



EXPERTISE IN

# AEROMIL

**axon'**  
cable & interconnect

RADARS  
ANTENNAS  
NAVIGATION COMMUNICATION SYSTEMS  
COUNTER MEASURES  
ELECTRONIC SYSTEMS  
FORWARD-LOOKING INFRA-RED SYSTEMS  
MISSILES  
HELMET MOUNTED DISPLAYS  
RETROFIT OF AIRCRAFT  
GIMBALS  
ELECTRONIC BOXES  
TWIST CAPSULES  
EJECTION SEATS  
ETC...



# EXPERTISE<sup>IN</sup> AEROMIL



**axon'**  
cable & interconnect

axon'



## REQUIREMENTS OF AEROMIL APPLICATIONS

→ FLEXIBILITY, WEIGHT SAVING, MINIATURISATION, HIGH FREQUENCY, HIGH DATA RATE, EMC PERFORMANCE, EXTREME TEMPERATURES.

→ **APPLICATIONS** : RADARS, ANTENNAS, NAVIGATION COMMUNICATION SYSTEMS, COUNTER MEASURES, ELECTRONIC SYSTEMS, FORWARD-LOOKING INFRA-RED SYSTEMS, MISSILES, HELMET MOUNTED DISPLAYS, RETROFIT OF AIRCRAFT, GIMBALS, ELECTRONIC BOXES, TWIST CAPSULES, ETC...

AXON' CABLE has brought its expertise in the manufacture of precision conductors, wires, cables and assemblies together with its knowledge of overmoulding techniques and EMI protection to be able to offer solutions to civil and military aeronautics.

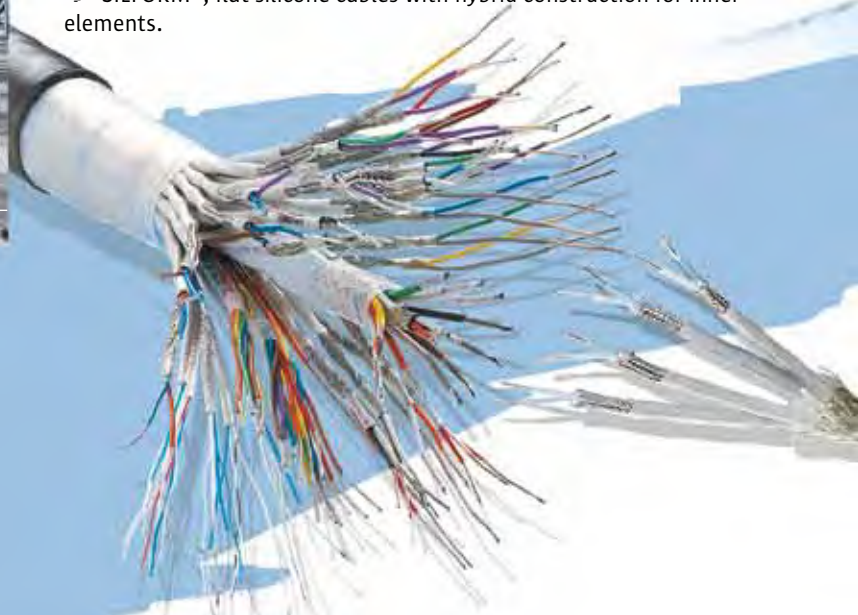


CLEAN ROOM

## REFERENCES

Tiger (Eurocopter), Eurofighter, Stormshadow, Tornado, Nimrod, C27J, NH90, EH101, ASTOR, JSF, Lynx, F18, Gripen, M346, A129, DIRCM, Rafale, Airbus, Meteor (European missile), FV430 armoured vehicle, VT1 missile, Indra, MBDA, CESA, ISS, Columbus, etc...

## WIRES AND CABLES

- Wires and cables insulated with PTFE, FEP, PFA, ETFE, cross linked ETFE, polyimide and other insulating materials for extreme temperatures : from -90°C to + 260°C.
  - Flexible wrapped cables insulated with PTFE.
  - ESA wires, aluminium.
  - AXALU® aluminium round wires and cables for weight saving
  - Very Flexible high stranded conductor Wires (FW) for ease of installation or long flexlife.
  - UV laser markable extruded wires (including PTFE version).
  - VITAX™ composite cables insulated with fluorinated elastomers : high flexibility, high resistance to aggressive chemical environments and high temperature performance up to 230°C.
  - MIL-STD-1553B databus cables : a good compromise between electrical characteristics, space and weight.  
*Standards* : MIL-C-17/176-00002, pr EN 3375, PANAVIA 6421, ECS 0700, SSQ 21655.
  - Coaxial cables and low loss microwave coaxial assemblies. The dielectric can be made with CELLOFLON® (porous PTFE) for lighter, smaller and more flexible cables with better electrical characteristics.
  - High speed wires : militarised IEEE 1394 480 mbits/s.
  - On board Ethernet 100 base T 100 mbits/s.
  - Fibre Channel links 2.2 gbts/s.
  - Flat Flexible Cables for board-to-board interconnections and display interconnect.
  - Custom designed wires and cables.
  - SILFORM®, flat silicone cables with hybrid construction for inner elements.
- 



EYE PATTERN



METROLOGY LABORATORY

## CONNECTORS

⇒ Different types of connectors and triaxial contacts designed for MIL-STD-1553B databus applications.

Qualifications and design according to EN3716.

Miniature single way connector available with 4 different keyways ; will mate with Raychem DK621 and Trompeter 450 series.

⇒ Micro-D connectors for space, weight saving and miniaturisation : BS, BR, CBR, etc... Standard and custom designed metal and plastic shells, strip and saver, circular Micro-D. *Characteristics* : twist-pin contact (3 Amp)

*Standard* : MIL-DTL-83513

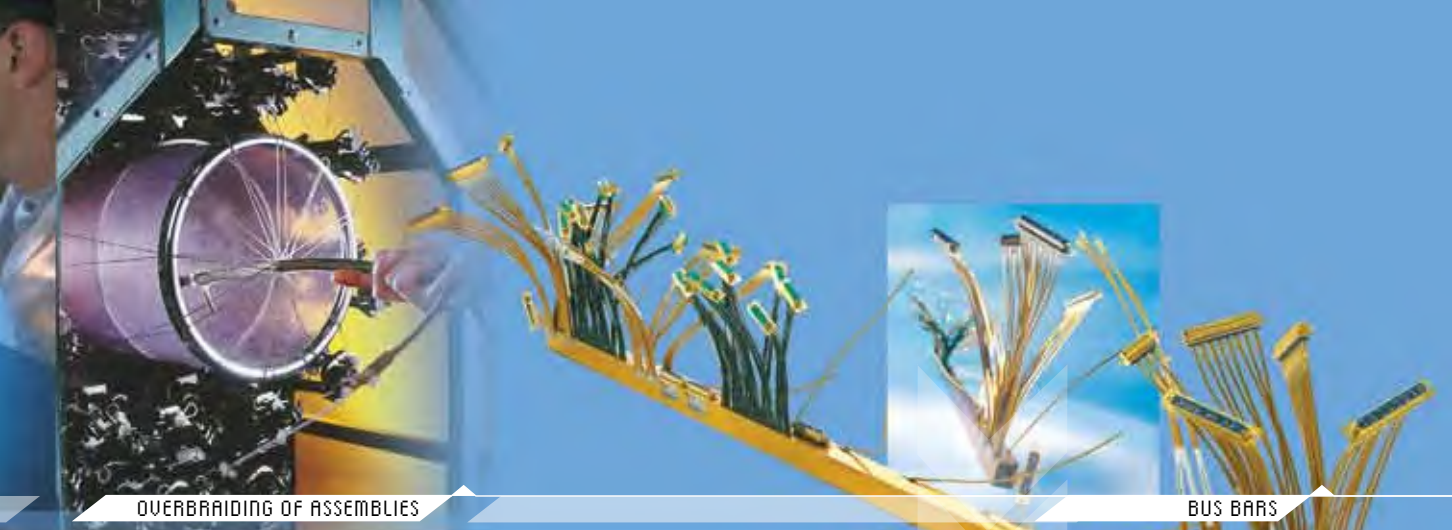
⇒ Plastic and metal NANO-D connectors for extreme miniaturisation Nano-D backshells, custom designed Nano-D shells.

*Characteristics* : twist-pin contact (1 Amp)

*Standard* : MIL-DTL- 32139



MIL-STD-1553 BUS ASSEMBLY



OVERBRAIDING OF ASSEMBLIES

BUS BARS

## ASSEMBLIES

- Expertise in the manufacture of assemblies terminated with different types of connectors : circular, miniature, coaxial, D-Sub, MIL-38999 connectors as well as a large range of special and custom designed connectors.
- Low loss microwave coaxial assemblies terminated with connector series 7/16, SMA, N or TNC and operating at 50 GHz.
- MIL-STD-1553B bus assemblies for on-board digital transmission systems with in-line or low profile removable couplers (single or multistub)  
*Standards : SPE-J-403-A-0070, EN3567.*
- *Transformers - Standard : JN 1081 (Eurofighter programme), MIL-T-21038.*
- Accessories, splices, relay couplers.
- Standard and custom designed Micro-D assemblies, pigtails : wires AWG 12 to 32, various configurations including special shapes.
- Nano-D assemblies made with 30 to 36 AWG wires and plastic or metal Nano-D connectors to be integrated into assemblies or mounted onto PCB'S.
- Twist capsules, AXOTWIST™ metal cassette in aluminium integrating an electrical cable : connection between a fixed part and a rotating part - possible termination using µD connectors.

## EXPERTISE IN CUSTOM DESIGN SOLUTIONS

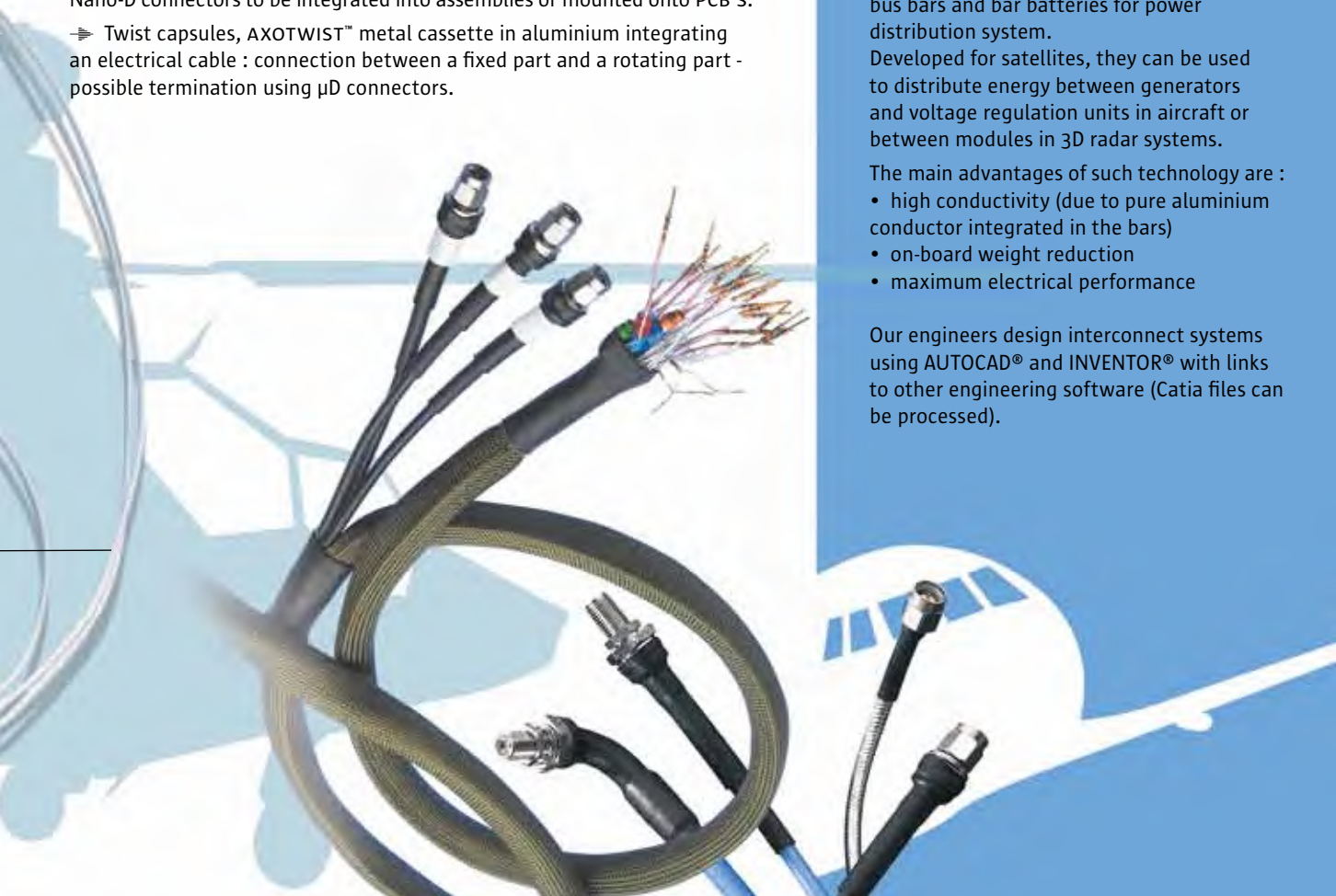
AXON' expertise in different fields (metallurgy, EMI protection, plastics technology, interconnect solutions, etc...) enables the company to offer solutions suited to customer requirements including bus bars and bar batteries for power distribution system.

Developed for satellites, they can be used to distribute energy between generators and voltage regulation units in aircraft or between modules in 3D radar systems.

The main advantages of such technology are :

- high conductivity (due to pure aluminium conductor integrated in the bars)
- on-board weight reduction
- maximum electrical performance

Our engineers design interconnect systems using AUTOCAD® and INVENTOR® with links to other engineering software (Catia files can be processed).





MODE STIRRED CHAMBER

HOT MELT OVERMOULDING

## EXPERTISE IN EMC

- Dedicated development team: from simulations to the manufacture of braided cables and harnesses.
- Approved laboratory to carry out transfer impedance.
- Shield efficiency measurement up to 18 GHz in mode stirred chamber.
- Overbraiding of multi-branched assemblies.
- Connector backshells to protect the assembly from EMI problems or mechanical damage.
- D-Sub or Micro-D halorings to facilitate termination of the wire shields.
- Shield band termination : AXOCLAMP® to connect braid to backshells.
- Shielding braid : AXOTRESSE®: copper and/or silver plated aluminium braids with guaranteed transfer impedance.

## EXPERTISE IN PLASTICS TECHNOLOGY

- Custom designed solutions for mechanical protection of the cable/connector interface : shaping, airtightness, mechanical strength, chemical resistance, protection of shielding termination, etc...
- Mould design and overmoulding techniques : low pressure, hot melt, high pressure.
- Potting.

## TESTING CAPABILITIES AND QUALITY ASSURANCE

- **Electrical characteristics** : automatic testing for electrical continuity, insulation resistance, dielectric strength, electromagnetic compatibility, eye pattern.
- **Environmental characteristics** : thermal shock, humid heat, life duration, flame, accelerated ageing, salt spray, etc...
- **Mechanical characteristics** : combined flex/torsion, winding, folding, vibration, shock, etc...

## QUALITY ASSURANCE

ISO 9001 / ISO 14001 / AS/EN/JISQ 9100 / ISO/TS 13485 / OHSAS 18001





#### HEADQUARTERS / FRANCE

**AXON' CABLE SAS**  
2 ROUTE DE CHALONS EN CHAMPAGNE  
51210 MONTMIRAIL - FRANCE  
TEL : +33 3 26 81 70 00  
FAX : +33 3 26 81 28 83  
sales@axon-cable.fr  
[www.axon-cable.com](http://www.axon-cable.com)

#### BRAZIL

**AXON' CABLE IND. E COM. LTDA.**  
Av. Evandro Lins e Silva, 840 - Sala 610  
Barra da Tijuca - Rio de Janeiro - RJ  
CEP : 22631-470  
TEL : +55 21 2178-2498  
l.moreira@axon-cable.com

#### CHINA

**AXON' INTERCONNECT LIMITED**  
HIGH TECH INDUSTRIAL PARK,  
CHANG BAO XI ROAD  
RONGGUI, 528306  
SHUNDE, GUANGDONG - CHINA  
TEL : +86 757 2838 7200  
FAX : +86 757 2838 7212  
sales@axon-interconnect.com

#### GERMANY

**AXON' KABEL GmbH**  
POSTFACH 1131D - 71201 LEONBERG  
HERTICHSTR. 23D - 71229 LEONBERG  
TEL : +49 7152 97992-0  
FAX : +49 7152 97992-7  
sales@axon-cable.de

#### HUNGARY

**AXON' KÁBELGYÁRTÓ KFT.**  
KECSKEMÉT H-6000,  
WÉBER EDE U. 10/A  
TEL : +36 76 508 195  
FAX : +36 76 508 196  
e.mail : axon@axon-cable.hu

#### INDIA

**AXON' INTERCONNECTORS  
AND WIRES PVT LTD**  
No: 117, Suite No: 1W, NEIL TOWERS,  
EPIP, WHITEFIELD  
BANGALORE 560066  
TEL : +91 804 098 7800  
FAX : +91 804 091 8185  
sales@axon-cable.in

#### JAPAN

**AXON' CABLE JAPAN OFFICE**  
ML 1410043  
TOYOSU 1-3-1, KOTO-KU  
TOKYO 135-0061  
TEL/FAX : +81 26 244 2261  
axon-japan@nifty.com

#### LATVIA

**AXON' CABLE SIA**  
VIŠKU IELA, 21C  
DAUGAVPILS - LV-5410  
TEL : +371 6540 78 91  
FAX : +371 6540 78 93  
axon@axoncable.lv

#### MEXICO

**AXON' INTERCONEX, S.A. DE C.V**  
Av. Peñuelas 26A.  
Industrial San Pedrito Peñuelas  
Querétaro, Qro. C.P.76148 MÉXICO  
TEL : +52 442 215 2713  
FAX : +52 442 220 6464  
n.rodriguez@axoncable.com

#### SPAIN

**AXON' CABLE SPANISH OFFICE**  
C/CAPITÁN HAYA, Nº 1, PLANTA 15  
28020 MADRID  
TEL : +34 91 418 43 46  
FAX : +34 91 556 28 80  
sales@axon-cable.com

#### UNITED KINGDOM

**AXON' CABLE Ltd**  
Admiralty Park - ROSYTH  
DUNFERMLINE - FIFE  
KY11 2YW  
TEL : +44 1383 421500  
FAX : +44 8715 282789  
sales@axon-cable.co.uk

#### USA

**AXON' CABLE INC.**  
1314 PLUM GROVE ROAD  
SCHAUMBURG, IL. 60173  
TEL : +1 847 230 7800  
FAX : +1 847 230 7849  
sales@axoncable.com  
[www.axoncable.com](http://www.axoncable.com)

AXON' AGENT