

IN AIRCRAFT
YOUR PERFORMANCE
STARTS WITH CABLES



Nexans
BRINGS ENERGY TO LIFE



DEVOTED SUPPORTER IN SATISFYING CUSTOMERS' DIVERSE REQUIREMENTS

PROJECT DESCRIPTION

First civil jet, consistent with airworthiness requirements, designed and built entirely in China.

CUSTOMER CHALLENGES

- Civil aircraft designed to apply for airworthiness in true sense.
- Not familiar with airworthiness requirements and related standards.
- Need to choose the most suitable wires & cables within limited timeline.

NEXANS SOLUTIONS

- Technical seminars and training sessions at very high rhythm organized both from oversea and local teams.
- Given our rich experience in the aircraft manufacturing industry, Nexans has become an historical cable manufacturer in the field.
- Standard education: member of the ASD-STAN committee in Europe and SAE-AS committee in the U.S., acting as an expert for establishing global standards.
- Provide all necessary test information, documents and open facilities at engineers' disposal.



RELIABLE COMPANION TO C919 SINCE THE EARLY DESIGN STAGE

PROJECT DESCRIPTION

- One of the most important projects in realizing Chinese blue dream. Designed independently by COMAC and built entirely in China to compete with A320, B737.

CUSTOMER CHALLENGES

- Young team in design and manufacturing commercial aircraft to apply for airworthiness.
- Find high quality and safe wires & cables solutions.
- Need reliable aerospace wires & cables expert who is willing to invest since the very first beginning to accompany the long tough design period.
- Need a partner with supportive, responsive and trustful spirits.

NEXANS SOLUTIONS

- Residential engineer for on time technical support to share our expertise anytime customer needs in design phase.
- Work globally to be very responsive to every question during design period, provide supportive technical documents.
- Training sessions and seminars to share our technical expertise and help make the right choice.
- High quality and with years proven experience safe wires & cables solution for all needs of C919.



CHINA'S CHANGHE OPTS FOR LATEST-GENERATION Z SERIES HELICOPTER CABLES

PROJECT DESCRIPTION

- Multi-functional rotary-wing transport for both defense and commercial applications

CUSTOMER CHALLENGES

- Technical support and special expertise to find correct cable design for different helicopter environments, weight and vibration resistance.

NEXANS SOLUTIONS

- Early design from drawing board onwards, technical training to local design staff and prototype assistance.
- Our new smooth tape-wrap technology has also been approved in the latest Chinese fighter aircraft and by several North American defense firms.





LIGHTER AND ARC TRACKING RESISTANT CABLES FOR AIRBUS 380 PASSENGER AIRCRAFT

PROJECT DESCRIPTION

- New specs for aluminum cables make significant space and weight gains.

CUSTOMER CHALLENGES

- Airbus was already using aluminum, but needed a new generation of cables that were compatible with lugs and terminations.

NEXANS SOLUTIONS

- Created a new range of cables with a tape-wrapped insulation that allowed a 5% weight gain over previous cables.
- Today, Airbus is applying this power cable to A380 aircraft, and other OEMs are following their lead. Similar cables have also been used on the American space shuttles, and the Mars Exploration Rover Missions.
- Furthermore, Nexans developed a new generation of fire-resistant cable following the latest and most stringent European norms, which bring both benefits: light weight and arc-tracking resistance in bundled configurations.





DIELECTRIC IMPROVEMENTS FOR GREATER COAX PERFORMANCE

PROJECT DESCRIPTION

- A new range of coaxial cables used for navigation, avionics and anti-collision systems are both resistant and compatible.

• CUSTOMER CHALLENGES

Previous coaxial cables used a foam dielectric insulation. However, the process needed to be changed due to new REACH regulations.

• NEXANS SOLUTIONS

Based on our long experience with extrusion, Nexans has developed a new “daisy” or “wagon wheel” (spoke) design. This aerated dielectric uses air rather than extruded foam insulation. This solution meets the very latest environmental regulations, is significantly lighter and greatly improves dielectric performance – thus extending the use of coaxial cables well into the next decade.





A HIGH-PERFORMANCE DATABUS CABLE AT REASONABLE COST

PROJECT DESCRIPTION

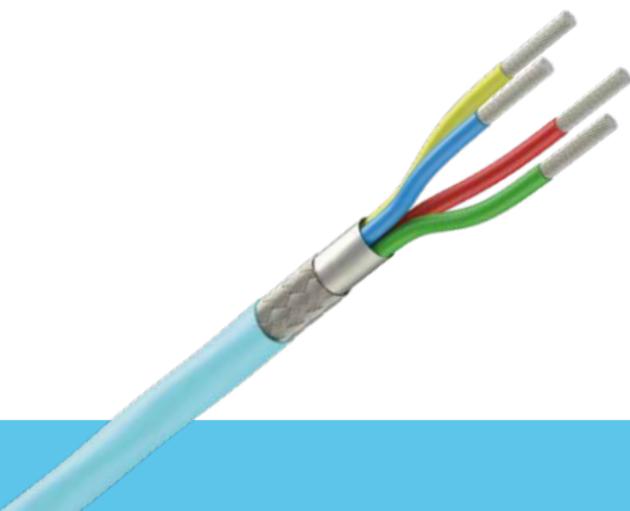
- Drawing on proven “daisy” designs, Nexans developed a lightweight AWG databus cable.

CUSTOMER CHALLENGES

- Because of a mono-source, a leading OEM was paying a high price for this type of cable and was looking for a reliable, high-performance alternative.

NEXANS SOLUTIONS

- Nexans has developed a lightweight AWG databus cable that achieved exceptional performance at a very reasonable price.
- It is widely used on many helicopter programs such as NHIndustries’NH90 multitask military helicopter and Eurocopter’s Tiger attack helicopter.





HYBRID CABLES FOR MILITARY APPLICATIONS

PROJECT DESCRIPTION

- A leading contractor for the U.S. Department of Defense asked Nexans to design multifunction cables with enhanced mechanical and electrical performance.

CUSTOMER CHALLENGES

- The contractor needed an electrical wire interconnect system that met severe weight restrictions, while offering a very high level of performance in terms of flexibility, cut-through resistance and abrasion resistance. It had to carry signal, power, and high-speed data and had to incorporate only Mil-spec certified components.

NEXANS SOLUTIONS

- Nexans submitted four designs for hybrid cables made of twisted pairs, twin-axes, coaxes and multi-core cables to the contractor and provided samples so that its partner could provide terminations and then submit the cables for rigorous testing. After extensive testing for mechanical and electrical performance, they were found to be a superior solution. Nexans and its partner were awarded the contract for eight years and have since been given a four-year extension.



LIGHTER WEIGHT AND INCREASED EFFICIENCY ON SUKHOI SUPERJET 100

PROJECT DESCRIPTION

- Nexans developed new specs of cables for the manufacturing of the Sukhoi Superjet 100 regional jet, designed and spearheaded by the Sukhoi Civil Aircraft Company (SCAC) in Russia.

CUSTOMER CHALLENGES

- Designed to compete internationally with its An-148, Embraer E-Jet and Bombardier CSeries counterparts, the Superjet 100 claims substantially lower operating costs, at a lower purchase price of \$35 million.

NEXANS SOLUTIONS

- During the development phase, Nexans have supported Sukhoi and brought new technologies on all the aerospace range of cables: lightweight on hookup wires, fire-resistant cables, high frequency on data cables.





NEW GENERATION OF LIGHT WEIGHT COAXIAL CABLES

PROJECT DESCRIPTION

- Nexans provided a new range of coaxial cables to replace existing coaxial links WD and WN cables.

CUSTOMER CHALLENGES

- In response to tougher regulations on noise and greenhouse gas emissions or with the aim of optimising fuel costs, the contractor searches for solutions to minimise weight on aircraft, thus, with no compromise on safety, performance and reliability.

NEXANS SOLUTIONS

- Nexans developed a new range coaxial cables for onboard HF data transmission (radio, radar, anti-collision, communications, navigations and avionics). KX cables for enhanced high-frequency and KW cables featuring an all-aluminum weight-saving conductor, fully compatible with the already existing Airbus stripping tools.
- Reduced weight by 20% to 30%, with same electrical performance.



As a global leader in advanced cabling and connectivity solutions, Nexans brings energy to life through an extensive range of best-in-class products and innovative services. For over 120 years, innovation has been the company's hallmark, enabling Nexans to drive a safer, smarter and more efficient future together with its customers. Today, the Nexans Group is committed to facilitating energy transition and supporting the exponential growth of data by empowering its customers in four main business areas: Building & Territories (including utilities, smart grids, emobility), High Voltage & Projects (covering offshore wind farms, submarine interconnections, land high voltage), Telecom & Data (covering data transmission, telecom networks, hyperscale data centers, LAN), and Industry & Solutions (including renewables, transportation, Oil & Gas, automation, and others). The Group's commitment to developing ethical, sustainable and high-quality cables drives its active involvement within several leading industry associations, including Europacable, The National Electrical Manufacturers Association (NEMA), International Cablemakers Federation (ICF) or CIGRE to mention a few. Nexans employs more than 26,000 people with industrial footprint in 34 countries and commercial activities worldwide. In 2017, the Group generated 6.4 billion euros in sales. For more information, please consult: www.nexans.com

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