Smart Wireless Seat Monitoring System

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Aviation

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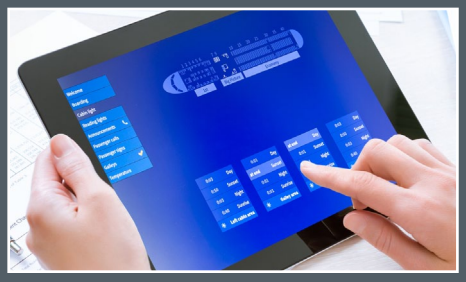

Characteristics

The Smart Wireless Seat Monitoring System collects status information from each seat (occupation, position of tray/backrest). Legally, seatbelts must be fastened, backrests must be in the upright position, and trays have to be folded away to protect passengers in emergency situations. For safety reasons, passengers should remain seated with fastened seatbelts when flying through turbulence. Currently, crew members have to visually verify the seat status of each passenger. This system automatically determines the status and sends the information to the Flight Attendant Panel or a tablet while the crew is securely seated. This can be supplemented with further information, such as window shade positioning, to give a full overview of the cabin status. It also monitors seat pockets and alerts passengers if something has been left behind. The system additionally checks for the presence of life vests. Since the system uses wireless communication, it can be easily installed in new and existing airplanes.

Benefits

OEM

- Reduced FAL effort as components provide wireless communication
- Battery-free sensors
- Easy to install
- Responds to manual or automatic request

Passenger

- Increased safety due to correct configuration of seat environment (preparation for severe conditions such as emergency/turbulence)
- No personal belongings left in seat storage compartments

2018

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Aerospace

Diehl Aerospace is a joint Diehl Thales company.

Benefits

Operator

- Cabin status (seats/shades) at a glance
- Presence of life vests at a glance
- Crew can inspect status while seated (safer during critical flight phases, such as turbulence)
- Reduced probability of injuries to passengers/crew during critical situations (runway overshot/turbulence)
- Reduced cost for handling forgotten personal belongings
- Optimized passenger handling processes
- Early recognition of life vest disappearance

Technical Data

This technological breakthrough is based on a flexible combination of wireless technology; a versatile generic data gathering, processing, and transmission concept/platform; and consequent usage of low-power technologies. Wireless technology means the Smart Wireless Seat Monitoring System can be used alongside an existing CMS as the Master Collector is able to transfer information to any mobile device.
The consequent use of low-power technologies enables the remote sourcing of energy to the Sensor Nodes and attached sensors. The versatile generic data collection platform can also be used to collect information from other sensors in the cabin; the modular architecture of this platform means that it can easily adapt to any number of sensors, as well as those of different types to enable upon others automatic equipment checks.

The system consists of the following components:

- Sensors embedded in the seat group ascertain seat occupation, armrest configuration, backrest configuration, tray configuration, seat storage compartment status, and life vest presence. A Sensor Node for each seat collects the relevant information. Each Sensor Node transmits its information to Collectors, which combine the information for several seat rows.
- The Collectors wirelessly forward the information to a Master Collector.
- The Master Collector is either connected to the CMS to show the cabin status on the FAP and initiate feedback to the passengers, or the information could also be transmitted wirelessly to a mobile device.
- The Collectors also provide power to the Sensor Nodes.
- This concept avoids additional wiring from cabin to seats.
- This solution is suitable for new aircraft and cabin retrofits.

Want to know more about our products and their availability? Please contact us!

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