DIRECTOR
> COBUS INDUSTRIES

> There is a huge demand for airport technology in India. The Indian airport authorities increasingly focus on the quality and innovative strength of these solutions.
>
> SANYAL DESAI, FOUNDING PARTNER INDIAIRPORT

> The development of innovative solutions is more than ever a team sport. As the established trade fair organizer in the world of airports, we are pleased to offer the industry a platform for exchange on this – classic face-to-face and digital.
>
> NICOLA HAMANN, MANAGING DIRECTOR
> MACK-BROOKS EXHIBITIONS LTD

> The economic consequences of the pandemic do not make the readiness to invest any easier, but all the more necessary – regardless of whether this involves the environment, digitalization and automation, or further operational and therefore financial efficiency increases. The main challenge for innovation in ground handling is its structure, which is global but very heterogeneous with players, infrastructures and respective frameworks.
>
> CHRISTAIN NOACK, CEO HAM GROUND HANDLING

> Through modern technological and operational measures, there is considerable potential to make airports and the entire flight operations much more sustainable and efficient. What cannot be optimized accordingly through short- and medium-term innovation programs could, furthermore, be compensated by targeted programs. The financial resources gained from this should in turn flow into precisely this technological and operational progress.
>
> THOMAS MAYER, GENERAL MANAGER INTEREST GROUP OF REGIONAL AIRPORTS IDRF E. V.

Economical and Sustainable – New Apron Perspectives

ADVANCED TECHNICAL AND FINANCIAL CONCEPTS

An airport is like a jigsaw puzzle – all the pieces must interlock perfectly, so that operations run smoothly and flight schedules are kept. Almost at the end, but with a very high priority, is the efficient and comfortable handling of passengers on the apron. At COBUS Industries, the worldwide leading manufacturer of low-floor buses for airports, the focus is not only on the needs of the air traveler, but also on the issue of sustainability. With well thought-out technical as well as economic concepts, COBUS Industries ensures greener aprons and financially viable solutions.

e.START – from diesel to electric drive

With the conversion of an existing diesel fleet into a fully electric driven one, COBUS Industries provides a unique offer for airports, ground handlers and airlines operating apron busses. The concept creates a balance between emissions, performances, and costs suitable for each customer's requirements. It supports customers to meet environmental regulations without making any compromises on quality and technology.

Just one detail: LTO (Lithium Titanate Oxide) battery packs, enabling quick charges and top-ups at any time, are installed on the bus roof to preserve crucial space inside the passenger compartment. Customers can choose between three e.START packages each including electrification: full interior renovation, exterior facelift or customer-specific overhaul. Geneva and Salzburg Airport have already started to benefit from the e.START concept: More than 50% of the components of the existing COBUS fleet are reused and operation as well as maintenance costs are reduced considerably.

Smart business solutions

Challenging times demand for inventive ideas, hence COBUS Industries offers different types of financing options for its complete product range: hire purchase, financial lease, operating lease, and short- or long-term rental. Each solution will be tailor-made according to each customer's business model.

For example, if a customer uses hire purchase of a state-of-the-art e.COBUS 3000, he turns CAPEX into OPEX, pays a monthly fixed rate and owns the electric apron bus with the last rate. The customer is provided access to advanced technology without relying on his own capital or he can upgrade to new equipment anytime during or at the end of the contract term.

Alexander Weiss, Purchasing Infrastructure Salzburg Airport, states: „Salzburg Airport has been focusing on sustainability for many years. The current laws and the driving profile on the apron suggested using electrically powered apron buses. The e.COBUS buses are ideally suited for the short distances on the airport apron."

1

2

3

1 Batteries on the roof for maximum passenger capacity
2 Sustainable electric motor
3 Plug-in on the side of the bus for quick and opportunity charging

PHOTOS: COBUS Industries

COBUS

COBUS Industries GmbH
www.cobus-industries.de

Where to Invest for Success in the Next 18 Months

INTERVIEW WITH SERGIO COLELLA, PRESIDENT OF SITA EUROPE

Using the crisis as an opportunity – often thought of, but not always put into practice. However, IT service provider SITA has developed visions and considered where to invest in the next 18 months. In this interview, Sergio Colella, president of SITA Europe, reveals what the company is currently working on.

How did you survive the crisis?

MR. SERGIO COLELLA COVID-19 has had a dramatic impact on the aviation industry both financially and operationally. It has required our industry to re-prioritize technology spend, do more with less, and implement health and safety protocols.

As we are rebuilding following the pandemic, I think that the industry focus must firmly be on delivering healthy, frictionless passenger processing for a safer passenger experience while ensuring operations are more resilient, more agile, and more cost-efficient in what will be a volatile recovery.

As the world's leading service-provider of integrated IT business solutions and communication services for the air transport industry our expertise enabled us to identify several key challenges for the air transport industry's rebuild in the next 18 months.

How do you manage new health requirements?

Certainly, the way we travel will never be the same, tourists are not just impatient to travel, they are impatient to travel safely. That's why SITA enables the air transport industry to deliver a frictionless, low-contact, efficient passenger journey in compliance with IATA, ACI, ICAO and WHO safety recommendations. It is essential to join forces in order to improve future passenger processing experiences but also to meet pandemic requirements. Our solutions such as SITA Health Protect and SITA Health ETA have been developed with this perspective.

How do we improve the passenger experience on the ground?

In the context of COVID-19, with all its uncertainties, travelers need to be reassured. To do so, airports and airlines must deliver a touchless airport experience. With SITA Flex, SITA Smart Path biometrics, and self-service touchpoints throughout the passenger's journey, SITA is enabling a low-touch airport experience for greater efficiency and improved passenger satisfaction.

I also believe that in the airport of the future queues will be a long gone memory, we have already started here in Germany where Lufthansa Group has launched a contactless way for passengers to report delayed baggage from mobile devices, avoiding long queues at busy baggage service counters or offices, using SITA's WorldTracer® Self Service.

How do we deliver more effective and cost-efficient airport operations?

In 2020, a million jobs disappeared and the industry losses totalled $126 billion. The road to recovery will be a long one, therefore cost containment is now a top priority for our partners. SITA's global platforms enable airports and airlines to 'do more with less', with the ability to achieve a fast, cost-effective transition to new normal operations at airports and borders, anywhere.

How do we make our industry more sustainable?

This crisis has offered us an opportunity to rethink our strategies and restart operations in a new way. The recovery of the aviation sector is crucial for wider economic recovery, nevertheless investment in sustainability must remain at the top of our agenda.

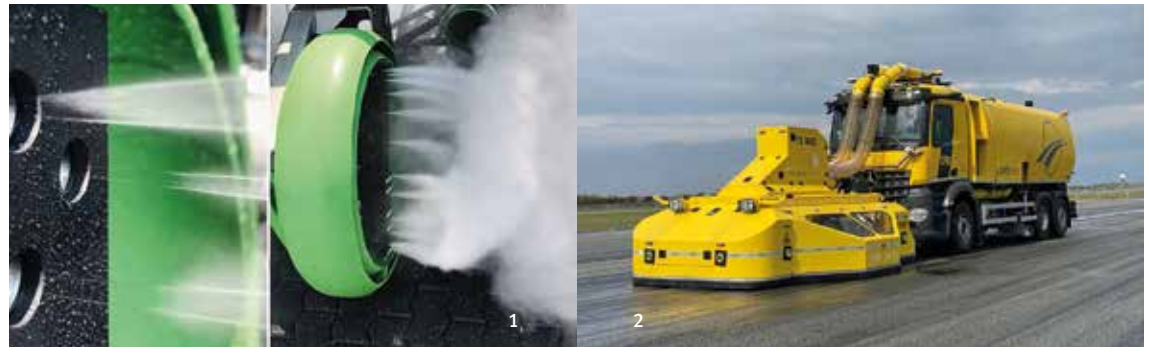
This year we achieved CarbonNeutral® company certification and acquired a Safety Line, a start-up specializing in helping pilots and airlines limit CO_2 emissions is a concrete example of our commitment to helping aviation with its goals for a greener and more resilient future. And the pool of joint customers using the Safety Line portfolio already includes Air France, Transavia Airlines, Aerologic and Condor.

PHOTOS: SITA

SITA
www.sita.aero

Clean Runways Thanks to Innovative State of the Art Technology

DUO TWISTER FROM TRAFFIC-LINES REMOVES RUBBER ABRASION



1 traffic-lines annular gap suction hood: high-class cleaning result, gentle to the surface
2 traffic-lines duo twister in action on the runway

The fact that aprons and runways must be free of contamination in order to provide the highest level of safety for pilots, passengers and airport employees is not a new requirement. For some years now, additionally resource saving and maximum surface protection have been more in focus than ever before. This is where traffic-lines' patented ultra-high pressure water blasting technology comes in.

With the annular gap suction system, the company has been going its own way since 2014 and setting new standards. The patented process enables extremely surface-friendly cleaning and, in conjunction with the traffic-lines waterloop system (water filtration unit), is the only process on the market that offers the possibility of direct jet water reuse. traffic-lines duo twister, with a working width of up to 4.20 m, cleans surfaces of rubber abrasion, oil and paraffin contamination highly efficiently with an area performance of up to 6,000 m²/h and is even capable of cleaning runway lighting.

Every setting under control

The efficiency of the traffic-lines machines is based not only on the unique cleaning and area performance, but also on the principle of "one machine – one operator". This is realized by the comprehensive controller system with the latest industry standard 4.0, which allows the operator to make all relevant settings in seconds from the driver's cab via the intuitively operable touch panel and to adjust them to requirements at any time. The operator is supported by the innovative telemetry system. All important system parameters are permanently recorded. "Machine needs attention" proactively reports the need for maintenance/renewal of wear parts and thus prevents unplanned downtimes. This long-term monitoring not only identifies individual optimization potential for the entire system. New tasks can be perfectly planned and prepared in advance. And last but not least: remote maintenance by traffic-lines specialists is possible at any time.

One machine – versatile use

Resource conservation can also be achieved by reducing the vehicle fleet itself. Here, the modular design of the traffic-lines system allows the machine to be adapted to different work areas. Just by exchanging the front modules or using the fully functional sweeper function. 3 in 1 machines reduce the downtimes of the individual machines and guarantee a quick return on investment.

Innovation at traffic-lines means not standing still. For example, traffic-lines has just extended its product range with the dynamic double twister, which, with two extraction hoods and a multifunctional arm that is flexible in all directions, enables a wide range of possible applications. And one thing is certain: more innovations from traffic-lines will follow…

PHOTOS: traffic-lines

tl traffic-lines GmbH
www.traffic-lines.de

1

1 Apron terminals at Hamburg Airport
2 Real-time baggage classification from check-in to the aircraft

At Hamburg Airport, PSI Logistics implemented a pilot project for the integration of artificial intelligence (AI) processes into the airport software for the coordinated control of automated baggage handling. The solution increases efficiency and optimizes processes, supports archiving and documentation requirements, and reduces investment costs for recording technology.

2

With artificial intelligence PSI Logistics optimize the automated baggage handling at Hamburg Airport. The software specialist implemented a pilot project in which the solution PSIairport/BHS takes over the higher-level system control. The integration of AI increases efficiency, optimizes processes, supports archiving and documentation requirements and reduces the investment costs for recording technology.

Neural Network for AutoID

When the pandemic subsides and the previous traffic levels are reached again, around 17.5 million passengers per year will use Hamburg Airport for their vacation and business trips. This makes Germany's oldest airport one of the largest airports in the country. The key service and quality features of Hamburg Airport are the reliability, efficiency and security of the handling processes at and behind the 90 check-in counters. In baggage handling, the basis for this is an end-to-end IT infrastructure from PSI Logistics GmbH, Berlin, Germany. The IT systems installed in Hamburg range from check-in at the self-bag-drops or airline counters to loading by the handling service provider GroundSTARS. It includes management, flight information and monitoring systems as well as software for the coordinated control of operational processes: the baggage handling system (PSIairport/BHS), the baggage reconciliation system (PSIairport/BRS), the modern master computer, the "brain" of the baggage system, and the PSIairport/Connection Suite, which handles the distribution of all airline, airport and security communication information. "The airport systems of PSI Logistics support

all interfaces attached to baggage handling systems and control the areas involved in the process," summarizes Angela Lipinski, Project Manager Passenger and Baggage Logistics at Hamburg Airport.

At Hamburg Airport, PSIairport/BHS takes over the superordinate system control as well as the targeted distribution of baggage items and integration of results of the baggage control levels. Together with their sister company PSI FLS Fuzzy Logik & Neuro Systeme GmbH, PSI Logistics has now integrated AI instruments into the functional spectrum of airport systems for baggage handling with a neural network for AutoID, documentation and tracking with surveillance camera systems, CCTV (Closed-Circuit Television).

The conveyor belts of the sorting and conveyor system in Terminals 1 and 2, which are several kilometers long, transport up to 30,000 suitcases per day. On the conveyor and sorting line, 200 high-resolution cameras continuously record the baggage items linked to the flight and passenger data and their barcodes. "The AI application of the PSI software makes it possible to directly process the camera images in real time," says Lipinski. The ultra-HD cameras installed at baggage counters, feeding conveyor belts and baggage handling system track and monitor the transport of each bag. At all reporting points, up to five images from each HD camera are cut out of the video stream through triggers and saved in the database of the sorting master computer. In parallel, automated real-time analysis starts.

For deep learning, such neural networks must be 'fed' with several thousand manually captured images of luggage in different positions and from different perspectives in conventional methods. Based on computer graphics algorithms, PSI Logistics has continuously developed this system. The system now recognizes all types of baggage – including their individual characteristics – fully automatically, without phases of training and without creating separate labels. With the expansion to automated, autonomous learning of the system, not only the lead time for the commissioning of such systems has been significantly reduced. CCTV is also associated with performance increases by a factor of 10 and process quality improvements by more than a factor of 10. Result: Investments in additional scanner technology can be eliminated, the error rate falls, resources for rework, which in conventional processes at airports affect up to 10% of the baggage volume, are no longer required, and the service level increases. In addition, baggage handling and the condition of the suitcases can be seamlessly documented and archived.

Terminal 2 at Hamburg Airport

PHOTOS: Hamburg Airport/Oliver Sorg/PSI Logistics

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PSI Logistics GmbH
www.psilogistics.com/en/solutions/airport-systems/

“Soon We Will Be Able to Fly with a Clear Conscience Again”

INTERVIEW WITH KAY BÄRENFÄNGER, PRESIDENT GATE E.V.

The future challenges to aviation are great. Flying must become more sustainable and yet a broad section of the population should still be able to afford it. What contribution are you making from GATE to this?

MR. KAY BÄRENFÄNGER We recognized early that the future of flying can only be shaped by working hand in hand. As a business association, we bring as many stakeholders in the industry together as possible – airports, suppliers, aircraft manufacturers and airlines. Only by connecting the ecosystems of aircraft, airports and urban mobility we will make sustainable progress.

And how does GATE specifically bring together the individual players?

Our association offers a variety of forums to come into dialog with each other and develop new ideas – at international trade fairs, our GATE Future Conference and our working groups. In addition, InnoAirport is certainly unique for testing and presenting technologies at real airports.

How will flying develop for you personally?

Of course, air travel will be more questioned and I have a lot more meeting digitally. But I'm certainly not saying anything new that face-to-face communication remains immensely important – especially in an international context and when first meeting people and building trust. If our members continue to keep up the pace in developing sustainable innovations, we can all soon fly again with a clear conscience.

IDENTIFYING TRENDS, DEVELOPING SOLUTIONS, SETTING STANDARDS: GATE WORKING GROUPS

AUTONOMOUS APRON

From baggage handling, docking of passenger boarding bridges to operating of passenger buses, tanker and snow removal vehicles – autonomous driving will gain importance in every area of the airport. This working group is developing concepts for the standard use of autonomous vehicles.

SUSTAINABILITY

Green airport is the buzzword driving this expert working group. Together participants discuss solutions and technology from all areas in order to make airports more energy efficient and thus more sustainable. Climate-neutral operation is the declared goal. Measures to reduce CO_2 emissions will be put to the test.

MARKETING AND COMMUNICATION

Conception and planning of internal and external association communication: exhibitions, congresses, events, PR, social media, online, print.

BAGGAGE HANDLING

What will check-in look like in the future? How will baggage be recorded and tracked? How do baggage handling systems work more efficiently? These questions and others will be discussed in this working group.

SAFETY AND SECURITY

Ensuring the security of passengers and airport visitors in a consistent and sustainable manner has become a primary objective at airports in recent years. The participants in this working group deal with forward-looking concepts that guarantee the safety of people and infrastructure.

DIGITALIZATION & ARTIFICIAL INTELLIGENCE

To operate an airport IT systems, computer centres and global networking for data exchange with all parties involved in air traffic are indispensable. In which areas can AI optimize processes at airports? For instance automatic baggage recognition became possible through the use of neural networks and high-resolution camera images. Potentially disruptive potentials for change in cloud computing, data analytics and information pooling etc. are discussed in this working group.

PHOTO: GATE

The Tilting Belt Conveyor

FIRST-OF-ITS-KIND BELT TECHNOLOGY THAT SERVES THREE DIRECTIONS

Typical belt conveyor installations have either a horizontal sortation unit that sorts baggage straight ahead or to one side, or a vertical sortation unit that sorts up and down. When it comes to directing bags straight ahead and to the left or the right, it gets complicated, because further equipment is necessary. And that takes a lot of valuable space to accommodate all the devices.

This is where VarioBelt TilterPlus from Siemens Logistics comes into play: This innovative belt solution has a highly functional tilting mechanism that directs bags in three directions – with just one device. Bags can therefore be conveyed not only straight ahead, but also to the left and right without additional machinery. Baggage sorting space in airports is thus used more optimally. Siemens Logistics' decades of experience have gone into making this allrounder belt conveyor possible.

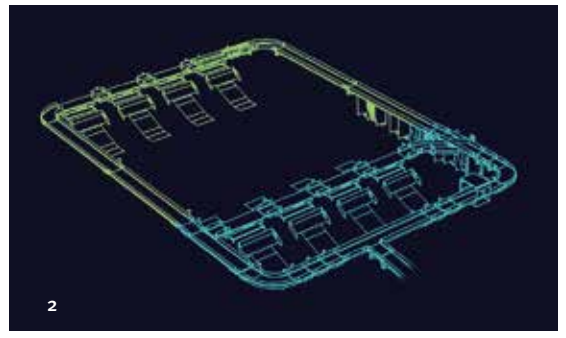
The modular design principle of VarioBelt TilterPlus allows flexible system expansions. That lets airport operators implement baggage handling systems that are right sized for today yet can be easily adjusted for different requirements in the future. For example, if it becomes apparent that capacities are no longer sufficient, the existing system can be extended quickly and easily. How? By integrating the desired number of additional VarioBelt TilterPlus into the existing belt conveyor system.

Sorting in all directions

Aside from easy expansions, VarioBelt TilterPlus offers a high level of layout versatility. End points for baggage removal in the make-up area and other conveyor technology can be installed in any desired conveying direction. Highly individual configurations to the connecting conveyor can therefore be realized without having to implement additional devices to change direction.

Furthermore, various interfaces to VarioBelt TilterPlus are possible, such as to chutes, conveyors and several other individual connections. At the same time, VarioBelt TilterPlus is easy to maintain. Components like drive drums, motors, and rollers can be replaced in short time. For airports that already use VarioBelt technology, the same spare parts can be utilized.

The ability of three-way sortation with only one device, quick and efficient capacity expansions and a compact footprint make VarioBelt TilterPlus an innovative solution – for both regional airports and international hubs.



1 Connectivity solutions at 90, 45 and zero degrees are possible – without implementing curves
2 Further VarioBelt TilterPlus' devices (green) can easily be adapted to an existing sorting line (blue)

PHOTOS: Siemens Logistics

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SIEMENS

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Baggage Handling Unchained

MORE EFFICIENCY WITH INDUSTRY 4.0 POWERED BY LENZE

Not only under smoking factory chimneys, Industry 4.0 is also in use at airports. Especially the operation of baggage handling systems benefits from the new technologies. With the special software solutions from Lenze, it is possible to recognize potential failures well in advance. Due to the significantly increased transparency, the operation of handling systems can also be optimized according to demand.

W

"Where is my suitcase?" After many hours flying and long before reaching their final destination, many travelers are annoyed when there are delays. It's not only in Corona times, with social distancing rules and indoor capacity restrictions, that airport operators are interested in ensuring that passengers can leave the baggage claim quickly and that crowds don't get too large. So it is all the more important that the baggage handling system runs to it's optimum.

Data-driven operation concepts

Dashboards for surveillance of system conditions are nothing new. But with further digitilization and networking of devices and sensors in the course of Industry 4.0, a much more extensive, more accurate and up-to-date picture of the baggage handling system can be drawn. Based on the available data and information, the system's predictability and automatic adaptability can be increased in the future. By doing so problems can be identified before they lead to a complete standstill of the system. Another aspect is the optimal control of ongoing operations, by automatically adapting the baggage handling system to operating conditions and needs. Different dimensions are possible: expanding capacity, sustainable operation or increasing availability.

Laying of foundations

However, adding countless sensors to the baggage handling system and collecting all kinds of data does not lead to success – on the contrary, an incalculable flood of data does not contribute to the solution, and rash investments threaten the profitability of such a project. Automation specialist Lenze from Aerzen therefore not only supplies drive and control technology, but also offers users valuable support with a combination of years of experience in Industry 4.0 solutions and the necessary application knowledge.

Dashboards visualize a system by clearly displaying its capacity, status information and error messages. Ongoing operations can be monitored and controlled with little effort. At the same time, knowledge of the installed base, operating hours and conditions of use of the installed components, help to improve the efficiency of maintenance planning and spare parts stocking. The challenges of such a solution include

Tim Oliver Ricke,
Global Segment Manager Intralogistics

connectivity, data availability, data quality and the associated increase in data volume. For example, the quality and scope of the data – also with regard to the time periods covered – are crucial for deriving causalities and correlations from the data. This is a learning process, at the beginning of which it is often not clear exactly which data needs to be recorded.

Baggage conveyor optimization

In the case of a baggage handling system, this means trying to derive useful information from data to create transparency and understand what exactly is happening there. Historical data is valuated to identify error patterns and anomalies that occur – before the errors lead to failure. Well-founded predictions make it possible to move from time-based to condition-based maintenance. Combining analysis data from multiple components in the material flow can also help identify bottlenecks and critical applications in order to find approaches for possible optimization.

Instead of installing additional, cost-intensive sensors, the system operator can use the integrated oscilloscope function in modern drives, which already achieve internal signal sampling rates of currently up to 62.5 µs. That means 16,000 values per second for the drive speed alone. With a not unusual 1,000 or more drive units in the baggage handling system, this corresponds to a data volume of over 16 million values per second. In addition to this value, further data must be recorded. In order to filter, transmit and evaluate this extreme flood of data, entirely new methods of data processing are required. Machine learning algorithms in particular have proven their worth here for data analysis and anomaly detection.

Lenze's software solution can be run locally on Windows- or Linux-based edge devices or servers. The software-based gateway is connected via Industrial Ethernet and can be connected to up to 1,000 drives per unit simultaneously and in parallel. This solution can be easily integrated into existing systems.

The data is published via an MQTT broker, either in a locally closed network or in the higher-level cloud. Users gain secure access to the data without having to access the control of the baggage handling system.

The operation of the system remains unaffected by doing so. In addition to data analysis in the Fog, the data can also be evaluated in the cloud on more powerful servers. Such systems can detect not only simple deviations, but also more complex conditions, such as worn or loosened belts or damaged ball bearings.

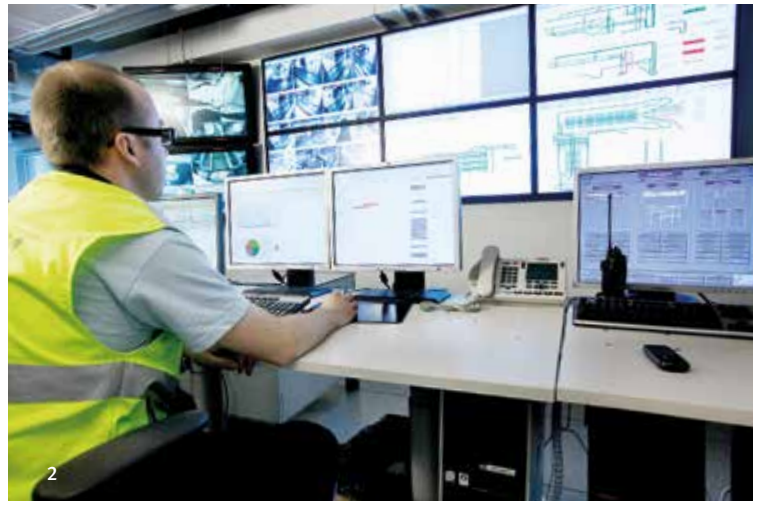
A potential still untapped

In initial projects, machine learning (ML) and artificial intelligence (AI) were used to derive algorithms for the detection of different system anomalies and error patterns in system components that require monitoring and intensive maintenance. Continuously learning systems can further increase the robustness of the recognition algorithms. The fact that it is possible in practice to monitor up to 1,000 drives, pre-process the data locally and then forward it for analysis via ML or AI, has been successfully verified. Together with customers, Lenze is moving into new areas of Industry 4.0 that are not yet covered by commodity solution.

1

1 A company's path to digital transformation is mapped out with the help of a phase model

2 With digitalization and networking in the course of Industry 4.0, monitoring of the plant status is being taken to a new level



2

PHOTOS: iStock/baona, Lenze, BEUMER

Lenze SE
www.lenze.com

Expertise in Fire Prevention Combined with Elegant Design

CASUAL SITTING IN BUSINESS LOUNGES EQUIPPED BY KUSCH+CO

Feeling good before takeoff: Seating specialist Kusch+Co by Nowy Styl knows exactly what comfort passengers want. After all, the company from Hallenberg has already furnished numerous international airports and is connected to a global network of planners and architects. The high-quality and design-oriented lounge furniture is equipped with the 'Kusch+Co fire prevention concept'. The company's fire prevention expertise was decisive for this project.

The tailor-made interior design concept for the Tegel lounge and Tempelhof lounge, named after the former Berlin airports was worked out in close co-operation with the architect's office Synarchitects. Guests can look forward to a pleasant stay in these business lounges, enjoying a stylish, comfortable and exclusive interior. Some features, geared towards the guests' safety and well-being, are invisibly incorporated, such as the fact that the seating variations all meet the stringent fire prevention standards and provide the best possible hygienic safety in these times dominated by a global pandemic. In total, the Tempelhof lounge provides round about 200 seats across an area of 910 m², though currently limited to 130 seats. The somewhat smaller Tegel lounge, stretching over 600 m², can accommodate up to 180 persons. The interior design concept of both lounges is based on the strict zoning of the different areas, e.g. reception, lounge, dining, resting and conference rooms, allocating a distinct set of materials and colors to each zone. The color schemes of the former Berlin airports Tempelhof and Tegel were updated to create a modern setting.

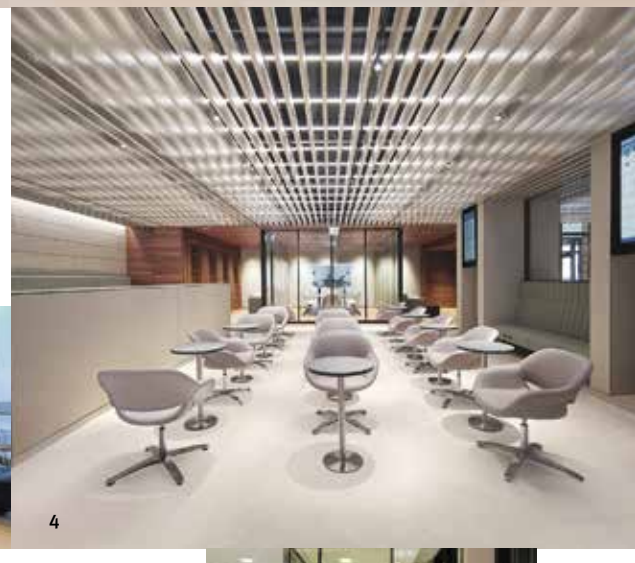
The furniture of Kusch+Co has a timeless and unobtrusive design that is nevertheless recognizable. They opted for the compact-sized and comfortable series Creva soft, available with a great variety of different variations, such as the possibility to choose between a low and a high backrest. On top of this, the optional extras for this series include power modules as well as storage tops. A special solution was developed for a design classic, the well-known lounge chair 'TV-relax'. This design from the 1960s by Prof. Luigi Colani for Kusch+Co was covered with a special fabric for the Tempelhof lounge with the aim of meeting the current fire prevention standards. From this vantage point, guests are able to enjoy the view in a relaxing posture through the floor-to-ceiling panoramic windows.

1

1 Tegel Lounge and Tempelhof Lounge have been furnished by Kusch+Co
2 Series Creva soft oozes in the Tempelhof lounge
3 The design classic: the lounger 9900 Colani Collection
4 Kusch+Co provides suitable solutions for every section of the Tegel Lounge
5 The relaxation and privacy areas feature the high-back armchairs

2

3



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PHOTOS: KUSCH+CO

KUSCH+CO by Nowy Styl

Kusch+Co GmbH
www.kusch.com

1

Well-Being Treatment for Runways

ENVIRONMENTALLY FRIENDLY CLEANING OF HOG TECHNOLOGIES

1 The Stripe Hog is a water blasting and recovery system designed for concrete airfields
2 Using 2,750 bar of pressure, a Stripe Hog can also remove or rejuvenate airfield markings
3 The systems makes removal of rubber deposits from airport runways simple

2

3

Passengers notice little of the negative effects of rubber deposits on runways that occur whenever an aircraft lands. Before, airports have used harsh chemicals to clean their runways. These chemicals not only consume more time to remove rubber deposits, but they require more personnel and equipment. The chemical runoff from these removals is not environmentally sound. The chemicals are abrasive and pose a health risk to workers. By using clean, potable water and zero chemicals, the water blasting and recovery system Stripe Hog is environmentally friendly and non-hazardous to a worker's health. Water can reach down into the pavement to clean it with the least amount of negative impact to the surface.

Using 2,750 bar (40,000 psi) of pressure, a Stripe Hog can also remove or rejuvenate airfield markings, clean and prepare surfaces, or even retexture surfaces. The company offers a variety of different vehicles in different formats – PTO engine-driven or auxiliary engine-driven. Some of the systems can be mounted to a chassis, skid, or trailer for added versatility. No matter what the model, their Stripe HOGs operate at 2,750 bar with flow rates ranging from 19 LPM up to 91 LPM.

The original Stripe Hog was developed in 1997 as the company sought to develop a machine that could perform pavement marking removal with near perfect and repeatable performance. Through rigorous research and development, the Stripe Hog pavement marking and runway rubber removal system has continued to improve in performance and now operates in 56 countries around the world.

In order to ensure the best results for any job the company also created a training program called Hog Tech University. They are the only water blasting manufacturer with a training program that requires an operator to have a license to use the equipment. This is to ensure that the equipment continues to operate properly und is maintained optimally. They also offer technical support 24/7/365 in multiple languages and are committed to shipping out 98% spare parts the same day the order is received.

"BY JOINING GATE HOG TECHNOLOGIES HAS TAKEN ANOTHER STEP TO STRENGTHEN ITS POSITION IN EUROPE AND ENSURE EVEN GREATER CUSTOMER PROXIMITY."

GERD HEINRICH

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Director of Sales, Europe & Middle East
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Hog Technologies Inc.
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PHOTOS: HOG Technologies

5G is the Key for Digitization

More and more companies are looking into 5G Campus Networks to enhance their production workflows or to automate processes. Hagen Rickmann, Managing Director Business Customers Telekom Deutschland GmbH, talks about the potential this technology can offer companies.

INTERVIEW WITH HAGEN RICKMANN

D

Deutsche Telekom is already very far advanced in the roll-out of 5G. In Germany, for example, more than 85 percent of people can already surf on the 5G network – what is the situation like for industry?

MR. HAGEN RICKMANN We know that industry has high hopes for 5G. And rightly so! Because 5G is the key to connected factories, smart logistics and automated delivery systems. It is the key for digitalization. The solutions we offer for business customers we call “5G campus networks”. Deutsche Telekom is currently setting up many of these campus networks for companies and partners across industry. Not only in Germany, but also in Austria, the Czech Republic and Hungary.

So according to the name, campus networks are special mobile networks for company campuses?

Yes. A campus network is a locally limited mobile network. One that is tailored precisely to the needs of our business customers. The defined location for that network can be a building, a company, a factory site – or even an airport. For one of our customers, the Deutsche Messe AG in Hanover, for example, we built a customized network of this kind over an exhibition area of 1.4 million square meters. With the campus network, we ensure comprehensive, high-performance 5G coverage. And in a hybrid manner – with both a public and a private network.

Hagen Rickman,
Managing Director Business Customers
Telekom Deutschland GmbH

"ONLY 5G DELIVERS THE HIGH TRANSMISSION CAPACITIES, THE EXTREMELY LOW LATENCY, THE HIGH RELIABILITY, FLEXIBLE BANDWIDTHS, AND GUARANTEED DATA RATES THAT ARE NEEDED FOR INDUSTRY 4.0."

What is the advantage of combining private and public mobile networks?
Let's stay with the example of Messe Hannover: The public part of the campus network ensures excellent coverage for visitors. The private network, on the other hand, can then only be used by Deutsche Messe AG. And, for example, by exhibitors for their applications. This private network is not accessible from the outside. The idea behind this: Particularly important data will stay in the exclusive, private network. With this 5G campus network, our customer is able to create a 5G smart venue, where firms can trial their digital solutions before implementing them in their production or live environments. The private network enables the highest possible availability and reliability, as its capacity is not shared with public users.

Why can't this simply be done via WiFi? WiFi is usually already available at many companies?
Only 5G delivers the high transmission capacities, the extremely low latency, the high reliability, flexible bandwidths, and guaranteed data rates that are needed for industry 4.0. WiFi, even though it's very good, has its limits. This quickly becomes clear in the example of another customer: HHLA Sky in Hamburg. The logistics company uses a campus network to control its fleet of drones. Here, it needs a reliable mobile network for HHLA Sky to be able to navigate without delays. This simply cannot be adequately realized with WiFi. The so-called "hand-over" runs much more reliably and smoothly in mobile communications. Because that's exactly what mobile communications was technologically designed for: mobile applications and moving objects. Like drones. Or any autonomous driving vehicle.

What applications are conceivable for the airport sector?
The list of possibilities is long. It could be any vehicle which could drive autonomously like buses, fuel tankers or service vehicles. These could be controlled via the 5G network. Moreover, downloading and uploading aircraft data such as media content or maintenance data needs a high bandwidth. Accessing security systems for biometric control of passengers and carrying out maintenance work using AR glasses – all this will be possible in real time with 5G campus networks. Large, critical data volumes that need to be exchanged quickly, reliably, securely, and in a mobile way – that's exactly what 5G campus networks can deliver.

And travelers will certainly be pleased with fast mobile communications via the improved public network. But a few antennas alone are not enough, are they?
5G brings unprecedented bandwidth and latency. The delay time is only a few milliseconds. We will have achieved the optimum for the customer when a combination of 5G networks, edge computing and artificial intelligence work hand-in-hand. 5G campus networks are a complex technology that require a lot of teamwork. We work with partners like Ericsson and collaborate with our colleagues at T-Systems. Thanks to our partnerships with device manufacturers, we have also built up an entire ecosystem for campus networks which includes industry end-to-end solutions and the integration of existing solutions. We can offer a complete package tailored to companies' needs. Campus networks increase efficiency. Ultimately, however, campus networks offer competitive advantage – a game changer for our customers.

PHOTOS: Getty Images/E+/guvendemir/Montage: Evelyn Ebert Meneses, Deutsche Telekom AG

Software for Virtual Interlining

Airsiders covers the full virtual interline journey – from flight booking to baggage handling

CONNECTING THE DOTS IN AIR TRAVEL

Interlining enables airlines to expand their networks by adding new transfer connections and thus serve new destinations. However, even when route development and marketing teams identify new partnership opportunities, today's legacy processes prevent them from starting cooperations with other carriers quickly & cost-efficiently. This leaves many routes demanded by passengers un(der)served.

The gap has partially been filled by the concept of 'virtual' interlining, whereby online travel agencies bundle two independent point-to-point tickets between separate airlines and offer it as a one combined booking to the passenger. This model can offer cheaper, better, or faster connections on any given date, which is why the sale of such tickets have increased by a 300% in 2020.

While the opportunity to connect new airlines is clear, mass-market adoption is still limited due to the drawbacks of today's solutions. That means for example that travelers are required to collect and re-check their luggage at the hub airport. Furthermore disruptions are poorly managed – if at all – and data is not shared between parties. These factors negatively impact the passenger experience, and hence the carrier's brand.

Airsiders, a travel-technology company backed by Beumer Group, focuses on the grow of aeronautical revenue for airports by enabling easy network expansion for their airline customers. Via a patent-pending solution the start-up makes the virtual interlining experience seamless. The mission is to align all stakeholders in the value chain, across all stages of the passenger journey.

PHOTOS: Airsiders

BENEFITS FOR PASSENGERS

+ Identifying new routes and making them available via airlines and travel agencies
+ Integrating with baggage handling & CUSS to enable through-check to the final destination
+ Offering 24/7 customer support, flight insurance, and indoor airport wayfinding
+ Aligning information and processes between airlines, airports, and ground handlers

BENEFITS FOR AIRPORTS

+ Simplify network expansion for airlines
+ Unlock up to 30% new routes
+ Charge two landing fees instead of one

Airsiders
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www.airsiders.com

Game Changer for Airport Logistics

THE NEW DUODRIVE GEAR MOTOR FROM NORD DRIVESYSTEMS

With every new and further development, the important goals of NORD DRIVESYSTEMS are future viability, improved cost-effectiveness, higher energy efficiency and optimized functionality and performance. One example of this is the DuoDrive gear motor. With up to 92% efficiency, it offers one of the highest efficiencies of a gear motor in this performance class on the market and achieves a very high system efficiency even in partial load operation.

This was achieved by integrating our IE5+ synchronous motor into a single-stage parallel shaft gear. Integration here means that the motor is housed in the same housing as the gearbox components without separation – a completely new approach to the design of gear motors, for which we have filed a patent application. With the IE5+ synchronous motor, the drive NORD has already succeeded in significantly reducing losses once again compared with the current IE4 series. The DuoDrive goes one step further and sets new standards in terms of performance, installation space and variant reduction. With optimized system efficiency, high power density, compact housing dimensions and very low noise emissions, it is a real game changer for airport logistics. Overall, this results in a significant reduction in the total cost of ownership (TCO) compared with other drive systems. The reduced energy consumption also has a positive impact on the carbon footprint.

1 2

On the road to CO_2 neutrality, airport logistics plays a crucial role, because climate-friendly aviation actually starts on the ground. For example, the drive technology of baggage handling systems offers great potential for reducing energy consumption. Baggage handling systems, which often extend over several kilometers, have a large number of drives and thus make up a significant proportion of the energy and resource requirements of airports. The DuoDrive gear motor from NORD DRIVESYSTEMS supports baggage logistics with optimized system efficiency and extremely high power density.

1 Patent pending: DuoDrive gear unit
2 Thanks to its compact design, the gearmotor achieves very high efficiency with a system efficiency up to 92%
3 Innovative, compatible, future-proof: DuoDrive, IE5+ and NORDAC ON (frequency inverter)

3

PHOTOS: NORD DRIVESYSTEMS

Would you like to learn more about the new NORD DuoDrive? Watch our expert talk and learn about all the advantages: youtu.be/pW1kGrOcZxk

NORD DRIVESYSTEMS

NORD DRIVESYSTEMS Group
www.nord.com

Digital Decision Making for a Sustainable World

INFORM SOLVES COMPLEX SITUATIONS WITH INTELLIGENT SOFTWARE

PHOTO: Getty Images

Artificial intelligence, machine learning and operations research enable digital decision making. The Aachen-based company INFORM develops software based on precisely these technologies for the optimization of business processes. Classic IT systems are complemented with the software to increase the profitability and resilience of airlines, airports and ground handlers worldwide. The software also benefits manufacturers, wholesalers, distribution centers, container terminals and financial service providers and analyzes large amounts of data in seconds, calculates numerous decision variants, and suggests the best possible solution.

With GroundStar, INFORM delivers a comprehensive software suite for the optimization of aviation ground handling processes. It fulfills all requirements for companies involved in airline and airport operations, covering a wide range of solutions from ground handling, aircraft engineering and airport operations, to hub and turnaround management. GroundStar helps customers operate smoothly and cost-effectively, while concurrently improving on-time performance and passenger satisfaction. With over 200 installations in more than 170 airports of varying sizes, INFORM has proven its effective and long-term capacity for innovation.

Furthermore, INFORM's GroundStar planning, real-time allocation and turnaround management solutions are all designed to reduce unnecessary use of ground support equipment (GSE). This enhanced resource management ultimately results in lower fuel consumption and emissions. "These 'greener' practices support airports' broader sustainability goals," says Uschi Schulte-Sasse, SVP Aviation at INFORM. "Sustainability is a strategic corporate goal of INFORM".

INFORM AT GATE

At GATE, INFORM provides its expertise in two working groups: one which creates concepts for the standard use of autonomous vehicles on the apron and the other which focuses on all aspects of sustainability. The participants discuss and examine solutions for making airports more energy-efficient and thus more sustainable.

INFORM – Institut für Operations Research und Management GmbH
www.inform-software.com

Politics Should Paint a More Positive Picture of Aviation of the Future

INTERVIEW WITH CHERYL SCHWAHN,
YOUNG PROFESSIONAL IN THE AVIATION BUSINESS

“Sustainability in aviation in 2020 is defined by much more than flight shame” – clear statement from a woman who is intensely concerned with the climate crisis. Cheryl Schwahn, a graduate of the Aeronautical Engineering/Aviation Logistics program, is able to quickly summarize where she stands on the EU Flightpath 2050. But she also lets others have their say – in her podcast, ‘RWY to Sustainability’.

What connects you to aviation?
MS. CHERYL SCHWAHN I sat in an airplane for the first time at the age of six weeks and traveled with Cessnas and Pipers constantly throughout my childhood. After graduating from high school, it was clear to me that I couldn’t avoid aviation, so I studied aeronautical engineering and aviation logistics at the TH Wildau.

And was that the right decision?
When I started studying in 2015, I was still enthusiastic about the industry. However, one thing really saddened me. Five years I studied. Five years looking at how aviation has evolved and will continue to evolve. Yet in the midst of the climate crisis, no one is making it clear to us young engineers that our task is climate-smart aviation. Although this is part of FlightPath2050, it was not even a topic in the 2020 training. This frustration became a motivation for me to develop the RWY to Sustainability podcast.

What is the goal of the podcast?
For me and my co-host Lisa Marie Erb, the main goal is to raise awareness for the topic of sustainability in aviation and to show that a lot is already happening in the industry. We also want to motivate young professionals to become active in this field themselves. We also see the podcast as a mouthpiece and interface between industry, politics and the next generation. The exchange between the generations is particularly important to us. This gives rise to new thought experiments as well as driving ideas and more understanding for each other.

Is this exclusively about aircraft emissions?
No, we address a much broader spectrum in the discussions. For example, we are also interested in intermodal mobility concepts and innovations in airport infrastructure. Start-ups also play an important role. As a podcast of the German Regional Airports Interest Group, we are networked with many companies that are testing new technologies at the smaller airports and thus working toward climate goals.

What idea/vision would you like to move forward with quickly?
Since we can hardly reduce emissions with the existing technologies at the moment, I think there have to be new concepts for utilization in order to save flights. I would also like to see more exchange with young companies: There are so many creative ideas lying dormant in the aviation industry that unfortunately often fail due to bureaucratic red tape and a lack of capital. Start-ups are often ridiculed when individual approaches fail. But we are in a learning process where every failure and every success contributes to our goal. Instead, why not just continue to discuss at eye level? And why not call for more innovation competitions?

What do you think is lacking?
Politicians should first paint a more positive picture of the aviation of the future and show that climate targets can also be achieved through technical innovations. To do this, they must first become more aware of their responsibility in climate policy. For example, aid packages in the Corona crisis should not be adopted without linking them to climate protection conditions. I also call for a reduction in bureaucratic hurdles, a faster adaptation of regulations to the needs of technical developments, and also new mobility concepts in aviation. Every industry, every company and every department should also ask itself what it can actively do to combat the climate crisis.

Who would you like to have as a discussion partner for your next podcasts?
Frankfurt, Hamburg or Stuttgart – I would like to talk to representatives of these airports about their sustainability projects. I would also like to have more guests from the world of politics. But companies like Airbus or Deutsche Aircraft are also on my list.

PHOTOS: Private

RWY to Sustainability
The podcast by Lisa Marie Erb & Cheryl Schwahn

www.podcast.de/podcast/928578/rwy-to-sustainability

Meet GATE at Exhibitions and Conferences

inter airport Europe, Munich, November 9 – 12, 2021

- International trade fair for airport equipment, technology, design & service

Passenger Terminal EXPO, Paris, April 5 – 7, 2022

- The international conference and exhibition for passenger terminal design, management, security and technology

airport show Dubai, May 17 – 19, 2022

- Leading event for airport construction, operation, technology and services in the MENA region and the Indian subcontinent

inter airport china, Beijing, August 31 – September 02, 2022

- inter airport China is known in the industry as Asia's leading event focusing on airport construction

GATE FUTURE conference, Hamburg, September, 2022

- The innovation forum that brings the airport industry closer together

IndiAirport, Noida (near Delhi), November 22 – 24, 2022

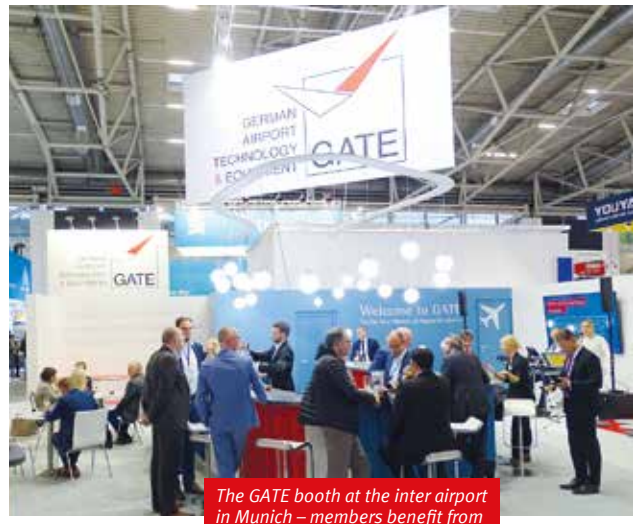
- International Expo & Conference on Airport Technology

inter airport south east asia, Singapore, March 1 – 3, 2023

- The must-attend airport exhibition in ASEAN region

Informal exchange between politicians and industry in follow-up to GATE Future.

The 3rd edition of GATE FUTURE in Berlin



The GATE booth at the inter airport in Munich – members benefit from the networking venue

Meet the Future

IRONIC COMMENT BY MIRIAM SCHÖNROCK

Miriam Schönrock,
Marketing, Events & PR, GATE

It is 2050. I do still miss the Lufthansa Board Magazine. It's been 15 years since the printed version was published. "Too heavy," they said back then, when there was a complete switch from kerosene to hydrogen. I swear and instead of flipping through pages, I scan the code on the digital dashboard in front of me. The lady next to me smiles. Greta Thunberg looks much more conciliatory than she did when she was younger. It was probably she, the world's most famous environmental activist, who put an end to the paper war on the plane. And not only that. She was also growing older. And sailing trips to the USA became more and more arduous. So she really got into aviation. For example, she made intermodality a priority. After all, there were and still are plenty of countries outside Europe where the rail network does not lead one to their destination

We speak briefly. She doesn't know that it was I, after all, who pushed through the plastic-free and vegan board menu in Europe in 2023, but gives me some of her time anyway. Right now, she's on her way to Austin. A shoulder-to-shoulder meeting with X AE A-XII Musk, the youngest son of Tesla founder Elon, is awaiting her. At stake is the realization of Planet B, the alternative to Earth. Unfortunately, his father's Mars settlement did not become a successful project. She sighs. "Despite all the progress, we were too late. If we had supported the innovative concepts of aviation earlier, at least the world would have grown together faster." On that, a tomato juice. I press my dashboard and in seconds the drink rushes down the aisle on an automated stewardess. Now I finally want to relax. I just hope that the drone drops my suitcase at the right hotel this time.

SAVE THE DATE

IndiAirport
An International Expo & Conference on Airport Technology
22 23 24 NOVEMBER 2022
INDIA EXPO CENTRE MART, NOIDA (NEAR DELHI), INDIA

"India's Aviation Sector is growing tremendously, this makes quality infrastructure in aviation sector of prime importance."

- Narendra Modi
Hon'ble Prime Minister of India

"Highlights" of The Event

- Forum on opening day - meet the decision makers of the industry.
- Key note speech Minister of aviation.
- Speed dating between Representatives of Indian Airport authorities and exhibitors.
- German Day with Panel discussion between German companies and airport authorities.

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