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Siemens continues to drive the digitalization of airports

- **The open IoT operating system MindSphere offers cloud-based solutions for process improvements and cost optimization**
- **Analytics Starter Kit for a quick introduction into data acquisition**
- **Software for optimal resource planning and enhanced passenger convenience**

Siemens is facilitating efforts to digitalize airport operations with a comprehensive portfolio of cloud-based software solutions. “Our modular applications are contributing decisively to continuously improve processes and cut costs,” said Michael Reichle, CEO of Siemens Postal, Parcel & Airport Logistics (SPPAL). “What’s more, we always focus on palpably enhancing passenger convenience.” The solutions are based on MindSphere, Siemens’ own cloud-based operating system for the Internet of things (IoT) that serves customers in the airport sector as well as industrial firms and railway operators. MindSphere collects, records and analyzes the quantities of data generated daily by systems and processes, enabling structured onward use of this information. Siemens’ digital solutions support airports and airlines to strengthen their competitive edge. Customers benefit from the significant extra in terms of efficiency, transparency and plannability.

The Analytics Starter Kit from Siemens enables airport operators and ground handlers to quickly and easily acquaint themselves with the possibilities offered by data acquisition and evaluation. The kit includes state-of-the-art Bluetooth sensors that staff themselves can affix to their system based on the plug and play principle. The so-called beacons transmit the data they capture to MindSphere. There, various analysis take place in line with customer needs, for example vibration or temperature analysis. These measured data enable engineers to forecast failures or outages, and initiate

appropriate maintenance action. Customers receive an easy-to-install app that's simple to use. The application presents analysis results in easily understandable displays.

The purpose of the Planning, Prediction & Control (PPC) software is to enable early, reliable forecasting of potential shortages or bottlenecks and to optimally plan personnel and plant resources. MindSphere enables transparent, clearly understandable presentation of baggage data as well as intelligent linking of data by means of machine learning. This translates into significant advantages for air travelers: Passenger convenience is greatly improved for example by shorter waits at baggage reclaims. Moreover, the root causes of baggage loss in accordance with Resolution 753 of the International Air Transport Association (IATA) can be identified and effectively combatted.

For the visualization of any data analysis, SPPAL offers an in-house dashboard solution that is already being used to good effect at major international airports such as Los Angeles and Dubai. The dashboard runs on all devices with Internet access, such as laptops, tablet PCs and smartphones. This provides operational crews on site with valuable support, enabling them to make better decisions more quickly – and in real time.

Alternatively, Siemens gladly assumes charge of servicing baggage handling systems. These efforts focus on condition-based, predictive maintenance that also makes use of beacon sensors as well as remote monitoring and analysis techniques.

Countless complex process steps are needed today to get aircraft loaded with passengers, baggage and cargo airborne and to their intended destinations. Many different stakeholders are involved, from the airlines themselves to the airport operating companies, baggage handling system operators and ground staff to the various administrative authorities concerned. The aviation industry is characterized by a wide range of different systems, regulations and standards.

In addition, value-creation in the industry is changing rapidly. Transporting passengers and cargo alone is often not enough to sustain a profitable business. This is why airports and airlines are working to tap into more business segments by adding new services for passengers. Planners envisage turning airport stays into unique experiences for passengers.

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Siemens Postal, Parcel & Airport Logistics GmbH (SPPAL) headquartered in Constance, Germany, is a fully owned subsidiary of Siemens AG. SPPAL is a leading provider of innovative products and solutions in mail and parcel logistics and automation as well as in airport logistics with baggage and cargo handling. Software solutions and customer services along the whole product life cycle complete the portfolio. The company has an installed base in more than 60 countries worldwide. Major customers include renowned airports as well as postal and parcel service providers around the globe. Further information is available on the Internet at: www.siemens.com/logistics

Siemens AG (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for 170 years. The company is active around the globe, focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of efficient power generation and power transmission solutions and a pioneer in infrastructure solutions as well as automation, drive and software solutions for industry. The company is also a leading provider of medical imaging equipment – such as computed tomography and magnetic resonance imaging systems – and a leader in laboratory diagnostics as well as clinical IT. In fiscal 2017, which ended on September 30, 2017, Siemens generated revenue of €83.0 billion and net income of €6.2 billion. At the end of September 2017, the company had around 377,000 employees worldwide. Further information is available on the Internet at www.siemens.com.