



Published biweekly – available by annual subscription only – www.mombergerairport.info
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for inter airport Europe from Momberger Airport Information #1160 / January 10, 2022

Federal officials have identified 50 US airports that will have 'buffer zones' when wireless companies turn on 5G service. The services will use frequencies in a radio spectrum called the C-band, which has caused concerns because it could impact flight operations. After requests from both a major airline trade group - Airlines for America - and Transportation Secretary Pete Buttigieg and Stephen Dickson, head of the Federal Aviation Administration, AT&T and Verizon recently delayed rolling out the new 5G service.

Airlines for America told the Federal Communications Commission (FCC) that using C-band 5G near dozens of airports could interfere with devices that measure an airplane's height above the ground. Buttigieg and Dickson warned that without a delay, there would be an "unacceptable disruption" to aviation because flights would be cancelled or diverted to other cities to avoid potential risks to air safety. The list of airports that will have 5G buffer zones includes those in New York, Dallas, Chicago, San Francisco, Miami, and Las Vegas. Airports were selected based on traffic volume, the number of low-visibility days, and geographic location. These buffer zones will only protect the last 20 seconds of flight, according to the FAA.

Many airports are not currently affected by 5G. For those airports not on the list, the FAA says it does "not necessarily" mean low-visibility flights cannot occur. In some cases, like Denver International Airport, 5G is not yet being deployed. With others, the FAA says the 5G towers are far enough away to create a natural buffer. Wireless carriers now plan to turn on the 5G C-band service on January 19.

Nokia and Brussels Airport Company recently presented a webinar on how LTE/5G private wireless networks can accelerate airports' digital transformation. Airport digitalisation, also known as Airport 4.0, allows airports to embrace paperless operations, enhance their operational and situational awareness, and reduce cost so they can become more competitive. The journey to Airport 4.0 is a challenging one that requires the alignment of many airport stakeholders. To support the digital applications that these stakeholders need, airports must provide broadband connectivity everywhere. As airports embrace digitalisation, the importance of connectivity grows. Pervasive, reliable, secure, broadband wireless connectivity will play a critical role in helping airports realise their Airport 4.0 ambitions by connecting all their stakeholders, processes, and systems.

The clock is always ticking at airside, specifically at the ramp. Guaranteeing or improving turnaround times is what matters. However, many processes still rely on paper and pencil. Airports have faced challenges in helping airlines and airport services companies reliably connect devices to their backend systems to support digital process automation. Traditional connectivity choices come up short as enablers of automation. Wi-Fi suffers from the shadowing effects of aircraft wings and does not always support proper handovers from indoors to outdoors. Public cellular services have never been designed for the airport. Their best-effort nature results in unreliable wireless connectivity, including coverage gaps, and no guaranteed quality of service.

A private wireless network creates the foundation for Airport 4.0 with pervasive connectivity that makes it simpler to embrace process digitalisation and paperless operations. Private wireless also allows airports to

increase their operational and situational awareness so they can efficiently resolve any type of incident and minimise its impact on turnarounds. For example, today's airport operations centre (APOC) relies almost solely on push-to-talk communications to resolve incidents. At airside, the APOC will not have visuals if an incident occurs outside the CCTV perimeter. A private wireless network makes it possible to equip marshal cars or first responder vehicles with remotely controlled pan-tilt-zoom cameras, allowing the APOC to add visuals to the decision-making process. With private wireless, airports can provide services to their stakeholders in a reliable and secure way, which is very different from the situation today. In addition, they can capitalise on a monetisation opportunity by offering these services to their stakeholders in a multi-tier subscription model.

New advancements in wireless technology have allowed airports to start deploying private wireless networks based on 4G or 5G technology. Unlike public wireless networks, private wireless networks are purpose-built for the enterprise and guarantee service wherever it is needed in a secure way. They also keep services and data within the enterprise campus and are exclusively designated for airport operations. Passengers will not be able to connect to these networks. With private wireless, 4G or 5G networks are scaled down to fit the needs of enterprises. The complexity of cellular technology is taken away from the system, making it as easy to deploy as a Wi-Fi network. A private wireless network allows an airport to 'cut the wires' while extending pervasive broadband connectivity throughout the terminal. It is the ideal solution for increasing asset location flexibility and providing quick, cost-effective connectivity to new assets. For example, a private LTE or 5G network can allow airports to deploy wireless connected kiosks that can be placed wherever airlines need them.

Korean Air has launched a full-scale digitalisation of travel documents by introducing an e-Document system (e-DOC). Customers will be able to fill out 23 types of documents, including pet transportation declaration, unaccompanied minor and health condition declaration forms, on their digital devices. In addition, information gathered upon reservation, such as email address, contact information and frequent flyer number, will automatically be reflected on the documents, further facilitating the document fill-out process. Data shared by customers will be safely managed in a secure server. Information stored in the server will be accessible in real-time through dedicated terminals at domestic and overseas branches. Rapid information processing will significantly reduce customer wait time, and security of personal information will be strengthened as documents are automatically stored and deleted in a managed server.

As part of the USD 1.5-billion Kansas City International Airport (KCI), MO, New Terminal project, the Kansas City Aviation Department is investing in the first wireless, vehicle charging system installed at a US airport. The Aviation Department will use this technology to extend the range of its electric buses without installing an above-ground charging station or taking buses out of service for charging. Momentum Dynamics will provide the charging solution, which will be in place when the New Terminal opens in 2023. "Inductive charging was not only an efficient solution in terms of monetary outlay and ongoing costs but was the only system we found that can deliver energy without the traditional plug-in infrastructure," KCI said. The inductive system will provide incremental charging to the existing KCI Economy Parking electric shuttle buses, thus keeping the buses in service longer along the seven-mile loop. The system will be supported by two 300-kW wireless chargers located at shuttle bus stops at the New Terminal. While awaiting passengers, the electric buses will park over the charging pads and will automatically receive incremental charging. Charging takes place while passengers are loading and unloading, and each session ends when the bus leaves the pad.

Low-cost carrier Spirit Airlines has installed new self-bag-drop systems from Dortmund, Germany-headquartered Materna IPS in its redesigned ticket lobby at Dallas/Fort Worth International Airport (DFW), TX. The new installation offers passengers a contactless identification process when checking bags through the use of biometric technology. Materna IPS first partnered with Spirit in 2019 to develop the first biometric matching solution in the US for domestic air travel. Combining it with the automated baggage handling systems allowed the airline to reduce face-to-face interaction

and offer a smoother, seamless passenger check-in experience. Following a rigorous testing period with biometric authentication, the DFW system will replace the need for a manual ID scan by check-in staff. During the 1:1 matching at DFW, the camera integrated into the self-bag-drop system scans the passenger's face as well as their driver's license or passport, and boarding pass data. The information is then sent to the biometric backend to immediately verify the passenger's identity and start the bag-drop process. Materna's biometric solution can analyse key physical features on more than 50,000 types of ID from nearly 200 countries, and also detects fraudulent documents for an extra layer of security. Currently, up to 500 bags a day are checked in at DFW's new self-service stations. Including the biometric authentication, the entire process only takes up to 70 sec and in turn reduces the average passenger transaction time by 30%.

Aviator Airport Alliance, a full-range provider of aviation services at 15 airports across the Nordic Region, has announced a large increase in ground support equipment over 2021 to meet the growing ground handling services demand. According to Jo Alex Tanem, CEO of Aviator Airport Alliance, the need for new and improved GSE was mainly driven by the requirements of new and existing clients. "2021 was a truly successful year for Aviator, with a great deal of new partnerships established as well as prolonging existing contracts. To meet the needs and demands of our clients, who expect quality and professionalism every step of the way, we have invested in a high amount of new equipment," he says. Through the acquisition of new equipment, Aviator not only addresses the needs of their clientele but also their impact on the environment.

"Currently, a large part of Aviator's GSE is already electric, yet we always strive to buy electric GSE when possible, which will increase the number of our sustainable machinery significantly over the years to come," said Tanem.

Currently, Aviator has 1,297 GSE units (not counting dollies and trollies), 70% in Sweden and Norway, where the company has the most stations. "Currently the number of GSE units in our other serviced countries, Denmark and Finland, amounts to 380, yet we plan to introduce new equipment to meet our customers' planned growth," commented Johan Selen, Aviator GSE repair shop manager.

The introduction of the new GSE marks Aviator's next step towards more sustainable and eco-friendly operations, under the company's sustainability plan.

Azkoyen Group has won a EUR 4 million Europe-wide tender for security at Terminal 3 (T3) at Frankfurt Airport (FRA) in Germany. A Spanish technology multinational, Azkoyen Group is one of Europe's leading suppliers of integrated security solutions under the Primion brand. As a result of this experience, the group has signed an agreement with Fraport AG, the company that operates Frankfurt Airport, to equip the new T3 with access control, time recording, and gate management systems. T3 has been under construction since 2015 and is one of the largest infrastructure projects in Europe. After completion of its three boarding gates, some 19 million passengers will arrive and depart from the terminal each year. It is scheduled to go into operation in 2026.

Access gate control both in the terminals and throughout the airport, flight monitoring, visitor management, staff identification, time recording, and a credential management system are the main security solutions that the Azkoyen Group manages and develops in several of the major airports in Germany. These solutions help to increase process efficiency, save on costs, and increase security throughout the airport area, thanks to the automation of processes in real time.

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