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<tr>
<th>CAD Design</th>
<th>Structural Design</th>
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<td>3D Modelling</td>
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<td>Wiring Installations</td>
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<td>Interiors refurbishment</td>
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<td>Pneumatic Installations</td>
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<td>Manufacturing Support</td>
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<th>Reliability Availability Maintainability Safety</th>
<th>RAMS Analysis for Industrial and Railways applications</th>
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<td>Life Cycle Cost Analysis</td>
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<td>Analysis FMECA, MTBF, FTA, Software Safety, others</td>
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<td>Integrated Logistics Support planning for Ground Vehicles</td>
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<td>Configuration, Provisioning, Maintenance Program, Infrastructure Plans</td>
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<td>Tooling, Technical Data, Training Plans</td>
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<td>In-Service Experience Analysis</td>
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<td>Operator Customization</td>
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<th>Need Analysis &amp; Concept Definition</th>
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<td>Tooling Design and Modification</td>
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<td>Tooling Certification Test</td>
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<td>Worldwide Logistic Network</td>
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<th>Technical Publications</th>
<th>Technical Data Management Manuals, Handbooks, Worksheets, Catalogues</th>
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<td>Service Bulletins, Work Instructions</td>
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<td>Definition, Authoring, Illustration, Publication</td>
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<td>Interactive Electronic Technical Manuals</td>
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<td>Electronic Devices</td>
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<td>Augmented Reality Platforms</td>
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<td>Animations</td>
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In-Service Support
- In-Service Modifications Technical Tata Cabin Interiors Documentation
- On-Site Engineering Support
- Working Parties
- Service Bulletins & Repair Assessments

Continuous Airworthiness Maintenance
- CAMO (Continuous Airworthiness Maintenance Organization) Outsourcing

Our Clients
- Clients over Europe
- Other Clients

Who we are
- Sonovision Group
- Sonovision Europe Business Unit
Sonovision provides Integrated Logistics Support for each phase and factor that can influence the design, manufacturing, development and maintenance or operation of aeronautical, defence and transport platforms or industrial applications, carrying out activities ranging from design support and technical publications to in-service support.
In the field of **Integrated Logistics Support** we offer a wide range of services to satisfy major clients logistics needs, from design-related aspects to in-service support:

- RAMS Analysis
- Supportability
- Maintenance Programs Engineering
- Tooling and Ground Support Equipment Design and Prototyping
- Tooling and Ground Support Equipment Series Manufacturing
- Technical Publications and Electronic Manuals
- Technical Translation Services
- Training Material Development
- In-Service Support

We know that aeronautical and industrial business requires **complex activities and processes**, and, for this reason, we develop support plans based on a detailed analysis of our clients' requirements, always focused on the operations and profitability of the final product.

We stay with our clients throughout their projects' **entire life cycle**, helping them to improve their solutions and products.
Sonovision Group provides Design Support and Design Integral Solutions for aeronautical, railway and other industrial sectors, including structural design, components, equipment and interiors refurbishing.

Our teams are qualified to participate in every project phase, from styling and sketching at conceptual phase, to 3D modelling and detail design and 2D extraction, as well as manufacturing and assembly, parts modelling, constructive plans, manual development and documentation, etc.

We perform different activities within the CAD design scope:
- Structural design and auxiliary elements
- Mechanism design
- 3D modelling & optimization
- 2D extraction
- Interfaces validation
- Electric schemas
- Wiring diagrams
- Electrical routing
- Electric racks
- Wiring installations
- Electrical systems design
- Cabins, consoles design
- Interiors refurbishment
- Optimization with virtual models
- Manufacturing support
Sonovision Group is a reference provider in the scope of **Risk Analysis and Management**. We provide RAMS technical support for complex rolling stock, railway infrastructure or industrial applications, offering integral solutions which include the management along with the authorities.

We bring innovative RAMS expertise to mechanical, electronic, software and global systems:

- **RAMS Studies** (Reliability, FMECA, MTBF, FTA, etc.)
- **Software Safety** (SIL2 y SIL4)
- **Safety dossiers preparation**
- **Safety Case iaw EN 50129 or GOST Norm**
- **ISA activities - recognised in France (STPG)**
- **Maintenance in operational conditions - ILS, MSG-3, RCM (Reliability Centered Maintenance), OMF, Logistics Databases, Maintenance Data Analysis**
- **LCC studies**
- **Maintenance Programs definition and optimization**
Sonovision Group provides **Integral Support** to civil and military Ground Vehicles Manufacturers to develop the full life cycle end-customer support strategy.

Our teams have the capability to undertake comprehensive ILS programs to ensure all associated training activities, repair and maintenance, both preventive and corrective, assurance and distribution of system spare parts and tooling, plus the logistics engineering for coordinating all these aspects. Our goal is to assure that the system is available, under operating requisites, maintained under specific conditions and inside customer budget for as long as possible.

Our in service support experience of large fleets, allows to provide a configuration management service along the complete life cycle of the system, that results in control and visibility of its updated functional and physical attributes.

Sonovision Group ILS activities for Ground Vehicles include development, support and planning of:
- Logistics Support Analysis (**LSA**) including recording and software support activities
- Maintenance Planning
- Support and Test Equipment
- Life Cycle Cost (**LCC**) analysis
- Level of Repair Analysis (**LORA**)  
- Maintenance Task Analysis (**MTA**)  
- Mean Time to Repair (**MTTR**) analysis
- Failure Mode, Effects and Criticality Analysis (**FMECA**)  
- Reliability, Availability, Maintainability and Safety (**RAMS**) analysis
- Operational Analysis
- Packaging, Handling, Storage and Transportation (**PHS&T**) management
- Disposal Management
- Commercial off the shelf (**COTS**) optimization and obsolescence identification
- Technical Data (**TD**) creation and Management (Contents creation, IETM, platform)
- Training Plan & Training Logistics
- Training contents, Computer-based Training (**CBT**), Simulation (**SW & HW**)  
- In Service Monitoring
Sonovision Group provides integral Supportability, Operability and Reliability services for Aeronautical and Industrial Applications:

**> Customer Request Analysis**
Fault tolerant Architecture definition
Availability & Operational Safety
Requirements Definition and dispatch of these requirements to subsystems

**> Specification Definition**
Support to the process by design organization

**> Enhanced Operability**
Operational reliability
Direct maintenance cost
Maturity studies

**> Supportability Analysis**
Either direct development or support to the supplier to develop it

**> Validation of the Supportability Analysis**
Simulation
Real On-Aircraft Validation

**> Other activities**
Direct negotiations with equipment suppliers,
Maintainability Demonstrations to Customers,
Qualitative Maintenance Analysis (QMA),
Maintenance Task Analysis (MTA),
Develop maintainability process, methods and tools,
Deviation Analysis of maintenance costs
Negotiation of component guarantees with suppliers
We have a wide experience in Maintenance Programs Engineering:

> Design Office source data capture
> Complex System and architecture analysis on Structural (environmental fatigue and accidental damages), and Zonal (EWIS & Lightning/HIRF) analysis using MSG3 methodology
> Maintenance Working Groups presentation
> Maintenance Program Validation by Authorities
> System Certification
> In-Service Experience
> Operator’s Support and Front Desk service
> Maintenance Program Optimization to improve utilisation and costs of maintenance
> Fleet Survey Analysis
> Design Change proposals
Sonovision performs each step of the entire process:

- GSE / Tool Need Analysis
- Assessment of modifications
- GSE/Tooling Concept definition
- GSE/Tooling Life Cycle Analysis
- Design solution definition
- Engineering specialist support
- Acceptance & Certification test
- Modification of existing design
  - Reverse engineering
  - Prototype manufacturing
    - Life cycle analysis
    - Tool certification test
    - Tool modification
- Tool Manual publication and management
Sonovision manufactures large series of Tools, Ground Support Equipment or Piece Parts thanks to a wide and consolidated network of second tiers. We count on a very efficient direct-to-operator packaging and shipment process, with a remarkable added value in terms of cost-savings.

Statement of Conformity and Test Reports (if applicable)

IAQG standard 9102A (Aerospace First Article Inspection Requirement)

We support in-service maintenance and repair of tools and equipments and Final Customer Stock Optimization
We have a large team made up of authors, consultants and illustrators, experts in aeronautical engineering, Technical Publications Standards and illustration, which is exclusively focused on creating technical documents with the tools generally used in the sector.

We produce all types of manuals for maintenance, repair and materials for complex systems: Wiring Diagrams, Parts Catalogs, Maintenance Manuals, Structure Repair Manuals and Work Instructions, etc. covering the technical documents' entire life cycles.

We are experts in the full Technical Publications chain, from defining Business Rules and specifications for technical documents to preparing technical manuals compliant with regulation such as ASD (AECMA) 1000D, 2000M and ATA for different projects.
We develop Operational Documentation and support our clients in the resolution of any query in the Domain of Operational Publications and Operational Support.

We can provide a full technical data coverage including Interactive Electronic Manual software and Web Applications that allows the user to access and navigate easily and smartly through any data contents.

Our activities cover a wide range of products and programming languages (Web, Java, JSP, Tomcat, XSL-Fo, Lucene, SVG, CGM, among others).

We are experts on different Norms (ASD S1000D, AECMA). We can design IETM up to Class IV.

We offer solutions that are easily adaptable to existing data and customer needs.
Sonovision Group provides a wide range of services within the scope of Language Engineering:

- **Translation services** for several industries
- **Interpretation services**
- **SDL/Trados**, Partnership and other translation tools
- Management of **multilingual projects**
- Management of terminology **databases**, glossaries and translation memories

We support a large array of industries: **Defence** (Land, Sea, Air and Cyber-security), **Aerospace, Transport, Energy, IT, Finance and Legal, Communication and Marketing**.

We handle any kind of **topic**: Maintenance Manuals, User Guides, Training material, Contracts, Statements, Summons, Press Releases, Company Magazines, eMailing, Brochures, software, web pages, leaflets, audit reports and practically any other kind of document.

Our languages portfolio covers an extensive range of languages, thanks to our **Translators Network** composed of more than 800 specialists.
Sonovision Group provides an extensive package of solutions for training and learning about aeronautical technologies in Maintenance and Operation areas; from training in the use of systems to development of instruction applications.

Our experts combine their experience in aeronautical engineering with their know-how in learning and training systems.

The key to the efficiency of the training programmes lies in the use of advanced multimedia, graphics and simulation technology, together with high quality personnel interaction.

Our Training Solutions are compatible with ASD S1000D, SCORM and other standards.

We use different technologies (PHP, Apache, Flash, SVG, etc) to adapt each Customer needs. We can produce and incorporate 3D and Flash animations and QUIZ features.

We have a large experience on Demonstrators and vehicle simulators (hardware & software).

Sonovision provides also e-Learning Solutions.
Sonovision Group undertakes innovative projects in the scope of Training and Simulation solutions.

We build ad-hoc 3D solutions or adapt our own software suites to our customer needs.

Sonovision works in the definition of Virtual and Augmented Reality Solutions for industrial and aeronautical applications related to maintenance.
Sonovision Group develops Specific Global Solutions to In-Service Problems or Operators Requests, like:

- Service Bulletins
- Major Repairs definition
- Maintenance Programs, GSE & Technical Data Impact
- Design Change implementation
- On-Site Support

Examples:
A/C Recovery after Landing Gear Collapse or Tail Strike
Avionics Suite Upgrade
VIP Cabin Customization
Sonovision Group provides **Technical Data support** to document any in-service major or minor modification, e.g. passenger-to-freighter aircraft conversions AMM-, TSM-, SRM- Supplements, managing the technical data configuration for the entire fleet.

We can provide support to modification design and design, prototype, test and manufacturing of **Assembly Tooling**.
Sonovision supports aircraft manufacturers for **Cabin Interiors Documentation**:

- Cabin Interior Color Specification
- Cabin Walks / protocol
- Photo documentation of A/C cabin
- Brochures (html, pdf)
- Photo indexing and archiving Delivery Documentation (DICS html, pdf)

Our team supports the entire process from the initial inputs by the Operator and the Design Office to the documentation for the airlines at the real delivered aircraft.
Sonovision Group outsourcing products for Continued Airworthiness management by PART M and PART 145 organizations include:

- **Continuing Airworthiness Management of aircraft** (in service or storage)
- Aircraft development and compilation of amendments.
- **Minimum Equipment List** (MEL) development
- Technical records management and scanning
- Deferred defect monitoring and control
- **Airworthiness Directive** (AD) and **Service Bulletin** (SB) reviews, and Maintenance Task development, monitoring and implementation
- Maintenance planning (in service or storage) and budget control
- Aircraft damage assessment and mapping
- **Reliability** monitoring
- Development of maintenance work packages
- Onsite technical representation and Heavy Maintenance representation
- Warranty administration services
- Management of aircraft conversions, maintenance, repair and modification programs
- Shop visit scheduling and planning
- Spare parts and tooling logistics support
- Registration support
- Aircraft Acceptance Processes
- Management and process monitoring by CAA, documental, visual and flight inspections support
- Support to **SANA/SAFA** internal analysis program
- Technical Publications Library management.
- **Weight & Balance**, Weight Sheets and Electronic Weight Sheets customisation.
- Company Manuals, Operational Procedures
- On board technical data support.
- Electronic Flight Bag management.
- Operational authorisation processes by CAA.

Sonovision Group, thanks to their multitasking team of aircraft maintenance technician and engineers, plays an integral role in the support of aircraft owners, commercial air operators and leasing companies, assuring the continued airworthiness of their fleet.

The service can be customized to meet the specific requirements of each of our customers and qualified maintenance technicians are available to support their operation worldwide.
Sonovision Group is the first European Logistics & Documentation Engineering Group.

Sonovision Group is part of Ortec Group.

It was created in 1948. Currently is composed of 1600 high skilled resources.

We count on a Single Key Decision Maker for the whole Group.

We have a Full secured IT network that can be directly connected to the Client servers and databases.