Published biweekly – available by annual subscription only – www.mombergerairport.info
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for inter airport Europe from Momberger Airport Information #1177 / September 25, 2022

Norwegian airport operator Avinor has contracted Auckland, New Zealand-based software solutions provider Veovo to predict and optimise operations across all of its airports. Using Veovo's machine learning platform, Avinor aims to ensure cost-effective and reliable operations across its airports network. Avinor CTO Lars Vågsdal said: "The Veovo machine learning platform was chosen after a comprehensive selection procedure involving technology pilots." Under this partnership, the two companies will develop data that reflect the processes of passenger and flight movements across each airport. The Veovo machine learning platform will gather data from various third-party systems as well as internet of things (IoT) devices to automate predictions for different operational services. This data will help in predicting capacity planning for passenger and baggage flow, check-in, security, and border control resource planning. Additionally, the data can be used for forecasting baggage handling, concession footfall, shuttle services and terminal services. Such data is expected to help the airport operator manage the demand with available resources and enhance the experience of travellers and staff. Avinor can also use the technology to enhance airside decision-making, stated the technology provider.

In Germany, Düsseldorf Airport (DUS) and Berlin-based Airsiders are cooperating on a new type of virtual interlining solution. A seamless combination of flights, even without interline or code-sharing agreements, is intended to enable passengers to make completely new transfers and connections via DUS. Passengers of multi-carrier flights will be able to check their baggage in to the final destination, even if they fly with airlines that don't have an interline agreement. Airsiders wants to integrate offers and content from airlines and airports on one platform using an API interface. This will include ticket sales, onward carriage of baggage, flight-related insurance, and minimum connection times between connecting flights without an interline agreement. Travellers thus gain a high level of transparency about flight options, maximum security for connecting flight times, and they no longer have to worry about their luggage until their final destination after dropping it off at the departure airport. "We want to offer a much more flexible and convenient alternative to traditional interlining and current virtual interlining solutions," said Yavuz Karadag, CEO of Airsiders GmbH. Andreas Kraus, Senior Vice President Corporate Development at Flughafen Düsseldorf GmbH, added: "We want to integrate the solutions of our new cooperation partner into the infrastructure of our airport and thus offer new added value to our airline partners as well as to our retail partners in the terminal and, last but not least, to our passengers."
As well as DUS as one of the first airport partners, Airsiders is collaborating with airlines and major aviation partners. The new virtual interlining offer is to be launched in DUS by the beginning of summer schedule 2023.

The Nigerian Aviation Handling Company Plc, (NAHCO Plc) has taken delivery of a new set of ground support equipment (GSE), which includes four units of high capacity Mallaghan Mobile Steps with Chutes and a 14-t cargo maindeck Highloader. The tier four Deutz engine capacity Mobile steps are installed with multi-functional sensors, while the Angelo Bombelli/Airmarell

Highloader, has a forward platform with three folding flaps and automatic retractable rear stopper. Also acquired are five units of Toyota Coaster buses and one Toyota HiAce bus, all for crew transportation.

A driverless passenger boarding bridge (PBB) has begun operations at Chengdu Tianfu International Airport (TFU) in Sichuan, south-west China. Manufactured by the Shenzhen-based CIMC Tianda Holding, the PBB - claimed to be the first of its type in Asia - has an advanced cabin door recognition and positioning system that can send data instantly to an artificial intelligence (AI) powered, autonomous control system. The new boarding bridge is said to have completed the docking process between the bridge and an aircraft in little more than 50 sec, compared with the average time of three minutes and is expected to reduce staff workloads and the airport's operating costs. Its deployment has been deemed a 'milestone' in the intelligent upgrade of China's civil aviation sector. In addition to TFU, the driverless PBB has been implemented at other Chinese airports located in the southern metropolis of Shenzhen and north-eastern Harbin. Several airports outside China are also said to be looking into installing the bridge, with CIMC Tianda helping them with the preparation work.

Alstef Group has been awarded the contract to upgrade the baggage handling system (BHS) at Malé International Airport (MLE) in the Maldives. Following an eight-week design study, Alstef Group submitted a comprehensive design proposal. The installation is set to start at the end of May 2023 after the area's peak tourist season. The BHS project includes an outbound hold-bag screening (HBS) upgrade with the integration of four (EDS) machines delivering screened bags to four make-up laterals. Alstef Group will implement its high-level sortation control software BagWare and integrate a new baggage reconciliation system (BRS) to reduce security risks and lost bags. The project also includes the extension of four inbound carousels and an upgrade of the carousel drive units. Rajesh Kalra, general manager of Alstef Group's Asian division, said: "Glidepath, now part of the Alstef Group, has been working with Malé Airport since 1990. Our thorough understanding of the existing BHS and our extensive knowledge of performing upgrades in operational airports without impacting operations assisted in preparing a winning proposal."

Dallas/Fort Worth International Airport (DFW), TX, has ordered 42 advanced visual docking guidance systems (A-VDGS) from ADB Safegate to replace the airport's older A-VDGS on Terminal B gates. The solution is called Safedock FleX and is scheduled to be delivered in 2022. It uses ADB Safegate's infrared laser and 3D scanning technique to help avoid disruptions and enable faster aircraft parking. The modular design of the Safedock FleX has a separate scanning unit and pilot display for improved flexibility in mounting to support tight parking positions at the airport and optimise views for pilots and ground crew. In addition, the FleX has double the scanning area that the older systems had, to accommodate complex gate layouts and enable centreline changes without repositioning the A-VDGS. A full-colour LED display will provide docking guidance to pilots and communicate critical ramp information display system (RIDS) messages to the ground crew to improve situational awareness during aircraft turnaround. DFW and ADB Safegate are also working together on a pilot programme for the digital apron that will use the Safedock FleX onboard camera and SafeControl Apron Management (SAM) system to introduce artificial intelligence to enable more predictive apron operations. The digital apron pilot programme is part of the American Association of Airport Executives (AAAE) Airport Consortium on Customer Trust (ACT) Programme and is set to take place before 2023.

Now that Goldhofer's product portfolio includes a full set of battery-powered versions - the SHERPA E cargo tow tractor, the BISON E conventional aircraft tow tractor and the PHOENIX E towbarless tow tractor - the company has adopted a holistic approach to sustainable ground handling. Goldhofer's experts are accordingly studying and developing practicable and cost-effective solutions for ground handling in a 360-degree perspective.
For this purpose, cooperation agreements have been concluded with various partners including the following: **ABB E-mobility** - that offers a full, intelligent charging infrastructure for optimum supply of the e-vehicle fleet; Germany's **ATCSim GmbH** – the UFA subsidiary configures customised hardware and software for simulations of GSE applications; **EFM** - Munich-based specialist for aircraft towing and de-

icing has a training centre which offers pushback and towing training units; **Guinault** - The France-headquartered company's portfolio includes fully electric ground power units; and **Rheinmetall** - whose unique eMSU is a zero-emission air start unit.
Lothar Holder, CEO at Goldhofer AG, commented: "We have a focus on offering customers a complete package, because ultimately everything is interconnected in delivering sustainable ground handling." For Goldhofer, it is important to keep the entire operating environment and infrastructure in mind when it comes to zero-emission ground handling. "We are committed to offering our customers a comprehensive partnership to present the opportunities and benefits of efficient and sustainable ground handling," Holder said.
The development and application of telemetry solutions for remote monitoring is another key to enhanced efficiency. Here, too, Goldhofer is setting new standards with its LINK telemetry system. The technology enables any faults that might occur to be read out online via remote access in order to provide a rapid response for the on-site technicians. This greatly speeds up the diagnostic process so that maintenance tasks can be performed significantly faster and more efficiently. GSE vehicles can already be continuously monitored for anomalies so that needs-based maintenance can be planned. Condition-based maintenance provides optimum efficiency and significantly extends the service life of the vehicles.

San Francisco, CA-headquartered AeroVect is partnering with Dnata to pilot and deploy autonomous GSE in the US and around the world. This partnership is claimed to be the first between a global ground handling service provider and an autonomous driving company, making Dnata the first major international handler to pilot and deploy autonomous GSE. AeroVect has developed the AeroVect Driver, a fully autonomous driving system that operates airline- and handler-owned ground support vehicles from all major OEMs, starting with baggage and cargo tractors. Dnata will soon begin piloting AeroVect's self-driving technology at a major airport in the US, where a tractor powered by the AeroVect Driver will transport cargo autonomously from a cargo warehouse to one of the airport's terminals. Over the next few years, the two companies aim to deploy as many as 100 ground support vehicles equipped with AeroVect's self-driving technology at major airports worldwide.

Vestergaard Company has acquired the remaining shares in Kalmar Motor, making it the sole shareholder of Kalmar. Vestergaard Company's acquisition of Kalmar Motor is a natural next step in the close cooperation between the companies. The strategic partnership began in 2017 and have proved very fruitful and beneficial for both. Since its beginning the cooperation has developed and expanded, where the companies today work closely on both sales and service.
Vestergaard Company and Kalmar Motor will continue as independent companies and brands. The cooperation between the companies will be further strengthened to position each better for future growth. In the short term, investments have been made to increase the production capacity in Kalmar Motor, in order to keep up with the growing demand for their innovative electrical tractors.
Meanwhile, Vestergaard Company has announced a new vacuum toilet service truck, shown for the first time at GSE Expo Europe 2022 in Paris, France. The new toilet service truck is a standardised 3,000-l version and can be delivered with or without a mixing system for rinse water. The units can be both electrical and diesel powered. Vestergaard also presented its first fully electric de-icer at GSE Expo Europe 2022. The e-Mini MY Lite is on a Vestergaard electrical chassis and the fluid is heated electrically as well. The e-Mini MY Lite comes with a 40 or 62 kwh battery and can handle up to 12 de-icings depending on rate of contamination/fluid needs and can drive 40-75 km on a single charge.

Publisher's note: The articles in this special report, compiled for **inter airport Europe**, are samples from the biweekly **Momberger Airport Information** newsletter, published since 1973. The newsletter is an advertising-free, global airport news service that consists of 8 modules and allows subscribers to customize their own newsletter package. The items in this report represent only a small sample of **Momberger Airport Information**. The modules that make up the biweekly newsletter are Airport Development (DEV), Calendar of Events (CAL), and the subscriber-selectable modules Airport Operations (OPS), Ground Support Equipment (GSE), Air Traffic Services (ATC), Consultant & Contractor / Sustainable Aviation (CON), Airport Information Technology (AIT), and Maintenance Base & FBO (MRO). For more information and to order an annual subscription, please visit www.mombergerairport.info