# Cabin Area Network System and Services

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Aviation

Climbing higher.
Together.



## Characteristics

Cabin Area Network System and Services (CANSAS) is a cabin network providing high-speed data communication on an open platform. It runs a vast variety of applications and functions, including an open Linux ecosystem that allows the usage of customized airline solutions. In addition to non-essential functions, it covers all the conventional cabin management control- and monitor functions such as cabin audio and alerting, lighting control, water/waste-water status, etc. Characterized by high computing performance and storage capacity, CANSAS is fully configurable, based on tool-generated configuration tables. Having various types and numbers of I/Os it connects to all cabin and aircraft systems of today.

Based on a distributed system architecture, Diehl Aerospace has designed a modern and innovative cabin system that is highly integrated, and remains flexible in order to adapt to the complex airline environment and airline-specific functions. It encompasses the needs of next-generation cabin management systems and cabin networks for wide-body aircraft and scales down to regional aircraft and to retrofit solutions e.g. for monument and galley controls.

CANSAS features a variable number of elementary, identical, and versatile devices – the "Input/Output Distribution Nodes" (IODN). The Graphical User Interface (GUI) for the crew is displayed on a Flight Attendant Panel (FAP) which also comprises the same functionality as the IODN.

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Due to this modular approach the CANSAS of Diehl Aerospace guarantees minimum maintenance, minimum life cycle cost, high reliability, and low part number count. Powerful tools for adaption, configuration, and maintenance support the installation and operation of CANSAS.

## Input/Output Distribution Node (IODN)

CANSAS is built from a number of Line Replaceable Units called Input/Output Distribution Nodes. These IODNs are equipped with a broad number of periphery interfaces. Connected in a ring topology the IODNs provide a highly reliable, deterministic communication backbone to interface with all cabin and aircraft systems. No central processing device is required in addition to the IODNs. Thanks to the distributed system architecture, the number of interfaces and the available processing power are very flexible and can be scaled to individual OEM/airline needs. The capabilities of CANSAS can be adapted simply by changing the number of IODNs in the aircraft.

## Flight Attendant Panel

Flight Attendant Panels (FAP) are the main interfaces of CANSAS to the cabin or maintenance crew. The FAP is used to determine the status of CANSAS as well as to its connected sub-systems, and to control features such as illumination or signs. For maintenance the FAP offers extensive BITE functionality.

It comprises the functionality of an Input/Output Distribution Node (IODN) with a robust touchscreen. The GUI shown on the touchscreen is created using model-based technology, allowing for fast iterations during GUI customization. CANSAS can be equipped with multiple FAPs allowing the crew to access and control the cabin functions from the most appropriate place in the aircraft.

## Control via flight crew mobile device

With CANSAS, the flight crew can also operate all cabin control and monitoring functions with an airline-specific handheld device which is easily and intuitively connected to the CANSAS through a safe and secure Wi-Fi link.

## Wireless Sensors

Wireless sensors are a part of the open CANSAS architecture and enable a new class of cabin applications such as wireless seat monitoring, status monitoring of bins, stowages, life vests, trolley content, and much more.

## Experience

Diehl Aerospace has a long history in safety-critical avionics as well as in aircraft cabin equipment and cabin systems including cabin attendant panels, cabin lighting, passenger service units, I/O controllers, and related software and tools. Based on this experience, Diehl Aerospace has already developed the cabin management system for the Embraer E2 series and offers an advanced Cabin Area Network System and Services family that perfectly complements its cabin electronics portfolio.