

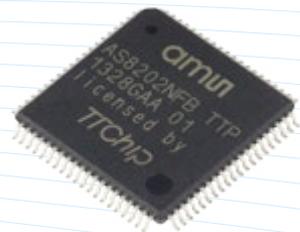


Advanced Control Systems for Airbus A380

Nord-Micro's TTP-Based Cabin Pressure Control System



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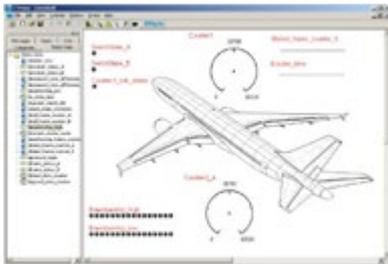
www.tttech.com/aerospace



“ We have decided for TTTech because our systems are critical for passenger safety and cabin comfort. Their time-triggered protocol TTP and products provide us with the safest and most advanced platform for cabin pressure control systems available on the market. ”

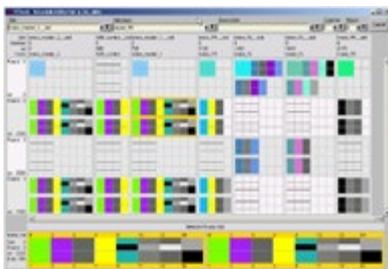
*Friedrich Scheerer
Manager Cabin Pressure Control System Development
Nord-Micro*

The Airbus A380 is the most advanced, spacious and efficient commercial airliner ever conceived. Designed in close collaboration with major airlines, airport operators and airworthiness authorities, the A380 brings new standards of cabin comfort and better economics in more environmentally responsible aircraft. Whilst doing all of this, it allows growth and reduced congestion from today's airports with minimum change. Most importantly, the A380's modern technology and economies of scale offer passengers a whole new way of flying and more affordable prices.



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The A380 flies for up to 14 hours at an altitude of 11,000 meters with an ambient temperature of -56°C and a pressure of less than 20 per cent of the usual ambient pressure. No human being could survive air travel in such a hostile environment. In order to ensure that passengers and attendants enjoy their flight under the same conditions as in daily life, a cabin pressure control system is required. Airbus selected Nord-Micro (Business unit of UTC Aerospace System), Frankfurt/Germany, a Hamilton Sundstrand subsidiary, to supply its highly reliable cabin pressure control system to the new flagship of their fleet.



Nord-Micro develops, manufactures, and integrates fully automatic cabin pressure control systems for increased safety and passenger comfort. The company's research focus is on design of advanced cabin pressure and ventilation control systems for major aircraft manufacturers and international airlines. Nord-Micro delivers cabin pressure control systems for the majority of the Airbus fleet. With the aim to reduce operating costs and optimize value, Nord-Micro chose TTTech as the supplier of the internal communication system of the A380 cabin pressure control system.

“ We are very pleased to work together with TTTech. The TTP protocol provides Hamilton Sundstrand flexibility in designing distributed electronic systems. By taking advantage of TTP’s modular nature, we can more effectively integrate our systems, improve tolerance to system upgrades, and better manage obsolescence. ”

*Luiz Andrade
Chief Engineer Electronic Products Engineering
Hamilton Sundstrand*

TTTech is the leading supplier of dependable networking solutions based on time-triggered technology. Headquartered in Vienna, Austria, the high-tech company provides an innovative data communication protocol. The Time-Triggered Protocol (TTP) is a mature network solution for safety-critical applications. TTP with its DO-178 and DO-254 Level B certified communication controller features new levels of fault tolerance, dependability, and availability in Nord-Micro’s cabin pressure control system.

TTP is a fault-tolerant deterministic protocol that involves continuous communication of all connected nodes via redundant data buses at predefined periods of time. TTP has effective fault handling mechanisms and data consistency services to provide maximum safety and reliability. A communication network designed with TTP prevents an overload in the bus system even if several important events occur simultaneously. All events are safely processed according to a schedule, eliminating the dangers of data collision.

TTP provides a standardized and cost-efficient platform for the fully distributed cabin pressure control system in the Airbus A380. This control architecture distributes functions across the entire network, thereby increasing system capabilities and enhancing operational performance. Major benefits of TTP-based solutions in the aerospace industry are reduced aircraft wiring and system weight, lower total life cycle costs, as well as increased reliability of the overall system.



▶ CUSTOMER / PROJECT

Airbus A380 – TTP-based cabin pressure control system

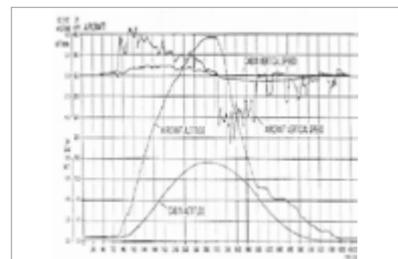
▶ CHALLENGE

The customer needed a safe and advanced platform for cabin pressure control systems.

▶ SOLUTION

Based on TTP, TTTech developed the internal communication system for Nord Micro’s cabin pressure control system.

▶ AT A GLANCE



Reaching for the Sky with Certified and Safe Solutions

About TTTech Computertechnik AG

TTTech Computertechnik AG is the technology leader in robust networked safety controls. The company's solutions improve the safety and reliability of networked electronic systems in the transportation and industrial segments. Our product portfolio offers best-in-class certifiable products according to IEC 61508, ISO 26262, EN 13849, DO-254 and DO-178B requirements.

TTTech customers win as they deploy dependable networks and real-time controls more efficiently and profitably. Benefits include shorter time-to-market due to re-use of proven architecture, higher integration with reduced cost, ease of system integration, and obsolescence management as well as highly scalable and modular open real-time architectures.

About Nord-Micro

Headquartered in Frankfurt, Germany, Nord-Micro, a business unit of UTC Aerospace Systems, is a well established global player in the aerospace business and the world leader in cabin pressure control systems (CPCS) for large commercial aircraft. With more than 40 years of experience, continuous growth and improvement, Nord-Micro today is a well known 1st Tier OEM supplier and the reliable partner of choice for major commercial and military aerospace customers all around the world.

Further information is available at www.nord-micro.com

About UTC Aerospace Systems (Hamilton Sundstrand)

UTC Aerospace Systems is one of the world's largest suppliers of technologically advanced aerospace and defense products. We design, manufacture and service systems and components and provide integrated solutions for commercial, regional, business and military aircraft, helicopters and other platforms. We are also a major supplier to international space programs.

In 2012, UTC Aerospace Systems was formed by combining two industry leaders, Hamilton Sundstrand and Goodrich, creating an organization with key positions on a wide range of aircraft flying today and substantial content on various UAVs, satellites and ground and naval vehicles.

Further information is available at www.utcaerospacesystems.com

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