



**2018  
ANNUAL  
REPORT**



lisi

# 2.5 CENTURIES'



# Lisi

1777

## CREATION

Frédéric JAPY sets up a watch movement factory in Beaucourt (East of France).

1796

## FOUNDING OF THE COMPANY

MIGEON & DOMINE is founded in Morvillars in the Belfort region, later to become VIELLARD MIGEON et Compagnie (VMC). Initially a specialist in the manufacture of wires, the company rapidly integrates processing activities.

1977

## GFD BECAME GFI

GFD acquires BLANC AERO, which specializes in aerospace fasteners and in packaging components for the perfumery sector. This new Group is named GFI.

This operation is made possible thanks to the entry of the PEUGEOT family into the capital of CID (Compagnie Industrielle de Delle). More than 40 years later, these 3 families, KOHLER, PEUGEOT and VIELLARD remain the Group's key shareholders.

1989

## STOCK EXCHANGE INTRODUCTION

GFI is floated on the Paris Stock Exchange's Second Marché and becomes GFI Industries.

1990 / 2000

## ACQUISITIONS

During the 90's, GFI Industries strengthens in its different sectors through the acquisition of more than fifteen companies in Europe and the United States, while the Group withdraws from GFD (standard).

2011

## ACQUISITION OF CREUZET

The Group continues the movement to strengthen and build its position in strategic markets started in 2010. The year 2011 is marked by the following transactions:

- LISI COSMETICS is deconsolidated as at January 1, 2011 following the sale completed on April 6, 2011.
- Acquisition of the Creuzet Group, integrated into the Aerospace division as of July 1, 2011.

2014

## ACQUISITION OF MANOIR AEROSPACE

Mainly specializing in the forging of metal parts for aerospace applications, the Manoir Aerospace Group has been consolidated since June 5, 2014 into LISI AEROSPACE with the aim of strengthening the Structural Components Business Group with the integration of complementary technologies.

2015

## CREATION OF LAAM

The LISI Group enters the world of 3D printing with the creation of a subsidiary, LISI AEROSPACE Additive Manufacturing, dedicated to the additive manufacturing of aerospace mechanical parts.

# HISTORY

1806

## 1<sup>ST</sup> FORGED WOOD SCREWS

JAPY Frères and VIELLARD & MIGEON decide to join forces to launch the first industrial manufacture of forged wood screws in France.

1897 / 99

## CREATION OF SID

A bolt manufacturing business is set up at Champagny by the BOHLY family; the Société Industrielle de Delle is founded by the DUBAIL-KOHLER family in the town of Delle, Belfort. The company quickly begins to specialize in the manufacture of machine-turned screws.

1968

## CREATION OF GFD

These family-run businesses (BOHLY, DUBAIL-KOHLER and VIELLARD) merge to form a company called GFD, thus becoming France's foremost manufacturer of standard and automotive nuts and bolts.

2002

## GFI BECAME LISI

To better delineate its specialist areas, GFI Industries becomes LISI, (LInk Solutions for Industry; its three divisions each take on this name and add their main business line: LISI AEROSPACE, LISI AUTOMOTIVE and LISI COSMETICS. The strategy of focusing on core business continues:

- Sale of non-strategic business lines (GFD, Ars Industries and the production unit at Aillevilliers),
- Acquisition of California's MONADNOCK by LISI AEROSPACE.

2010

## EXTERNAL GROWTH

The Group returns to external growth with two major acquisitions:

- Acquisition by LISI AUTOMOTIVE of two French sites from the American Group, Acument Global Technologies, specializing in the manufacture of fasteners for the automotive industry.
- Purchase by LISI MEDICAL of a site producing hip replacements from the American Group, Stryker Corporation, a leading global provider of medical technologies, which strengthens the initial acquisitions of 2007.

2016

## ACQUISITION OF REMMELE

The LISI Group acquires 100% of the shares of Remmele Medical Operations (USA), a company that specializes in the manufacture of implants and instruments for Mini-Invasive Surgery.

2017

## ACQUISITION OF TERMAX

On October 31, 2017, the LISI Group buys 51% of the shares of TERMAX (Automotive USA) and undertakes to buy back the 49% of the remaining shares by March 31, 2021.

2018

## DOUBLE CERTIFICATION

The LISI Group receives double ISO 14001 and OHSAS 18001 certification for all its activities. Previously each LISI site was individually certified, but now LISI is certified through a single multi-site certification.

LISI AUTOMOTIVE confirms in November 2018 the acquisition of the assets of the American company Hi-Vol Products which aims to strengthen its global position in the production of mechanical safety components with a strong technical base in North America.

On December 31, 2018, LISI AUTOMOTIVE sells BETEO GmbH & Co. KG. (€6.9 million in 2018), a company that specializes in surface treatment, to Germany's BENSELER with which a subcontracting agreement has been signed.



## RESPONSIBLE

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## INNOVATION

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## CAPEX FOR THE FUTURE

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## LISI AEROSPACE

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## LISI AUTOMOTIVE

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## LISI MEDICAL

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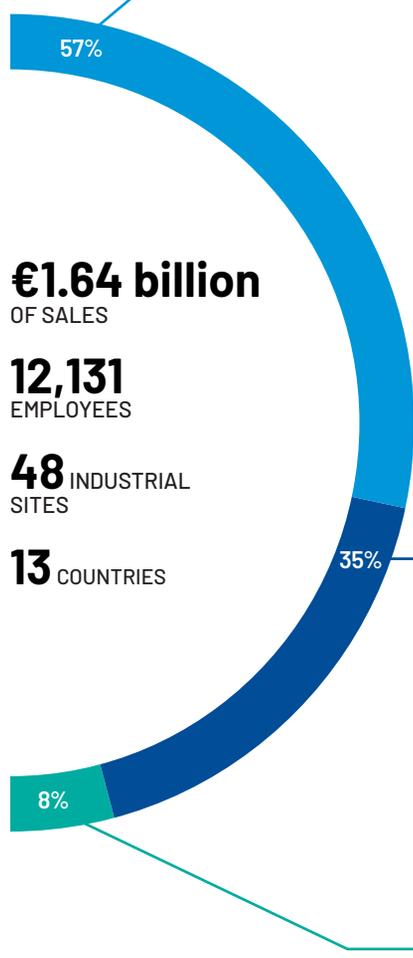
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# PROFILE

LISI is a global industrial group specializing in the manufacture of high value-added assembly and component solutions for the aerospace, automotive and medical industries.

A partner of the world's leading players and wrought by its long-term family values, LISI has been innovating and investing in research and development of new products. The Group adapts its industrial tool to meet the current and future needs of its customers, especially in terms of quality, safety and performance. The Group differentiates itself on two strategic axes: innovation and operational excellence.



**€1.64 billion**  
OF SALES

**12,131**  
EMPLOYEES

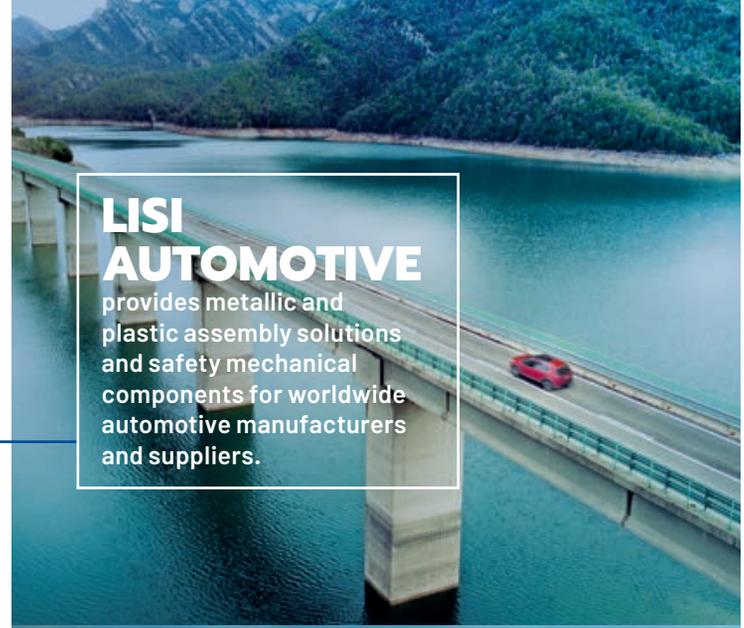
**48** INDUSTRIAL  
SITES

**13** COUNTRIES

BREAKDOWN OF  
GROUP SALES



**LISI  
AEROSPACE**  
manufactures fasteners,  
assembly and structural  
components for the world  
largest players in the  
aerospace sector.



**LISI  
AUTOMOTIVE**  
provides metallic and  
plastic assembly solutions  
and safety mechanical  
components for worldwide  
automotive manufacturers  
and suppliers.



**LISI  
MEDICAL**  
manufactures medical  
implants, ancillary  
implants and value added  
instruments.

# A YEAR MARKED BY INCREASED ECONOMIC VOLATILITY

**D**riven by the noticeable volatility of its markets, the Group's stock did not do well over the year. First, there was significant adjustment of aerospace demand in Europe. Then, the second half of the year saw a significant drop in automotive markets. Thanks to the acquisitions made in the United States and the rise of the dollar toward the end of the period, the Group's sales stood at € 1.64 billion, stable (+0.1%) compared to the previous year, and down -2.6% on a constant scope and exchange rate basis.

Such volatility in sales weighed heavily on the LISI Group's results with, in particular, a -21% decline in EBIT and ROCE (Return On Capital Employed) undergoing pressure at 10.6%, down -3.7 points. In this respect, both aforementioned striking economic factors were particularly difficult to handle:

- The drop in inventories, combined with a structural change in demand from a major customer in the European aerospace industry, created a situation of under-activity at several industrial sites.
- In the Automotive Division, the overheating of the first half of the year and the fall in activity since September 2018 resulted in both of these extra costs being impossible to absorb in full during the period.

The Group responded by taking appropriate action to adjust its costs to the new market conditions, particularly in the aerospace sector, to develop its most efficient production areas and to position itself on high value-added products, with in particular the acquisition of Hi-Vol Products in the United States. The contribution of the acquisition of Termax (United States) in 2017 was particularly beneficial for the continued contribution of the Automotive Division.

However, production adjustments initiated towards the year end were not sufficient to avoid a slight increase in inventories.

“Thanks to the acquisitions made in the United States and the rise of the dollar toward the end of the period, the Group’s sales stood at €1.64 billion, stable (+0.1%) compared to the previous year.”

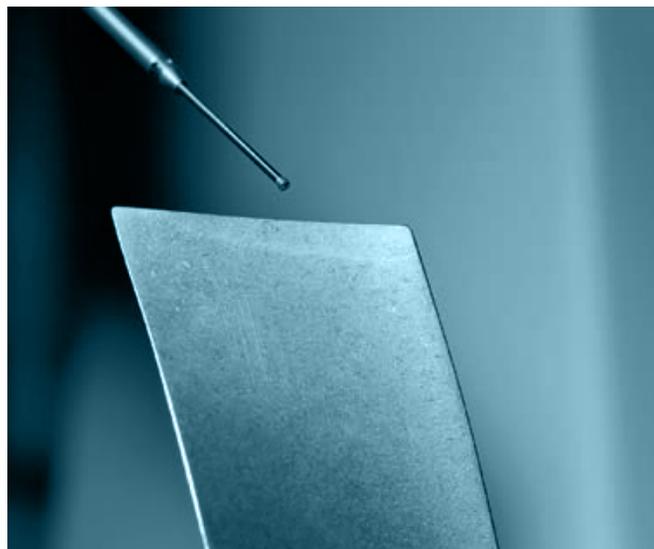


**GILLES KOHLER**  
Chairman of the Board

**EMMANUEL VIELLARD**  
Chief Executive Officer

## LETTER FROM THE MANAGEMENT

The Group pursued its progress and qualitative efforts across all its areas of development and mainly on the two pillars of strategic differentiation, namely innovation and operational performance.



## INNOVATION

Both in the aerospace and automotive sectors, developments in new innovative and technical products have never been so numerous and represent a significant future volume of business. These product developments are market-specific: 28 patents filed in 2018 for the entire Group, as well as all the joint developments of new products completed with customers in the aeronautical fastener and automotive segments, which amount to a very significant sales revenue. In the shorter term, the Group has focused on the following aspects:

- A host of innovative assembly systems on the Boeing 777X in connection with composite applications;
- New metal leading edges for the GE9X;
- Innovative products for the Electrical Parking Brake (EPB) applications at leading global automotive OEMs;
- Cross-synergies resulting from the sale of concepts and technology between Termax in the United States and the rest of Clipped Solutions Business Group in Europe;
- New products incorporating original technologies in the segment of minimally invasive surgery for the medical sector.

Some of these examples of specific products created, developed and industrialized by the Group should generate business as of 2019.

Process innovation is also a major differentiator. On the one hand, thanks to its recent acquisitions, the Group offers its customers an efficient global production infrastructure across its divisions. On the other hand, the level of investment again reached a peak in 2018 at €131 million, after an all-time high in 2017 (€140 million). A new movement is turning to the exploration of digital manufacturing with a dedicated team and clearly identified projects. In this respect, we must salute and applaud the appointment of the Saint-Ouen-l'Aumône plant as "Showcase Industry of the Future" and other initiatives that represent as many pilot workshops in different geographical areas as France, the United States or Germany.



## STRIVING FOR OPERATIONAL EXCELLENCE

Through its “LISI System” deployment model, the Group has reached reassuring maturity for all the performance areas and has been able to deploy them on the two acquisitions of 2017 and 2018.

In terms of security, LISI is now achieving a level of excellence close to the objective of a 10.0 TF1, which will allow it to roll out a full CSR (Corporate Social Responsibility) project in 2019.

Finally, in Controlling, all sites now deploy the same methods of monitoring and management rigor essential to drive performance.

All of these efforts are aimed at providing all LISI customers with product offerings at the expected level of service and at pursuing our approach of profitable growth and market share gains. The Group must be a key partner for all its customers and markets to consolidate its critical global size. There are still many areas of progress and a long way to go in this momentum, which has been going on for many years and does not seem to be slowing down.

Nevertheless, the Group and its divisions will remain attentive about the business cycle movements that might occur at any time in an unstable environment in order to better adjust the level of production and fixed costs.

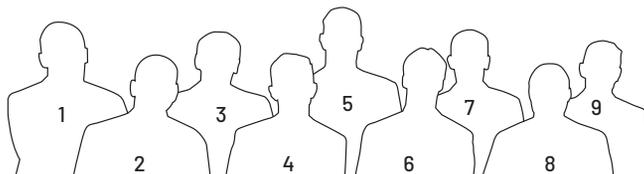
This cautious attitude has incited us to opt for a dividend distribution in 2019 for the year 2018 of €0.44 per share (down from €0.48 in 2018).

The Group will pursue all of its progress initiatives by focusing on its employees’ strong involvement and on the trust of its major customers while maintaining an attitude of respect for all stakeholders.

**EMMANUEL VIELLARD**  
Chief Executive Officer

**GILLES KOHLER**  
Chairman of the Board

# EXECUTIVE COMMITTEE



**Jean-François MICHELETTI (1)**  
Senior Vice President - Finance  
of LISI AEROSPACE

**Jean-Marc DURANO (2)**  
Chief Executive Officer of LISI MEDICAL

**Christian DARVILLE (3)**  
Senior Vice President  
Administration & Strategic  
Development North America  
of LISI

**Christophe LESNIAK (4)**  
Senior Vice President Industrial  
and Purchasing Manager of LISI

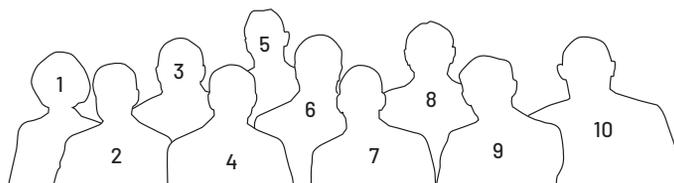
**Antoine GREMILLET (5)**  
Senior Vice President General Manager  
Business Group  
Forged Integrated Solutions  
of LISI AEROSPACE

**Jean-Philippe KOHLER (6)**  
Deputy CEO in charge of internal audit  
and HR coordination

**Raphaël VIVET (7)**  
Financial Controller  
of LISI

**Cédric DEJEAN (8)**  
Senior Vice President General Manager  
Business Group Fasteners Europe  
of LISI AEROSPACE

**Christophe MARTIN (9)**  
Senior Vice President General Manager  
Business Group  
Threaded Fasteners France  
of LISI AUTOMOTIVE



**Cécile LE CORRE (1)**  
Chief Legal Officer  
of LISI

**François LIOTARD (2)**  
Chief Executive Officer  
of LISI AUTOMOTIVE

**Jean-Louis COLDERS (3)**  
Chief Executive Officer  
of LISI AEROSPACE

**Emmanuel VIELLARD (4)**  
Chief Executive Officer  
Chairman of LISI AEROSPACE  
Chairman of LISI AUTOMOTIVE  
Chairman of LISI MEDICAL

**Ingo GREUEL (5)**  
Senior Vice President General Manager  
Business Group  
Threaded Fasteners Germany / Spain  
of LISI AUTOMOTIVE

**Marc STEUER (6)**  
Senior Vice President General Manager  
Business Group  
Extrusion Forming & Sheet Metal  
of LISI AEROSPACE

**Emmanuel NEILDEZ (7)**  
Chief Operating Officer  
of LISI AEROSPACE

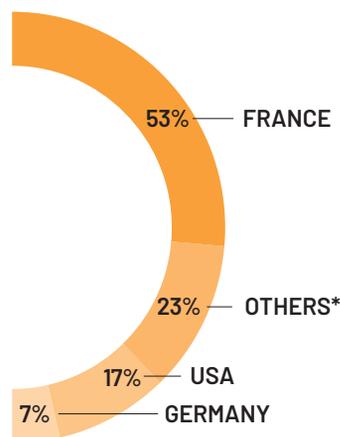
**Laurent SANCHEZ (8)**  
Senior Vice President General Manager  
Business Group Clipped Solutions  
of LISI AUTOMOTIVE

**François-Xavier DU CLEUZIOU (9)**  
Senior Vice President – Customers  
of LISI AEROSPACE

**Martin BELEY (10)**  
Senior Vice President General Manager  
Business Group  
Safety Mechanical Components  
of LISI AUTOMOTIVE

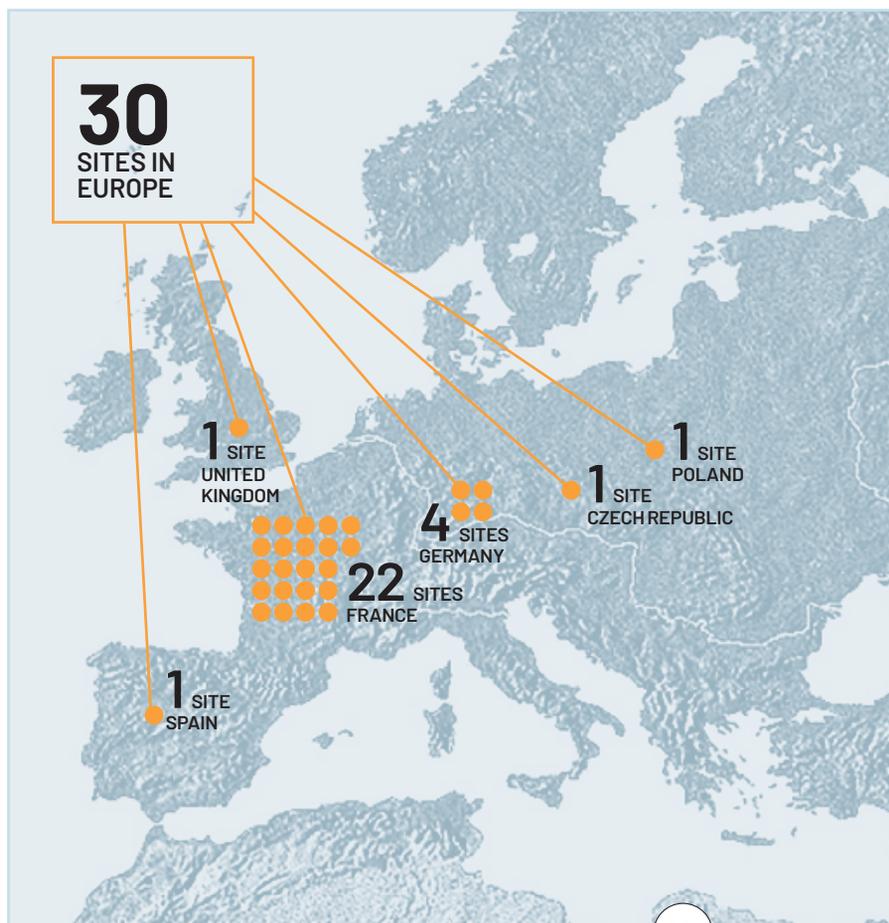
# A GROUP PRESENT IN 13 COUNTRIES

LISI is an international group. With operations in 13 countries, it is able to assist all of its major customers wherever markets demand it.



BREAKDOWN OF EMPLOYEES BY GEORGRAPHICAL AREA

\*incl. Canada, China, Czech Republic, India, Mexico, Morocco, Poland, Spain, Turkey, United-Kingdom



## LISI AEROSPACE

**21** SITES INCLUDING 11 IN FRANCE

### France

- Ayguemorte-les-Graves
- Argenton-sur-Creuse
- Bar-sur-Aube
- Bologne
- Marmande
- Parthenay
- Saint-Brieucn
- Saint-Maur
- Saint-Ouen-l'Aumône
- Vignoux-sur-Barangeon
- Villefranche-de-Rouergue

### Worldwide

- Bangalore\* (India)
- Casablanca (Morocco)
- Chihuahua\* (Mexico)
- City of Industry (USA)
- Dorval (Canada)
- Izmir (Turkey)
- Rugby (United Kingdom)
- Rzeszów (Poland)
- Tanger (Morocco)
- Torrance (USA)

## LISI AUTOMOTIVE

**22** SITES INCLUDING 9 IN FRANCE

### France

#### Production

- Dasle
- Delle
- Dreux
- La Ferté-Fresnel
- Melisey
- Puiseux
- Saint-Florent-sur-Cher

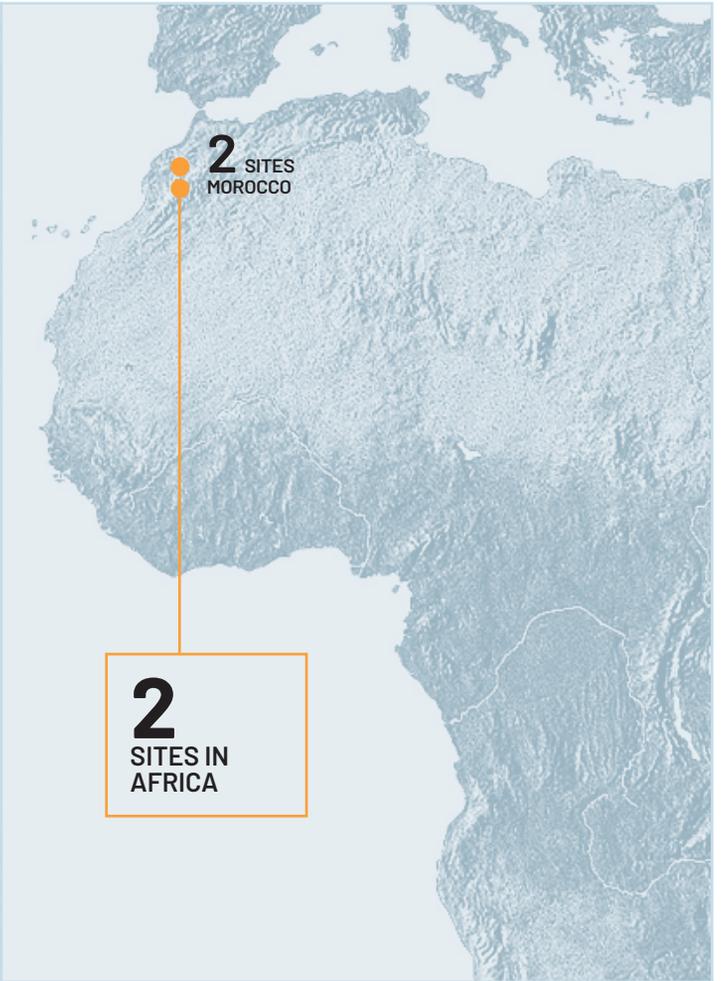
#### Support activities

- Grandvillars (Raw material preparation)
- Lure (Tools)

### Worldwide

- Čejč (Czech Republic)
- Fuenlabrada (Spain)
- Heidelberg (Germany)
- Kierspe (Germany)
- Lake Zurich (USA)
- Livonia (USA)
- Mellrichstadt (Germany)
- Monterrey (Mexico)
- Zhuozhou (China)
- Queretaro (Mexico)
- Shanghai (China)
- Suzhou (China)
- Vöhrenbach (Germany)

\* Secondary sites



**LSI MEDICAL**

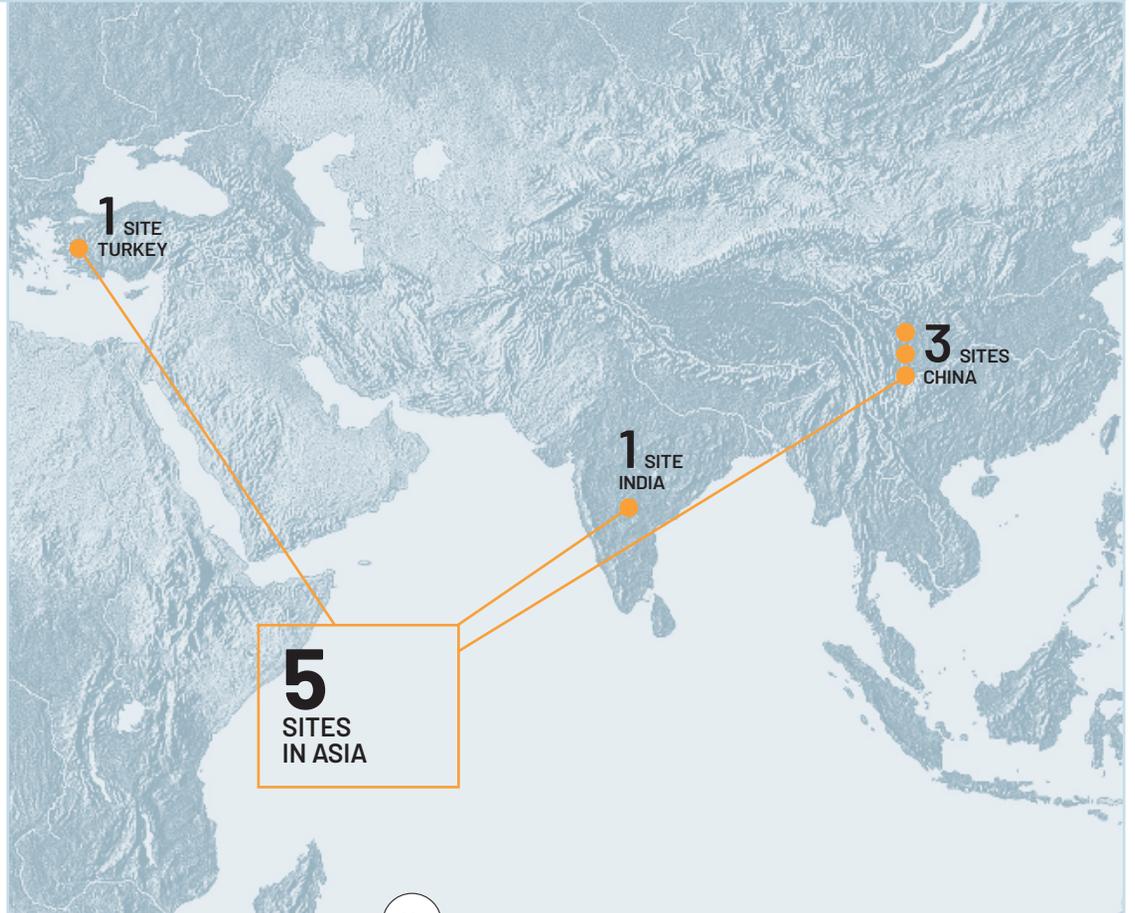
**5** SITES  
INCLUDING 2 IN FRANCE

**France**

- Hérouville-Saint-Clair
- Neyron

**Worldwide**

- Big Lake (USA)
- Coon Rapids (USA)
- Escondido (USA)



# A COMMON APPROACH TO EXCELLENCE



Throughout its activities and in each of the areas in which it operates, the LISI Group strives for operational excellence. The LISI System program is at the heart of the Group's industrial performance. In an increasingly competitive environment, this system provides effective responses to the many demands we must meet: competitiveness of plants, efficiency and responsiveness of organizations - operational and support functions - development of innovative projects, digital transformation, risk control, training of women and men in the company.

## A SET OF STRUCTURING PROGRAMS

Developed specifically to meet the Group's needs based on best practices, LISI System is structured around 3 structuring programs, 6 support processes and is deployed on the 6 hierarchical levels, from the Group's management to the Autonomous Production Groups (APG), at the heart of factories and services. Finally, LISI System integrates the dimensions of quality management and training, with LKI, the LISI Knowledge Institute, which broadens the technical, managerial and personal development skills of the Group's employees.

Controlled through LISI System, the performance of the Group's tools and production methods, the rigor of the procedures applied in the organization and management functions constitute today a major competitive advantage.



## LISI SYSTEM: 1 SYSTEM / 3 PROGRAMS

**leap**

### LEAP

#### LISI EXCELLENCE ACHIEVEMENT PROGRAM

At the origin of the LISI System, the LEAP program brings together all the tools for improving industrial performance developed within production sites.



### E-HSE

#### HSE EXCELLENCE

The E-HSE program focuses on issues related to the control of health, safety and environmental risks.



### COS

#### CONTROLLING OPERATING SYSTEM

COS applies LISI System improvement methods to all accounting and financial functions.



# RESPONS

LISI strives to encourage its employees to share the same culture and the same industrial expertise, to serve its customers with the same level of quality around the world. This common ambition, which makes it possible to meet these challenges while guaranteeing everyone's safety, is at the heart of the LISI Group's approach.



# IBLE

The Group takes responsibility for the social and environmental issues involved in its activities, and proposes concrete and measurable formal responses.

**P.16 | HUMAN RESOURCES**

**P.20 | LEAP PROGRAM**

**P.22 | E-HSE**

**P.24 | HEALTH & SAFETY**

**P.26 | ENVIRONMENT**

**P.28 | BUILDER**

The markets in which the LISI Group operates are in perpetual motion and require some anticipation and ongoing adjustments, as well as a very high level of industrial performance. The quality of our responses requires the ongoing commitment of the 12,131 men and women involved in the development of the Group in each of the 13 countries in which it operates. This ability to offer all-encompassing, innovative, and irreproachable solutions allows us to win the trust of our customers.

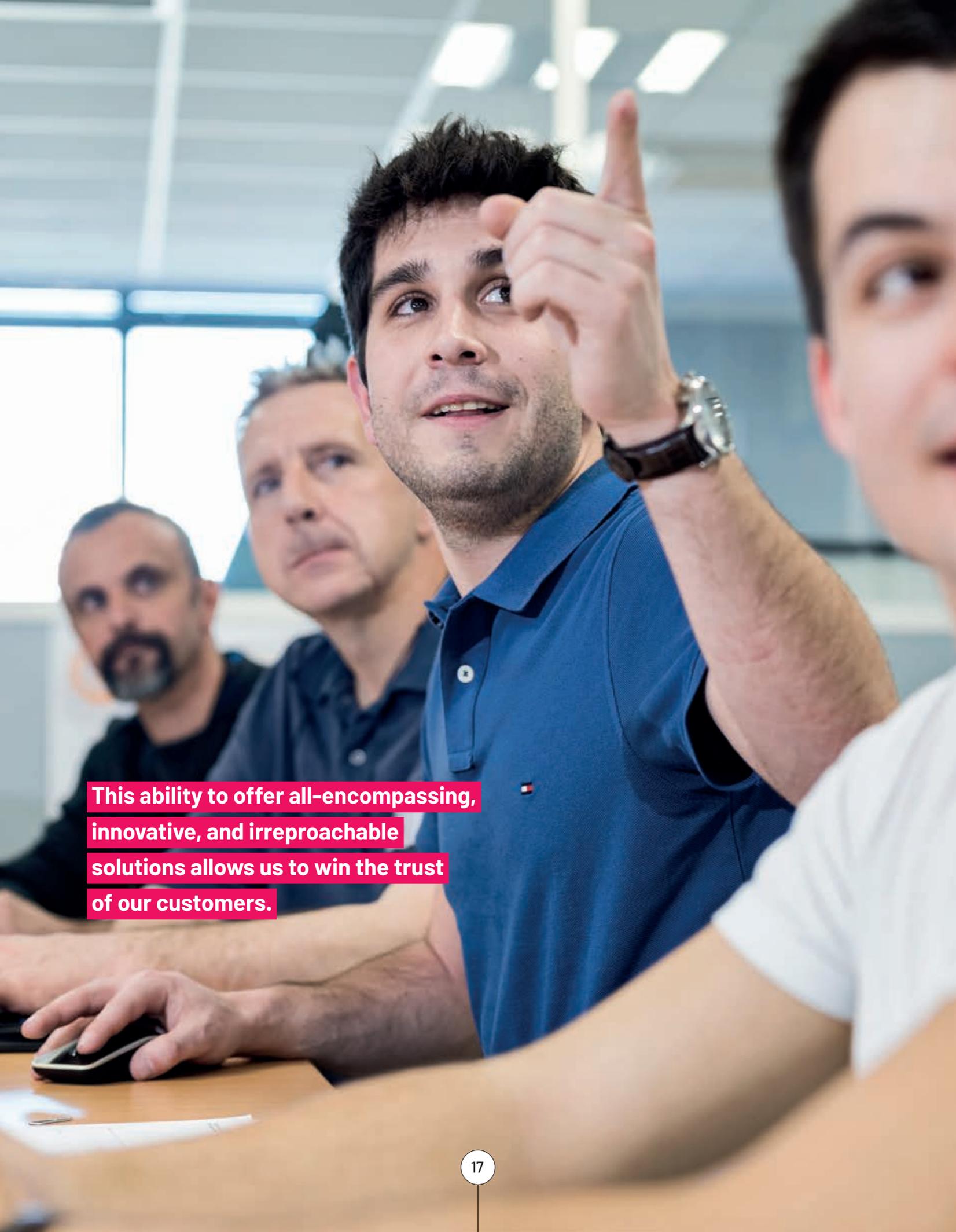
# **TAKING ON THE CHALLENGE TOGETHER**

12,131

Employees worldwide

**+1.3%**

compared to 2017



**This ability to offer all-encompassing, innovative, and irreproachable solutions allows us to win the trust of our customers.**

**221,000**  
hours of training  
delivered in 2018

**€8 million**  
devoted to training  
in the world



## INTEGRATING AND ATTRACTING TALENT

To guarantee such high standards, LISI pays particular attention to training and efforts that allow for the emergence of a common culture of quality. Especially during the integration phases, as was the case for the 131 American employees of Hi-Vol Products, the company acquired by LISI AUTOMOTIVE in September 2018 (see also p. 62). This effort to welcome and define common values is also essential to attract and retain talent. In 2018, a total of 1,695 men and women joined the LISI Group, representing a net increase in workforce of 1.3%. In addition to the 541 trainees who came to discover the company this year, all 3 divisions welcomed 324 apprentices over the period (+15%).

EMPLOYEE BREAKDOWN BY DIVISION	2018	2017	N/N-1 DIFFERENCE
<b>LISI AEROSPACE</b>	7,214	7,251	-0.5%
<b>LISI AUTOMOTIVE</b>	3,931	3,773	+4.0%
<b>LISI MEDICAL</b>	959	909	+5.1%
HOLDING COMPANY	27	25	+4.0%
<b>TOTAL</b>	<b>12,131</b>	<b>11,958</b>	<b>+1.3%</b>





In 2018,  
women account  
for 22% of the Group's  
overall workforce.



## ASSISTING AND ENCOURAGING MOBILITY

To assist employees in their professional development, the LISI Group considers training as a structuring component of its human resources policy. The career paths and in-house training schools set up in the divisions thus make it possible to offer degree courses to those who want them, as well as to adapt the available know-how to market developments. The LKI University (LISI Knowledge Institute), in charge of developing skills and talents, offered 128 sessions, i.e. 1,014 training days attended by 634 Group employees. Internal, geographical and functional mobility, which constitutes the other pillar of this support, is ensured by the *Bourse à l'emploi*. Accessible from the intranet, it allows employees to drive their own career development.

Historically placed at the heart of the LISI Group's continuous improvement strategy, the LEAP program - or LISI Excellence Achievement Program - brings together all the methods for improving industrial performance deployed at the production sites since 2011. Since its inception, we have set up the main management tools (PSM and A3) and the culture of standards (WSM, 5S, SMED) across the Group's sites. The year 2018 clearly marks a new boom, with the main objective of transforming the maturity of our sites into operational performance.

# **GAINING EFFICIENCY** **TEAM WORK**

The year 2018 capitalized on the maturity acquired by the sites in order to set new performance targets.



11  
PLANTS  
HAVE  
REACHED  
A HIGHER  
LEVEL  
IN 2018

2017	2018
<p><b>3 PLANTS GOLD</b> 1 LISI AEROSPACE - 2 LISI AUTOMOTIVE</p> 	<p><b>7 PLANTS GOLD</b> 4 LISI AEROSPACE - 3 LISI AUTOMOTIVE</p> 
<p><b>8 PLANTS SILVER</b> 4 LISI AEROSPACE - 4 LISI AUTOMOTIVE</p> 	<p><b>12 PLANTS SILVER</b> 4 LISI AEROSPACE - 7 LISI AUTOMOTIVE - 1 LISI MEDICAL</p> 
<p><b>22 PLANTS BRONZE</b> 8 LISI AEROSPACE - 11 LISI AUTOMOTIVE - 3 LISI MEDICAL</p> 	<p><b>18 PLANTS BRONZE</b> 10 LISI AEROSPACE - 6 LISI AUTOMOTIVE - 2 LISI MEDICAL</p> 



## NEW OPTIMIZATION PROCESSES

Just-in-time production tools (Kanban, generic Kanban and CONWIP) have been strengthened to minimize the work in progress and reduce production lead times. Two new optimization processes have been deployed on the sites: management control, which makes it possible to set objectives at all levels of the company with daily indicators and to set up a system for verifying compliance with standards; the *kaizen* event, a pillar of the search for performance by optimizing the organization of work. The implementation of these tools comes with a new LEAP benchmark. The latter has been operational since 2019 for the seven plants that have reached the "Gold" level for the old benchmark. It opens new performance prospects and will be rolled out across the sites as of 2021.

For many years, the LISI Group has considered measuring the environmental and social impact of its industrial activities to be an indicator as efficient as its economic and financial performance. The actions it implements to optimize control of these risks are determined at the highest level of the company. They are deployed across the sites methodically, based on the LISI Excellence-HSE program, an integral part of the LISI System for these issues.

# RISK CONTROL PART OF CORPORATE CULTURE



In 2018, the ISO 14001 and OHSAS 18001 audits confirmed the Group's maturity gains in terms of health and safety and the environment, with LISI now being certified at Group level according to these two standards.





## A PROGRAM, A COMMON CULTURE

This program sets ambitious objectives and encourages excellence throughout the company's HSE strategy. Designed to accelerate the emergence of this common culture, LISI Excellence HSE (E-HSE) aims to lay a solid foundation for consistency with fundamentals such as compliance with conformity obligations, whether regulatory or other, as well as the continuous improvement of our performance results and organizations. LISI E-HSE relies on a set of operational tools that can be used to act according to 15 areas of excellence of which 3 fundamentals: risk assessment and control; the implementation of common HSE rules; the development of safer behaviors.

Finally, this program makes it possible to assess each of the Group's sites according to four levels of maturity: the first fixed level relates to compliance with international standards ISO 14001 and OHSAS 18001. It is followed by the Bronze, Silver and Gold levels, which are the growing levels of excellence and appropriation of the HSE culture. In 2018, 10 LISI sites were ranked Bronze.



# PROTECTION & PREVENTION PERMANENT COMMITMENTS

**-29%**

**Decline in TFO accidents  
(with stoppage) since 2013  
(employees + temps)**

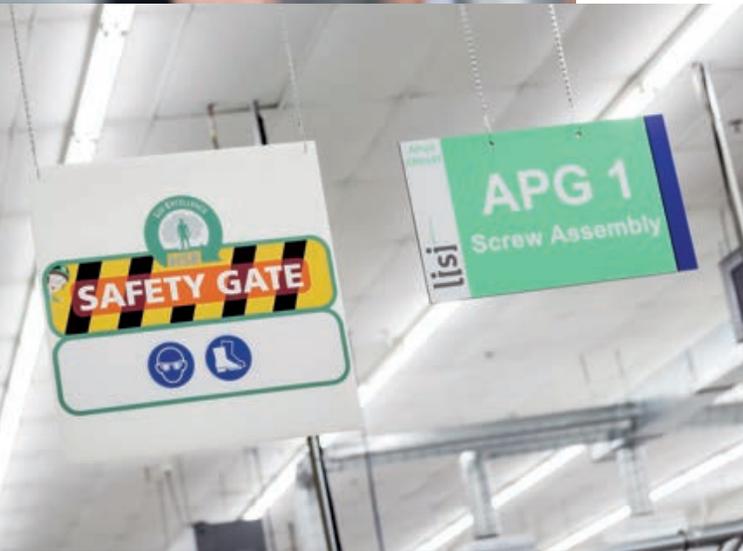
**-37%**

**Decline in TF1 accidents  
(with and without stoppage)  
since 2013 (employees + temps)**

Ensuring the safety, health and well-being at work of all LISI Group employees is a top priority for the company. The continuous improvement procedures and methods put in place to reduce the risks are in accordance with the OHSAS 18001 standard for which LISI is certified. The Group's objective is to achieve, by 2020, an accidentology threshold of less than 8 accidents at work with or without stoppage per million hours worked, for all collaborators, employees and temporary personnel (TF1). In 2018, this rate dropped from 11.61 to 10.11 (as at 12/31/2018), being a drop of -37% in 5 years. This represents the best results ever achieved by the Group. This improvement reinforces all the teams on the effectiveness of the LISI E-HSE program and the employees who implement it on a daily basis.



**In 2018, 66% of production sites have an accident with and without a stoppage frequency rate of less than 10 accidents per million hours worked.**



## **A PRIORITY OBJECTIVE OF E-HSE: TF1 < 8**

To achieve this, the LISI Group is making progress in two directions. The first one aims to secure all the work tools by working on the compliance of machines, especially those that are most dangerous. The second direction is the development of the Safety Culture Program (SCP), which is dedicated to risk prevention and the development of safety behaviors as part of the overall LISI E-HSE program (see p.22-23). This educational tool is based on 18 training modules targeted at group managers. The latter then pass on the prevention messages to the teams in 15-minute sessions.

Nowadays, employee involvement makes it possible to reduce accidents on a regular basis. In 2018, 66% of production sites had a work accident with or without stoppage (TF1) rate of less than 10, which was the intermediate target for 2018.

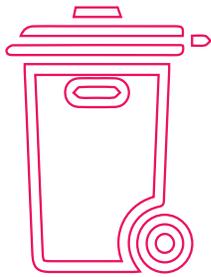
The LISI Group has long been measuring the impact of all its activities on the environment. These assessments help it implement corrective actions to reduce or limit its environmental footprint and set a specific course. LISI aims to reduce its energy consumption by 3% and its water consumption by 4% by 2020. To achieve these objectives, the Group implements the continuous improvement methods of the ISO 14001 international standard for which it is certified. Significant results are achieved each year. They serve as performance measurement points.

# **RESPONSIBLE DEVELOPMENT A GENERAL VISION**

**LISI aims to reduce its energy  
consumption by 3% and its water  
consumption by 4% by 2020.**



## Footprint | Quantity consumed per €1,000 of added value



**WASTE**

**58.7 Kg**

/€k (added value)

**92.5%**

sorted



**ENERGY**

**0.661 MWh**

/€k (added value)



**WATER**

**1.089 m<sup>3</sup>**

/€k (added value)

## SAINT-OUEN-L'AUMÔNE, PILOT SITE

A pioneer in this field, the Saint-Ouen-l'Aumône site has put into practice the recommendations of the ISO 26000 standard, which sets out how companies should behave in terms of social and environmental rules. For example, the site has published a pilot CSR report that outlines the site's contributions and initiatives on these topics: High Environmental Quality building; integration of the site with the groups of ambassador companies of the Cergy-Pontoise territory; co-founding of an inter-company nursery; participation in the local Eco Mobility challenge, etc.

## EFFORTS AT THE BOLOGNE PLANT

In 2018, the LISI Group consumed 827,668 cubic meters of water, i.e. saving 7.5% in absolute value. As a result of LISI's activity, the ratio between water consumption and produced added value decreased in 1 year from 1.10 m<sup>3</sup> / €k (added value) to 1.089 m<sup>3</sup> / €k (added value). The refurbishment works carried out on the network of the only site of the Forges de Bologne, in France, made it possible to save 56,000 m<sup>3</sup> in one year. The Bologne site is highly energy-consuming. It alone absorbs 11.7% of the energy consumed by the Group. At the heart of the improvement actions, the Forge 2022 project will incorporate best practices in terms of energy saving.



Throughout its history, the LISI Group has remained attached to its regional roots, whose initial epicenter lies in Franche-Comté Region, in the East of France. The Group's industrial history, as well as its development in France and around the world, are active participants in the development of territories. The Group's investments and the jobs they generate locally, guide infrastructure, modernize neighborhoods, cities and redesign landscapes. They allow for the rehabilitation and maintenance of old historic buildings, forges, reflecting the industrial history of the regions where the Group has its roots.

# A PARTICIPANT IN THE DEVELOPMENT OF TERRITORIES



**GRANDVILLARS**  
FRANCHE-COMTÉ

## LISI HEAD OFFICE

The Group is supporting the rehabilitation of the Grandvillars forge area led by the Territory's *Communauté de Communes*. After the LISI AUTOMOTIVE division, which came in 2014, the LISI holding company in turn has set up shop in this historic industrial area. Transferred from Belfort, the Group headquarters settled in 2018 in the building R of the forges, built more than 200 years ago. It will also eventually house the premises of LISI Knowledge Institute.



**PARTHENAY / NOUVELLE-AQUITAINE**

## **3 AUTONOMOUS PRODUCTION UNITS**

Established in Parthenay, in the Deux-Sèvres, since 1984, LISI AEROSPACE employs 238 people. A local player in this region where the metallurgical industry is strongly represented, the division has chosen to establish a 3<sup>rd</sup> autonomous production unit of 7,000 m<sup>2</sup> with the support of the Nouvelle-Aquitaine Region and the State. The complex will house a research and development center and will focus on hard metal machining, polishing, superfinishing and the development of new technological models. It should allow for the creation of 80 jobs by 2021, including highly skilled for the R&D center.



**DELLE / FRANCHE-COMTÉ**

## **HEADING TOWARDS THE DELLE OF THE FUTURE**

The LISI AUTOMOTIVE plant at Delle, located in the heart of the Group's territory; was the last of the Group's 5 Franche-Comté factories not to have been renovated. The project "Delle of the Future", initiated in 2017, should culminate in 2020 with the full rehabilitation of this historic site and project it into the future. The plant currently employs some 300 people in production and another 180 within the division's central services.



**VILLEFRANCHE-DE-ROUERGUE / OCCITANIE**

## **THE PLANT 4.0 AT THE HEART OF THE TERRITORY**

LISI AEROSPACE was feeling somewhat constrained in the buildings it has been occupying since 1939. Now it enjoys the comfort of new buildings in the business area of La Glèbe. The last phase of the works, with a surface area of 10,500 m<sup>2</sup>, will be completed in early 2019 and will add up to the first phase, with the same surface area (in service since 2016). LISI takes advantage of this transfer to make a technological and organizational leap and thus create a 4.0 tool: optimization of flows, implementation of on-line machines, robotization, closed loop machining, etc. More than 700 pieces of equipment have been moved or installed for this project. Buoyed by an investment of €30 million, the initiative helps maintain jobs in the region. LISI AEROSPACE has 35 local partners.

28

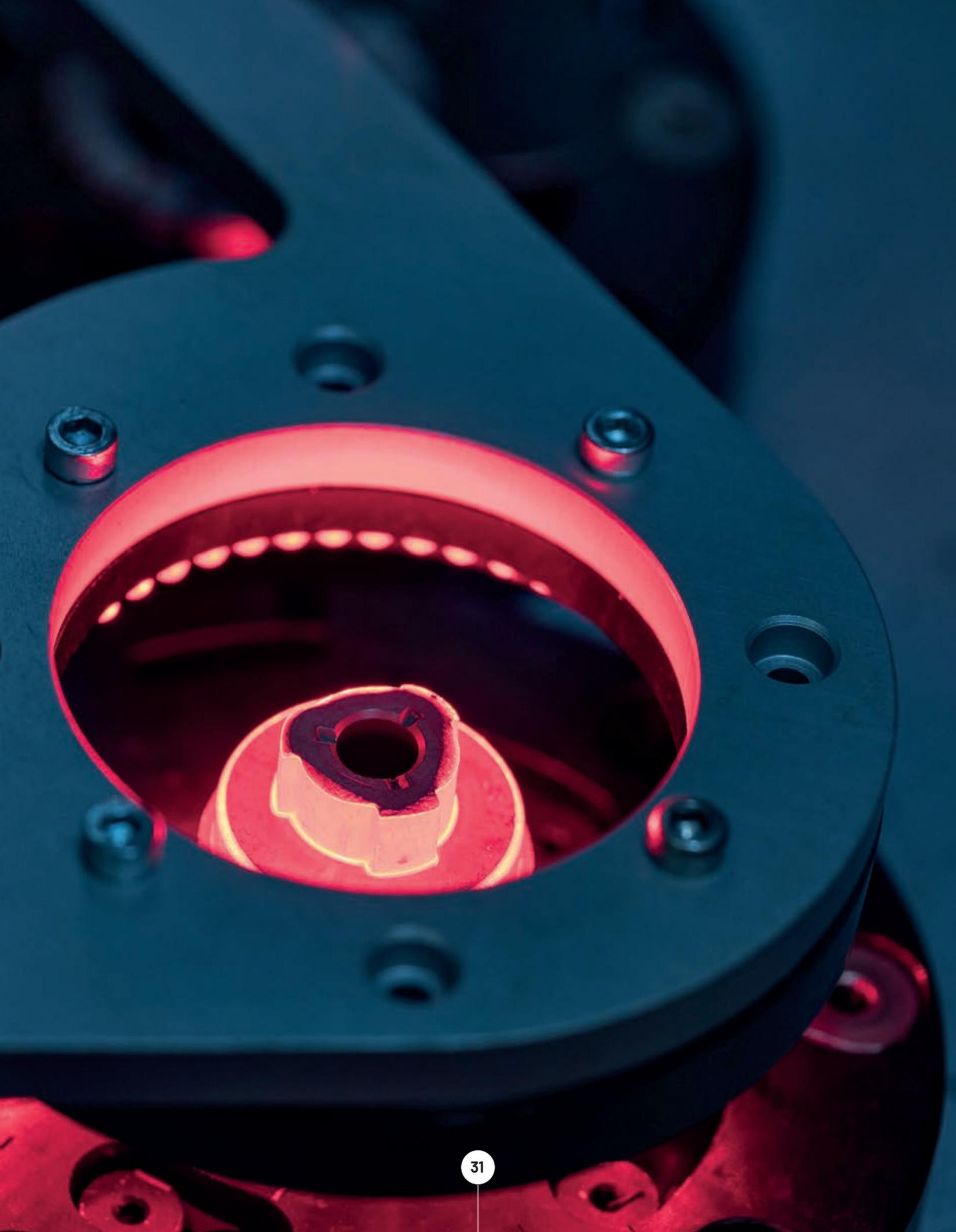
patents filed in 2018  
Including 10 inventions

€30.9M

R&D investments in 2018 (1.9% of sales)  
after € 27.7 million in 2017 (1.7% of sales)

# INNOVATION

In the three major industries where the LISI Group operates worldwide - aerospace, automotive, medical - technological expertise and innovative capacity are the competitive assets that make a difference. LISI invests relentlessly in these two pillars in order to meet the challenges posed by the markets of tomorrow in the best possible conditions, and to remain a major leader for its customers.



# 24x7

The closed door machining production lines developed at LISI AEROSPACE at Parthenay and Saint-Ouen-l'Aumône in France and at Torrance in the United States, allow for 24x7 continuous production sequences without human intervention. These machines, capable of real-time measurements and dimensional corrections, multiply these sites' production autonomy by 8.

# DIGITAL TRANSFORMATION

The digital transformation of the LISI Group, already initiated in 2017 with the development of new fully automated closed door machining production lines, is underway. This strategic development is the junction between the human being, who designs and controls, and the progress of production techniques that allows the mobilization of an ever greater computing power. It is already projecting the Group's sites into the era of the factory of the future.

To achieve this change, in 2018 the Group appointed a Digital Transformation Officer. The year was devoted to defining a roadmap and developing a strategic vision that encompasses all of the Group's functions, from production to support services. This makes it possible to involve all of the Group's employees in this essential stage of value-creating change.



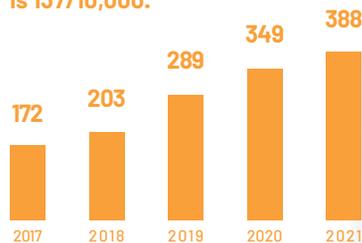


# ROBOTS TO RELIEVE MEN

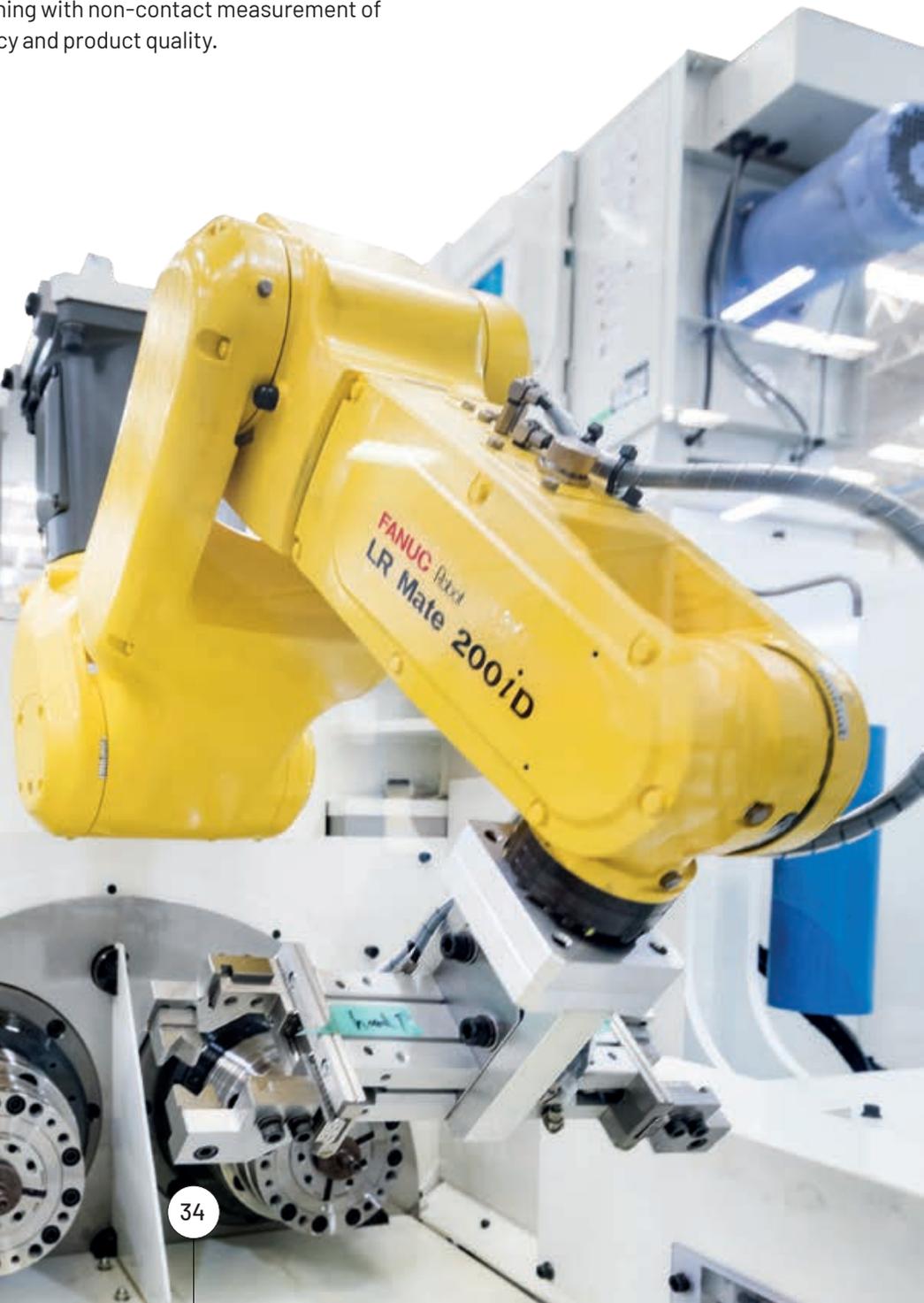
Fifty new robots were set up in 2018 in the Group, which now has 264 multi-articulated robots in service (including Termax and Hi-Vol), plus 200 Cartesian robots. The operations handled by these machines (handling, gripping, etc.), make it possible to improve working conditions and reduce the difficulty of certain tasks with low added value. Such automation also helps reduce variability and improve the productivity of the Group's sites. The combination of these functions with new technologies, such as robotic parts polishing with non-contact measurement of closed-loop geometry, improves efficiency and product quality.

**203/10,000**

This is the ratio between the number of robots used at LISI and the number of employees. The French average in the industry is 137/10,000.



Number of robots per 10,000 employees.





## 360° HR

The establishment of a global HR Core – a “reservoir” of data common to all of the company’s employees – will provide a 360° vision of the Group’s human resources and facilitate the employees’ processes.

## END-TO-END PATH

The digital transformation of the LISI Group also involves the transformation of the administrative functions into three areas: the automation of execution and control tasks; the implementation of a paper-free approach through electronic workflows and e-invoicing solutions and the overall simplification of processes.

This major change involves the convergence of application systems, data and increased standardization of standards and management rules. All the administrative processes are thus redesigned as an end-to-end path, in an internally (between functions), but also externally, open-ended way, from order taking to the reception of goods with our customers and suppliers.

This reorganization has fostered the emergence of Shared Service Centers (SSCs) for support functions. Two finance and accounting SSCs are already operational for Europe Fasteners, based in Paris, and for North America Fasteners, located in Montreal. A study to extend the concept of support SSCs is currently underway.

A digital collaborative platform (Digital Workplace) is also in the pipeline to provide quick and easy access to mobile versions of most documents and resources shared within the Group.

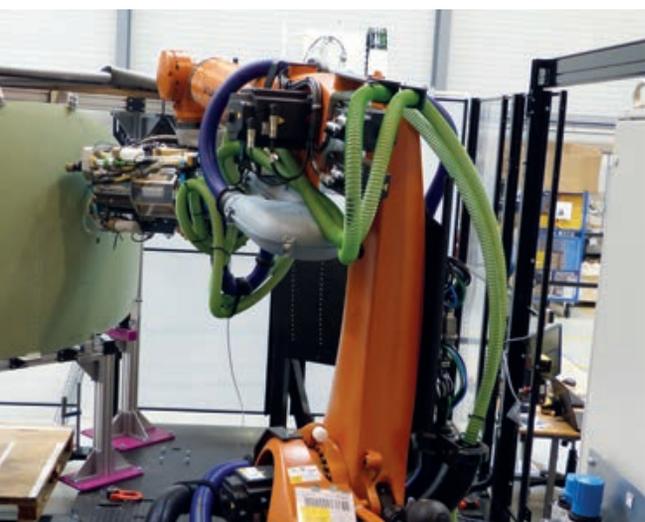
**LISI AEROSPACE**

**TiAl  
FORGING THE MOST  
COMPLEX MATERIALS**

TiAl (Titanium-Aluminum alloy) is an intermetallic, lightweight material that can withstand high temperatures. It gradually replaces the Nickel-based superalloys used in the hot parts of engines, such as turbine blades, while weighing only half as much. Very difficult to deform because of its low ductility, its industrial processing is very complex. To circumvent this obstacle, LISI AEROSPACE has developed an alternative so-called "hot dies" forging technology at its Forges de Bologne plant. It maintains the productivity of conventional forging while achieving a metallurgical quality close to that of isothermal forgings (forging installation operating at 1,250/1,300°C), particularly in terms of microstructure homogeneity and external health of the parts. By reducing production costs to levels acceptable by the market, this innovation will promote the rise of this exceptional material on new generation engines.



<b>-20 Kg</b> on an engine thanks to TiAl turbine blades
<b>x4</b> Productivity gain over isothermal forge
<b>x2</b> Static strength of forged TiAl vs. molded TiAl



**LISI AEROSPACE**

**ROBOLD PROJECT  
VALIDATING THE TECHNOLOGIES  
OF THE FUTURE**

To improve competitiveness and ensure high production rates, aircraft manufacturers are now focusing their efforts on the automation and efficiency of assembly processes. Since 2011, LISI AEROSPACE has initiated the development of automated structural assembly technologies through the LISI@OneSide program. On this basis, in collaboration with Dassault Aviation, which contributes its expertise as aircraft manufacturer, and thanks to the support of the General Directorate of Civil Aviation (DGAC), we have built the ROBOLD collaborative project. This industrial demonstration project aims to demonstrate the relevance of the LISI@OneSide automated assembly system with the new OPTIBLIND™ blind fasteners and CLY62 temporary fasteners. Implemented in an environment that is representative of actual production conditions, ROBOLD proves the robustness and economic benefits of this assembly technology and validates this major technological leap in aircraft production.



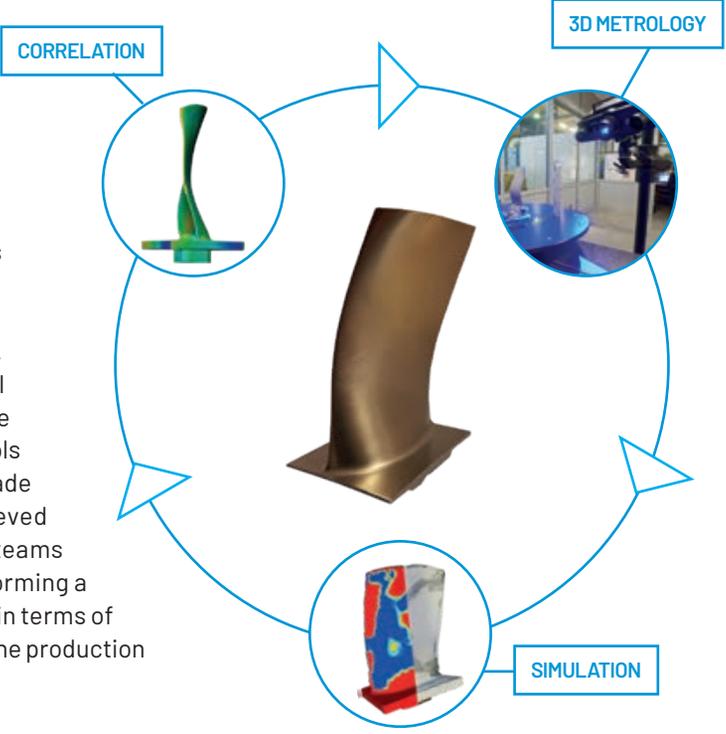
<b>1</b> proven automated assembly solution from one side of the structure
<b>100%</b> robotic sequences (drilling, sealant application, assembly and control)



LISI AEROSPACE

## DIGITAL SIMULATION GAINING PERFORMANCE

In order to accelerate the development of new products and optimize production processes, which constitute the core of operational performance, LISI AEROSPACE invests continuously in digital simulation tools and skills. The acquisition of a 3D scanner, combined with numerical simulations of the blade forming process produced at the Marmande site, enabled the development of manufacturing tools by digital iterations alternatively to physical tests. This was made possible thanks to the level of prediction that could be achieved with this numerical chain. This method, developed by plant teams and R&D engineers, was used for the first time this year for forming a LEAP compressor blade. This step opens up major prospects in terms of time and cost optimization, both for the production and development cycles.



- ELIMINATING**  
rework and scrap
- REDUCING**  
development time and costs



LISI AEROSPACE

## STARLITE™ TITANIUM NUTS MULTIPLE APPLICATIONS

Launched in 2010, LISI AEROSPACE's lightweight, composite-compatible STARLITE™ nuts product line has been further expanded to better meet the requirements of the North American market. These titanium nuts, whose strength is comparable to steel nuts, are perfectly compatible with composite structures and titanium fasteners. The existing range for STL™, HI-LITE™ and HI-LOK™ systems is now extended to seal nuts, captive and self-aligning nuts and a new HI-KOTE™ 2 solid lubricant film option has been validated. The STARLITE™ range already equips many new generation aircraft and provides a competitive advantage for programs in development.

- 200 Kg** weight saving on a long-haul plane
- REDUCED** inventories: replaces many existing references
- COMPATIBLE** with composite structures

**LISI AEROSPACE**

**CHALLENGE: FACING THE OCEAN!**

The LISI AEROSPACE division joined forces this year with the SODEBO Ultim team for the construction of the new SODEBO Ultim<sup>3</sup> racing trimaran. This technical partnership, already in place for more than ten years, was an opportunity to demonstrate once again LISI AEROSPACE's technical expertise, innovation and reactivity capabilities on high-tech metal parts. Our teams co-designed and produced the mast foot (Parthenay); foil well parts made of titanium by additive manufacturing (Aiguemorte-les-graves); aeronautical grade fasteners (Saint-Ouen-l'Aumône) for the mast and latest generation OPTIBLIND™ blind fasteners (Villefranche-de-Rouergue) for hull assembly. Skipper Thomas Coville and his team are now preparing to tame this new sea giant for new records. 14 transatlantic races and no less than 3 round-the-world tours are planned for the next 4 years, with as a major objective the unprecedented Brest Ocean race (departure scheduled end of December 2023) in which all the Ultimes will compete in a solo world tour!



- 4** The size of 4 tennis courts
- 65** tons of effort on the mast foot ball
- 50** knots in flight above the water



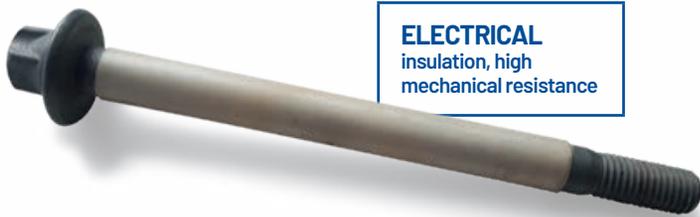
**LISI AUTOMOTIVE**

**BORON STEEL INCREASING RESISTANCE**

LISI AUTOMOTIVE has developed a one-piece low-alloy boron steel wheel bolt. It offers consistent levels of mechanical resistance up to 1040 MPa after hardening and tempering heat treatment. Studies conducted by the LISI AUTOMOTIVE central laboratory in Grandvillars have also demonstrated that the application of a last-generation surface treatment guarantees excellent stability of the friction coefficient in a humid environment (up to 40°C and 80% residual humidity) and at temperatures of up to 140°C. This new generation of one-piece wheel bolts, available in gray or black versions, guarantees optimum clamping conditions and safety of use.



- 1,040 MPa**  
Homogeneous resistance levels up to 1,040 MPa
- 140°C**  
Excellent friction coefficient stability up to 140°C and in humid environments



**ELECTRICAL**  
insulation, high  
mechanical resistance

**LISI AUTOMOTIVE**

## INSULATING SCREW EQUIPPING HYBRID VEHICLES

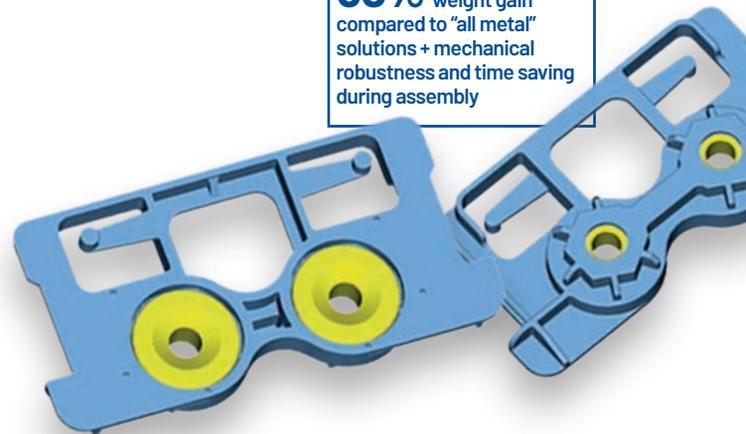
The rapid development of hybrid and fully electric vehicles generates new constraints in terms of fasteners. The assembly of organs operating at different electrical potentials, made necessary to optimize the space in the vehicle, is one of these new issues. To meet those requirements, LISI AUTOMOTIVE has developed a long M7(100mm), class 10.9 screw, insulated on the non-threaded part by thermoplastic overmolding. Various laboratory tests have qualified the electrical resistance of the insulating protection (breakdown potential) as well as its resistance to corrosion in various environments.

**LISI AUTOMOTIVE**

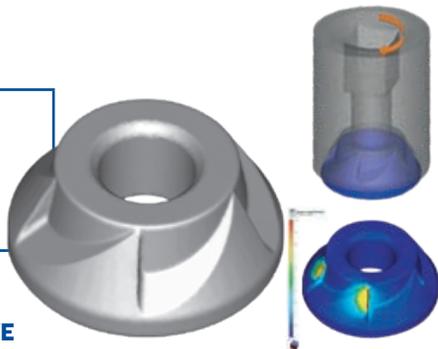
## METALLOPLASTIC SOLUTIONS LIGHTER VEHICLES

Capitalizing on its dual expertise in low-alloy steel cold-heading and plastic injection technologies, LISI AUTOMOTIVE offers metalloplastic solutions that lighten automotive vehicles and contribute to the reduction of greenhouse gas emissions while reducing production costs. The design of the injected part of the new door latches allows for seamless installation. This system, which maintains the mechanical robustness of the function, reduces the assembly time at the manufacturers and offers a weight reduction of 50% compared to an all-metal solution.

**50%** weight gain  
compared to "all metal"  
solutions + mechanical  
robustness and time saving  
during assembly



**SECURING**  
sensitive elements  
of the vehicle  
cabin and ease of  
implementation



**LISI AUTOMOTIVE**

## TAMPER-PROOF NUT INCREASING SECURITY

In order to meet the demand of manufacturers, LISI AUTOMOTIVE has developed a nut whose geometry and mechanical properties make it easy to screw but impossible to unscrew quickly without the right tool. The design and characteristics of this tamper-resistant nut, which enhances the safety of the vehicle interior, have been validated by digital simulation. An initial version of the nut, proposed in low alloy steel with M6 tapping, is now available and can be offered in various diameters. A tamper-proof screw version, based on the same principle, is under development.

**LISI MEDICAL**

## PROTOTYPING GAINING AGILITY

This year LISI MEDICAL developed a new rapid prototyping cell at its Neyron site. Consisting of a milling center, a turning-milling center and a lathe, the unit optimizes the industrialization of mass production parts, reserves a non-production area for developments and debugging, and accelerates qualification processes. It offers the ability to produce low volumes without disturbing the "high-runners" and allows the site to gain agility.

**15%**  
This is the production  
time devoted to  
development and  
industrialization projects  
absorbed by this new unit

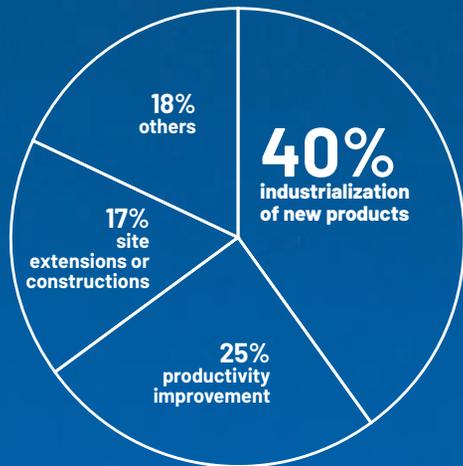
## CAPEX FOR THE FUTURE

While they were restrained compared to the exceptional level of expenditure recorded last year, the investments made in 2018 reflect the Group's desire to adapt its efforts to the expected changes in its business activities. The choices made will further strengthen the Group's operational efficiency and support future developments.

Capital expenditures were 40% focused on the capacity needed for the industrialization of new products and 25% of the overall budget was devoted to improving productivity. This strategy should enable the Group to improve its performance and position itself today in the markets of tomorrow.

# PREPARING

A photograph of a modern industrial building at night. The building has a white facade with blue accents and large windows. Several trees in the foreground are illuminated with warm yellow lights, and the ground is also lit with small, low-profile lights. The sky is a deep blue.



€ 131m  
of industrial CAPEX in 2018

8%  
of sales revenue

# THE FUTURE

## CAPEX FOR THE FUTURE

### LISI AEROSPACE

## A NEW SITE IN POLAND

LISI AEROSPACE inaugurated in July 2018 its new site in Rzeszów, Poland. This 5,000 m<sup>2</sup> site takes over from the historic Sędziszów Małopolski factory, located in premises adjacent to those of Safran, LISI AEROSPACE's partner. The investment, which amounts to €7 million, is in addition to the €8 million already invested in the last 3 years in industrial equipment. The 300 employees of the site, including 75% women, handle the finishing operations on the compressor blades and guide vanes of the low pressure compressor from drafts delivered by the Marmande site in France. The site has 44 4- and 5-axis machining centers, an automated surface treatment line and a laboratory. The plant is expected to gradually converge to the 4.0 standards of LISI AEROSPACE: automation and robotization (including polishing), Manufacturing Execution System, 24/7, etc.

<b>Target</b>	capacity, upgrade
<b>Function /products</b>	mobile blade finishing, low pressure compressor rectifiers
<b>Cost</b>	€7 million



### LISI AEROSPACE

## NEW PREMISES IN MEXICO

The LISI AEROSPACE site in Chihuahua, Mexico, which has been operating since 2009, was transferred in 2018 to new premises to support the deployment of its activity. There the LISI AEROSPACE teams manufacture torque tubes and torque bars delivered by the Bologne and Bar-sur-Aube sites in France. The Chihuahua plant mainly operates for Safran Landing Systems' North American subsidiaries. It also delivers other types of parts for Safran Aircraft Engines (SAE) and Kaman, whose sites are based in Mexico. The site will also eventually provide leading edge finishing for the LEAP engine, delivered from Marmande in France and targeted at Safran Aircraft Engines in Mexico. The move has doubled the size of the buildings to 5,300 m<sup>2</sup>. Sales should increase from € 10.5 million in 2018 to more than €17 million in 2020 and the head count from 60 to 100 people.

<b>Target</b>	expansion, capacity investment
<b>Function /products</b>	machining torque tubes, bars, leading edge finishing, etc.
<b>Cost</b>	€5.8 million



**LISI AEROSPACE**

**NEW EQUIPMENT  
AT MARMANDE, FRANCE**

The Autonomous Production Unit (APU) in charge of the air intake lips has been the subject of substantial investments to meet the demand of the division’s customers. The capacity of the P building has been increased with the installation of a new forming press, a calibration press, a preheating furnace, preparation robots, and handling equipment. This equipment will be used to produce the lips of the Pratt & Whitney PW1000G engine that equips part of the Airbus A320neo fleet (the lips of the Safran LEAP 1A engine, which equips the other part of neos, are manufactured by the same workshop). The 3,300 m<sup>2</sup> building erected in 2012, is expected to produce 1,000 lips a year by 2023.

<b>Target</b>	capacity equipment
<b>Function /products</b>	production of engine air intake lips
<b>Cost</b>	€3 million

**LISI AEROSPACE**

**PRODUCTIVITY GAINS  
AT VILLEFRANCHE-  
DE-ROUERGUE, FRANCE**

In 2018, European fastener activities benefited from investments focused on seeking productivity gains and improving quality through automation, robotization and the move towards 4.0 production facilities: closed door machining, contactless controls, closed loop machining, etc. These are in addition to the investments related to the startup of a new Boeing titanium nut production line (787 and 777X programs) in Villefranche-de-Rouergue.

<b>Target</b>	productivity gains, new products
<b>Function /products</b>	fasteners
<b>Cost</b>	€3.2 million (first tranche)



## CAPEX FOR THE FUTURE

### LISI AUTOMOTIVE

## EXTENSION AT ČEJČ

The LISI AUTOMOTIVE site at Čejč, in the Czech Republic, which has been growing very strongly (+18% in 2018) has reached its maximum production capacity. The plant has been extended by 3,000 m<sup>2</sup> and supplied with new equipment: an additional punching machine, multispindle lathes for machining, means of control. Additional investments are already planned for 2019, to which will be added the creation of 40 additional jobs. LISI will become one of the largest industrial employers in the region.

<b>Target</b>	capacity investment, extension (3,000 m <sup>2</sup> ), equipment
<b>Function /products</b>	guiding rods
<b>Cost</b>	€6 million



### LISI AUTOMOTIVE

## NEW PLANT IN GUADALUPE

Initially located in Monterrey, on premises rented from one of the division's customers, LISI AUTOMOTIVE now has a site of its own in Guadalupe. This new 5,600m<sup>2</sup> facility will house the production activities of clipped fasteners and mechanical safety components. A first production line of Electric Parking Brake components (EPB), established in 2018, will produce 2.5 million units/year for the US market, where electric brakes are growing strongly. A second line, with a capacity of 3 million units, will also be installed on the site. Nearly €900,000 were also invested for the transfer of the clipped fasteners business to the new site.

<b>Target</b>	capacity investment, new factory
<b>Function /products</b>	clipped fasteners, mechanical safety components (parking brake)
<b>Cost</b>	€5 million in 2018 + €4.7 million scheduled in 2019



**LISI AUTOMOTIVE**

**CAPACITY INCREASE AT MELISEY AND HEIDELBERG**

An investment program has accompanied the significant growth in demand for seat gears (43% growth), and parking brake components (EPB) manufactured in Melisey in France. Part of the investments enabled the robotization of rolling operations, the improvement of grinding means and the setting up of new assembly and control lines. For the Clipped Solutions Business Group, this effort was also supplemented by an investment at the Heidelberg site in Germany for an extension of buildings and the installation of a new heat treatment furnace.

<b>Target</b>	capacity equipment: multi-spindle lathes, control machines, robots, heat treatment furnace, etc.
<b>Function /products</b>	seat gears, electric parking brake (EPB), clipped solutions, etc.
<b>Cost</b>	€2.2 million (Melisey) + €2.8 million (Heidelberg)

**LISI MEDICAL**

**FINISHING LINES AT HÉROUVILLE-SAINT-CLAIR**

The LISI MEDICAL division has set up two robotic finishing lines at its Hérouville-Saint-Clair (Calvados) site, intended for the production of implants. The first line includes two robots for the sanding (calibration) and the polishing. The second line is coupled with a contactless FARO vision-based measurement system capable of closed-loop polishing and dimensional measurement: out-of-tolerance areas are automatically added to ensure a 100% quality level.

<b>Target</b>	quality and productivity improvement
<b>Function /products</b>	finishing, polishing and grinding of implants
<b>Investissement</b>	€1.3 million



**LISI MEDICAL**

**MACHINING LINE AT BIG LAKE**

The US site at Big Lake, Minnesota, has implemented a new precision electrochemical machining system to machine staple nozzles for minimally invasive surgery. This procedure, which allows for the simultaneous production of 8 units, improves the production capacity and allows absorbing large volumes of orders.

<b>Target</b>	capacity equipment, productivity gain
<b>Function /products</b>	staple nozzle machining (minimally invasive surgery)
<b>Investissement</b>	\$1.8 million



# LISI AEROSPACE

is a leading player in the aerospace industry. This division of the LISI Group designs and produces very high performance assembly systems for aircraft worldwide. Its teams assist major international aircraft manufacturers in the development of large innovation programs.

# OUR PRODUCTS ENHANCE AIRCRAFT SAFETY AND EFFICIENCY



**13,000**  
commercial aircraft  
on order

**14,000**  
LEAP CFM engines  
on order

**+6,6%**

Air traffic growth in 2018



## **RISE IN AIRCRAFT PRODUCTION RATES: ADJUSTING AND RESPONDING TO INDUSTRIAL CHALLENGES**

Forecasts for global air traffic growth in 2018 by the International Monetary Fund show an increase of between 4.5% and 6% per year until 2035. This acceleration poses a series of challenges for players in the aerospace sector. First of all, the increase in production rates it imposes on aircraft manufacturers, who must meet the commitments made for each of the 13,000 commercial aircraft currently on order. In 2018, Airbus delivered 800 aircraft versus 718 in 2017, and Boeing 806 (763 in 2017).

### **MEETING THE TECHNICAL CHALLENGES**

The technical challenges related to the new engines have been resolved and the ramp-ups are proceeding according to expectations. Safran, which delivered 1,115 LEAP engines in 2018 (compared to 450 in 2017), has 14,000 units on order and displays a flawless track record. As for Pratt & Whitney, it has completed the development of the PW1000G (GTF) and is gradually connecting its delivery program.

The LISI AEROSPACE teams, who assist these various players during these ramp-up phases, have remained focused on their mission: to deliver the expected products with the expected quality, in time and within budget.

### **PREPARING TOMORROW'S TECHNOLOGIES**

Air transport remains a very competitive industry that must anticipate market expectations. These require today even more efficient, more comfortable aircraft, with a reduced and measurable environmental footprint, at a cost of acquisition and operation that remains under control. LISI AEROSPACE is very active in technology development programs that improve the performance of aircraft and engines during production. By standardizing, lightening or simplifying assembly methods, they contribute to increased reliability and lower costs. By developing breakthrough technologies - new materials, new architectures, innovative assembly and production techniques - these technologies bring tomorrow's cheaper, more economical and more fuel-efficient, aircraft to market.



# 3

**QUESTIONS TO  
JEAN-LOUIS COLDERS**  
CHIEF EXECUTIVE OFFICER  
LISI AEROSPACE

“The LISI AEROSPACE division remains focused on deploying methods that improve our operational performance.”



**How has the division adapted to these new demands?**

Numerous site extensions, renovations and constructions have strengthened and modernized our industrial capacities. Capacity investments have reached more than 7% of the division’s annual sales revenue. The robotization plan is making progress: more than 200 units have been installed to increase productivity and guarantee quality. Finally, we remain focused on deploying methods that enable us to improve our operational performance.

**What role do you play in the development of new generations of aircraft?**

In each of our business segments, we anticipate market developments and expectations over the medium term. Based on this insight, we formalize a technological roadmap and develop demonstrators, alone, or with partners or customers, to prepare the technological bricks of tomorrow. We have applied this method to several major innovations. The LISI@OneSide project, for example, is now offering the market a unique blind structural fastener system designed to be implemented by a robot in composite structures, integrating its tools and installation sequences.

Another example is our forging concept for intermetallic alloys (TiAl), a light, temperature-resistant material used in engines that is difficult to implement, now makes its transformation more economical and increases its use.

The experience we have acquired in additive manufacturing technologies allows us today to produce highly innovative design parts that are compatible with the constraints of aeronautics: we are one of the few companies whose parts produced with this technology fly on currently operating aircraft.

**How are you preparing for the future?**

We are constantly seeking to attract human resources motivated by innovation and performance. To achieve that, we develop working and management methods to express these talents. Digital technology makes this new vision of management within the company possible. As such, we are proud that one of our sites has been labeled “Showcase Industry of the Future”. It is a life-size expression of how we envision the future.

ENGINE PROGRAMS

# SUCCESSFUL RAMP-UP FOR THE LEAP

The LEAP engine, which powers the 737 MAX, the A320neo and the C919, is an unprecedented technical, commercial and industrial success for the CFMI consortium (Safran and General Electric). Annual production is expected to exceed 2,000 units per year. Extremely solicited by Safran on this program, LISI AEROSPACE not only delivered its contractual part on schedule, but also supported the additional needs related to the success of the program. The additional market shares that were awarded this year justify the industrial investments made at the sites of Marmande, Bologne, Parthenay in France and Chihuahua in Mexico.

CFMI has also rewarded the LISI AEROSPACE teams for their performance and their commitment to the success of LEAP. An award was presented on May 16, 2018 to Jean-Louis Colders, CEO, LISI AEROSPACE and François-Xavier Du Cleuziou, Sales and Marketing Director, on the occasion of the CFMI Suppliers Conference. Only 6 companies were singled out of the 150 gathered in Cincinnati, Ohio, for this event.



ADDITIVE MANUFACTURING

# LISI AEROSPACE SELECTED BY AIRBUS

LISI AEROSPACE continues its experience curve in the deployment of technologies related to 3D printing and additive manufacturing. LISI AEROSPACE Additive Manufacturing (LAAM), which was set up in 2016, explores the potential of this new way of producing by integrating the industrial requirements of the aerospace, defense and space sectors. LAAM doubled its business volume in 2018 and reinforces its status as a specialist in the sector. The site has been selected by Airbus for the production of a first serial part for the A350.



SUPPLY CHAIN

# SUCCESSFUL ADJUSTMENT FOR THE FASTENERS BUSINESS

The end of safety stockpiling related to the protection of the A320neo and A350 ramp-ups, combined with a reduction in rates for large aircraft, have led to strong jerks on the supply chain of the fasteners business in Europe. As a result, the year 2018 saw a sharp downturn in demand with a negative adjustment of around -12% on fasteners. Production and costs have been adjusted accordingly, but with a definite lag, to adapt to this new environment while preserving a rebound capacity. Shipments have reached a more normal and stable pace since the beginning of 2019.



© Airbus

# €934 m

sales revenue in 2018

# 7,214

employees  
worldwide

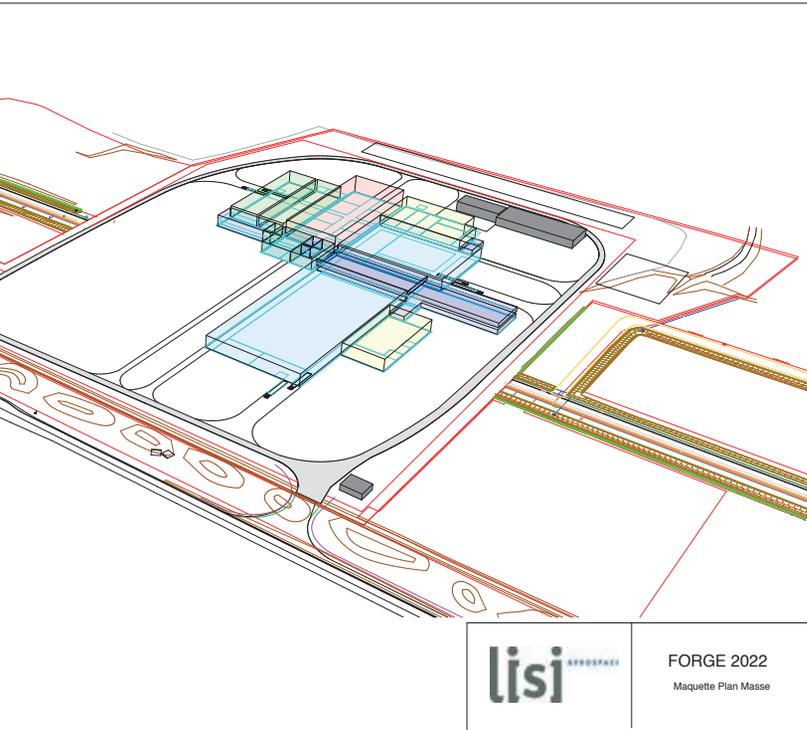


© Dan Nevill from Seattle, WA, United States  
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FASTENERS

# NEW PRODUCTS FOR BOEING

For several years, LISI AEROSPACE has been actively developing its positions in North America and particularly with Boeing, with whom several existing product qualifications or new product evaluations are now reaching maturity. This concerns advanced fastening systems for the assembly of composite structures or interior equipment as well as robotic assembly technologies using structural blind fasteners. The initial application on sealed nuts resulting from this collaboration comes into production in 2019 and our other solutions are now well positioned for new programs such as the B777X and the B797. We are also committed to the development of the GE9X engine that will power the B777X with our compressor blade technologies and metal fan blade attack edges.



EXTENSION OF

## FORGE 2022: A MORE EFFICIENT INDUSTRIAL COMPLEX

Launched in 2017, the relocation and modernization plan for the Forges de Bologne, in France, is designed to create more energy- and industry-efficient industrial complex within the Plein'Est business park in Chaumont. This industrial complex of up to 40,000 m<sup>2</sup>, built on a 100,000 m<sup>2</sup> platform, will host the first equipment as of 2022. The current site is spread over more than fifty buildings, the oldest dating back to the seventeenth century.

DIGITAL INDUSTRY

## A "SHOWCASE INDUSTRY OF THE FUTURE" LABEL

LISI AEROSPACE's Saint-Ouen-l'Aumône site in France has been labeled "Showcase Industry of the Future" by the Alliance Industrie du Futur, that was created in 2015 to encourage and support companies towards a connected, optimized and creative industry. This label is awarded to sites that have implemented an innovative project based on mainly French technical and methodological solutions. 45 companies have been labeled to date (see also page 27).



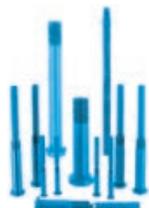
# PORTFOLIO - COMMERCIAL AIRCRAFT



## OTHER MAIN PRODUCTS



SAND-OFF  
FASTENERS



PULL-IN™/PULL-  
STEM™ FASTENERS



STL™  
FASTENERS



DOOR STOPS



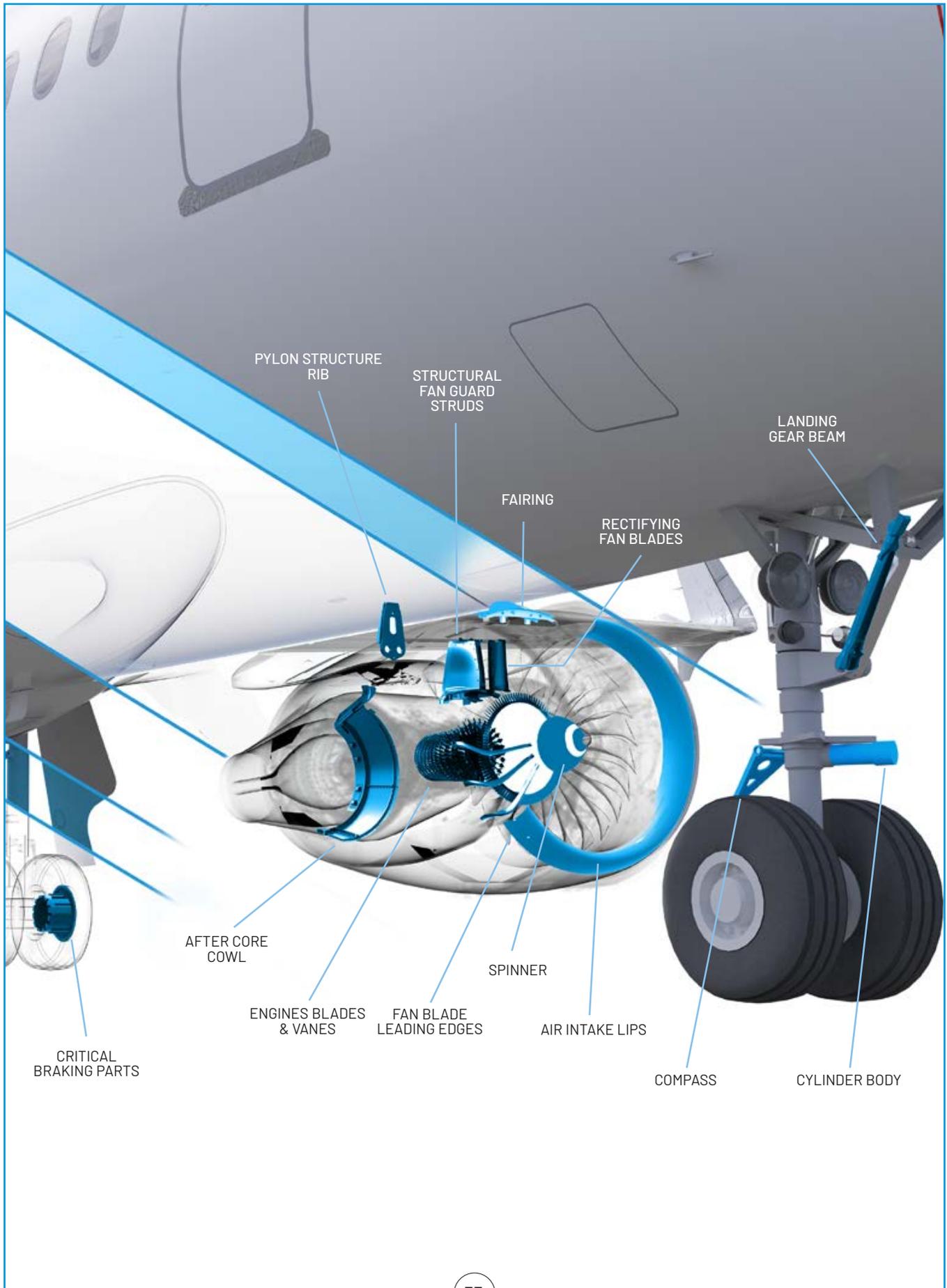
ENGINE GEARBOX  
SPROCKET



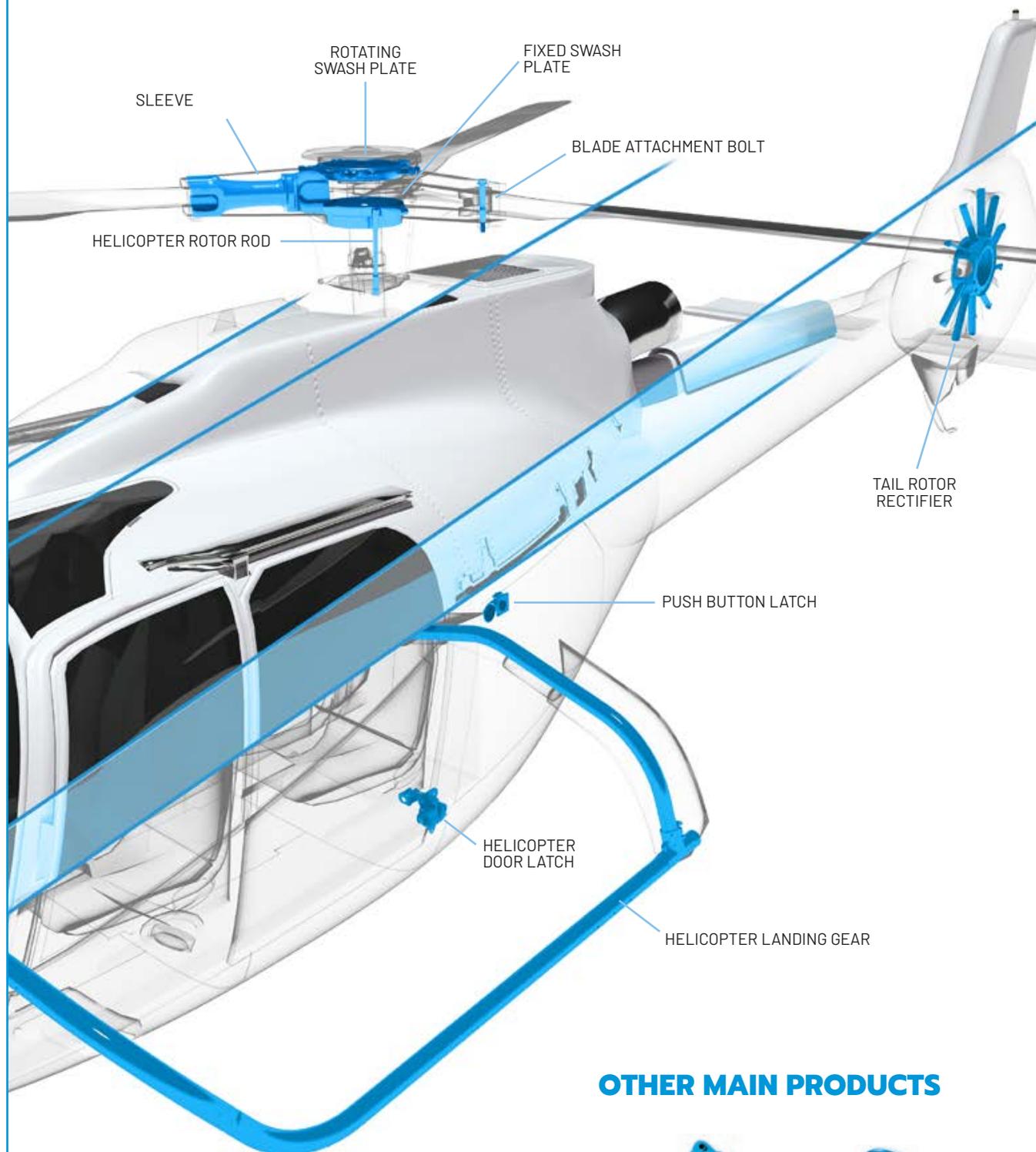
HI-LITE™ FASTENERS,  
LOCKBOLT



PRESSURE  
LATCHES



# PORTFOLIO - HELICOPTERS



## OTHER MAIN PRODUCTS

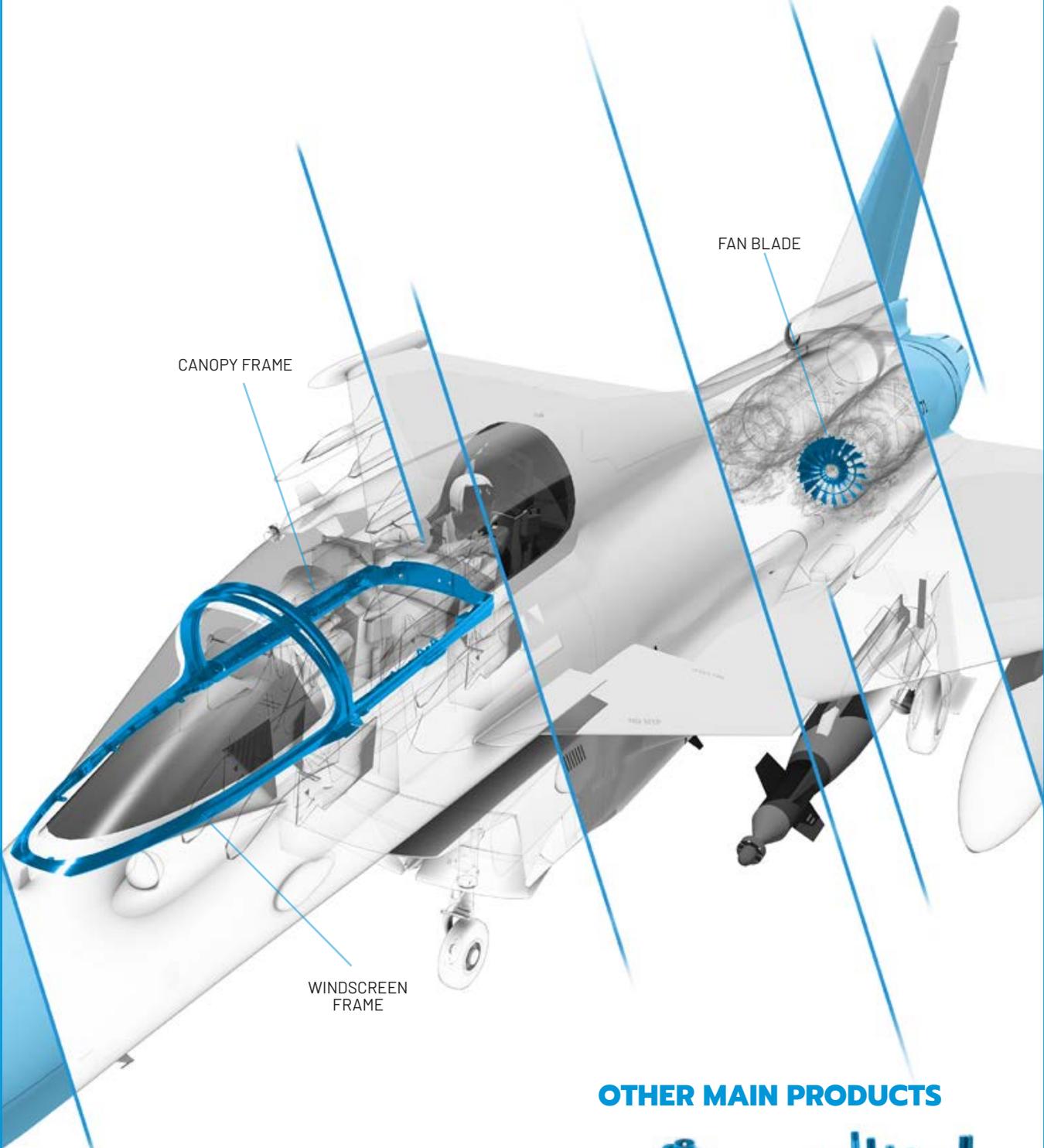


CARGO HOOK



SHAFT NUTS

# PORTFOLIO - FIGHTERS



CANOPY FRAME

FAN BLADE

WINDSCREEN  
FRAME

## OTHER MAIN PRODUCTS



OIL TANK



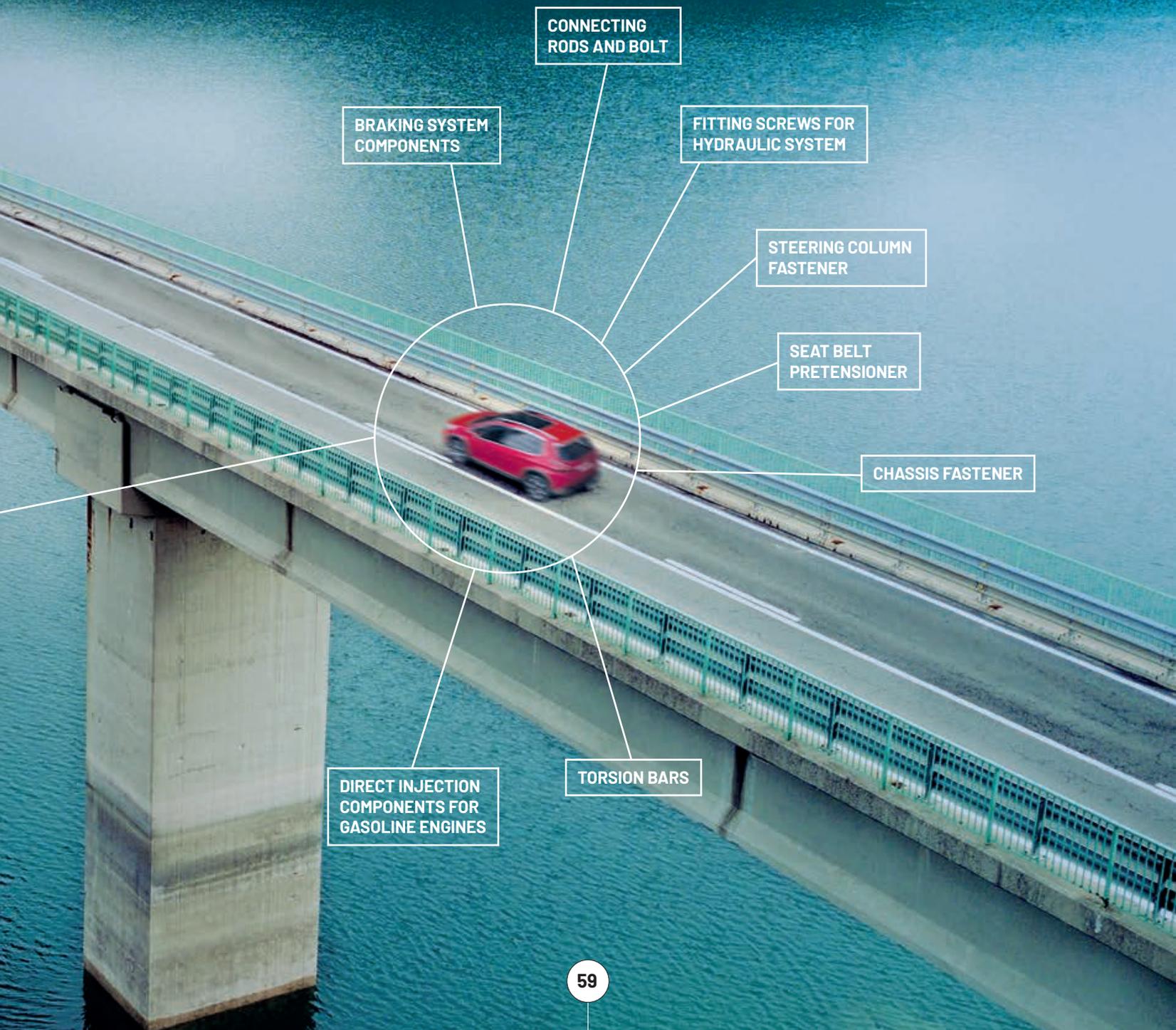
THREADED  
FASTENERS



# LISI AUTOMOTIVE

designs and manufactures fastening systems and mechanical safety components. Through ongoing innovation, LISI AUTOMOTIVE contributes to the reliability and safety of vehicles developed by the world's leading car makers.

# OUR PRODUCTS ENHANCE VEHICLE SAFETY AND COMFORT



BRAKING SYSTEM COMPONENTS

CONNECTING RODS AND BOLT

FITTING SCREWS FOR HYDRAULIC SYSTEM

STEERING COLUMN FASTENER

SEAT BELT PRE TENSIONER

CHASSIS FASTENER

DIRECT INJECTION COMPONENTS FOR GASOLINE ENGINES

TORSION BARS

**86**  
million vehicles sold  
worldwide in 2018 (-0.5%)  
**+60%**  
increase in electric vehicle  
sales worldwide in 2018

**5.6**

million "e-cars" circulate  
around the world  
(01/2019)



## **CONTRIBUTING TO THE TRANSFORMATIONS OF THE AUTOMOTIVE MARKET**

The automotive industry is currently facing three major challenges: the first challenge is technological. Linked to the environmental agenda, it is characterized by changes in the energy mix, which result in a decline in the use of diesel in Europe and the promotion of electric vehicles. This is a digital challenge, focused on the issues of connected, intelligent and autonomous vehicles. As well as a societal challenge, that generates the appearance of new mobility offers that upset generally-accepted habits. The entire automotive industry is concerned by these transformations.

### **TOWARDS A NEW ENERGY MIX**

In the short term, the change in the energy mix is the most significant factor for component suppliers. The development of electric vehicles leads to changes in the design of the car structure, meant to compensate for the weight of the battery and on-board electronics.

These transformations are particularly sensitive for the mechanical fasteners sector. The development of hybrid engines will indeed require new fasteners for battery

trays, cooling systems, as well as electrical and electronic connections. The necessary lightening of the structures and of the body in white will reduce the thickness and density of the materials used, as well as the surfaces (downsizing). The combination of materials (steel, aluminum, polymers and composites) will require the development of new multi-material assembly solutions that guarantee the mechanical - static and dynamic - strength of the assembly, meeting the corrosion and weight constraints.

### **INNOVATION AND OPERATIONAL EXCELLENCE**

These developments will require significant investments in development, but also to adapt or improve manufacturing processes. Limiting the cost of vehicles and looking for solutions to reduce assembly time (standardization, optimization, etc.) will remain a priority for our customers. Innovation and the search for operational excellence will remain LISI AUTOMOTIVE's major orientations when assisting manufacturers and equipment manufacturers in this adjustment phase.

# 3

**QUESTIONS TO  
FRANÇOIS LIOTARD**  
CHIEF EXECUTIVE OFFICER  
LISI AUTOMOTIVE

“LISI AUTOMOTIVE is pursuing its internationalization with the acquisition of Hi-Vol Products in the United States.”



#### **What are the division's results?**

Despite a complex environment, marked by very sharp increases in raw material costs, high market volatility and unprecedented levels of investment, the division saw its revenue grow by 15%, thanks in particular to the contribution of our North American acquisitions and to the dynamism of our Mechanical Components Business Group.

#### **What were the highlights of 2018?**

We accelerated our internationalization, particularly in North America with the successful integration of Termax. This acquisition, which was completed in 2018, considerably strengthened our offer, particularly for vehicle interiors. Termax has enabled us to secure €88 million in full-year contracts, or an unprecedented renewal rate of 15%. This rate reaches 20% of the overall mechanical components business, which should further increase in 2019.

We completed our second US acquisition in September when we bought Hi-Vol Products. This acquisition allows us to enter the rapidly growing sector of mechanical safety components in the US, including the stainless steel components required for direct injection gasoline engines (see pages 62).

In terms of innovation, our teams have focused their efforts on lightweight solutions, multi-material fasteners and mechanical safety components from the most advanced striking ranges. The first products resulting from its research have been very favorably received by our customers and some of them are already in the active industrialization phase.

#### **What will be the priorities for 2019?**

The transformation of the division will continue. We will remain attentive to market developments given current international uncertainties, while remaining focused on our priorities. In 2018, the division sold its German surface treatment subsidiary to one of its supplier-partners. We will reap the full benefits of our two US acquisitions, as extensions of our industrial footprint, with the ramping up of the Monterrey, Mexico site and our new Moroccan site (read page 63).

ACQUISITION

# HI-VOL

## LISI AUTOMOTIVE STRENGTHENS ITS PRESENCE ON THE AMERICAN MARKET

LISI AUTOMOTIVE announced in September 2018 the acquisition of 100% of the assets of Hi-Vol Products LLC, a leading US manufacturer of mechanical safety components for the automotive industry. The acquisition, which takes place one year after that of 51% of the capital of Termax - an Illinois company specializing in metal and plastic clipped fasteners - allows the division to further increase its presence in the United States.

### **Stainless steel distribution components**

Solidly established in a market where the mechanical components segment is growing, Hi-Vol brings recognized expertise in braking system fittings screws and components for direct injection gasoline engines. Founded in 1951, the company experienced significant sales growth in recent years by developing stainless steel distribution components used in the new generation of direct injection gasoline engines. LISI AUTOMOTIVE plans to import this technology into Europe to meet the needs of its domestic markets.

### **Strong foundations in the United States**

Hi-Vol has two production sites in Livonia (Michigan) with strong cold-heading, machining and automatic control skills. The company employs approximately 130 people and posts sales of nearly \$40 million. The two Livonia sites will definitely strengthen the global positions of the Mechanical Safety Components Business Group, which is already present in Europe, China and Mexico. This acquisition will also boost the development of LISI in the United States by benefiting, with Termax, from a strong technical base in this strategic area.





€581 m

sales revenue in 2018

3,924

employees worldwide



MEXICO

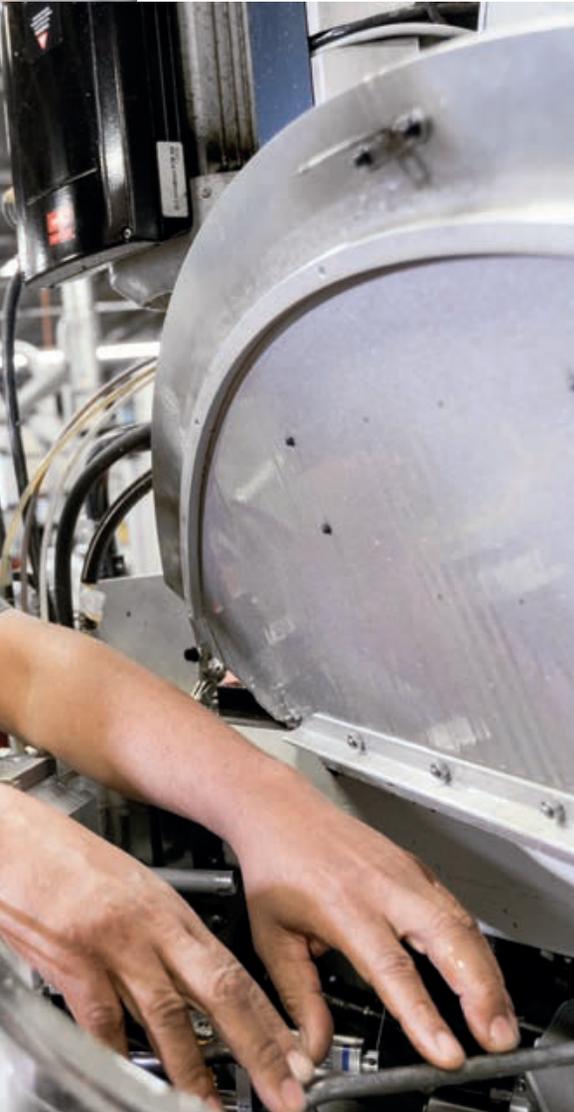
## NEW PLANT IN MONTERREY

The Monterrey site in Mexico, originally located on the premises of one of the division's customers, has been relocated to a new larger building (5,600 m<sup>2</sup>). The new facility will industrialize the manufacturing of electric parking brake components for the North American market. The new site has a new qualified production line that is ready for the ramp up scheduled early 2019. It also has a workshop for the production of clipped solutions (see also page 44).

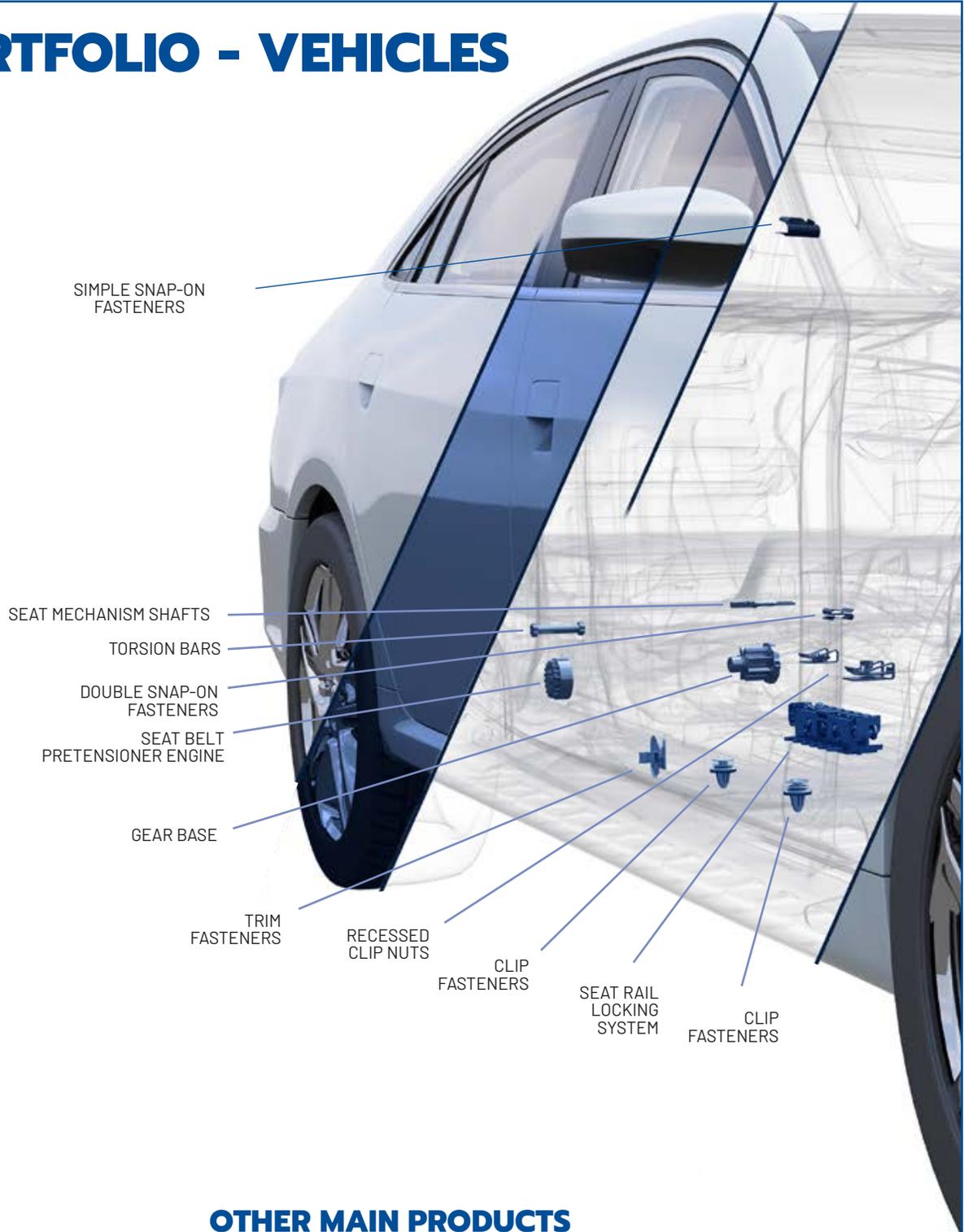
EXTENSION

## 3 PRESSES FOR THE NEW TANGIERS SITE

LISI AUTOMOTIVE has opened a new production workshop at the LISI AEROSPACE plant in Tangiers (Morocco). Three plastic injection presses (130 to 450T) will produce chutes for cable assemblies produced by local equipment manufacturers. This investment helps assist the division's customers in this geography.



# PORTFOLIO - VEHICLES



## OTHER MAIN PRODUCTS





BRAKE TUBE  
FITTING

ELECTRIC PARKING BRAKE  
SCREW AND NUT SYSTEM

STEERING LONG  
BALL JOINT

# LISI MEDICAL

is a world-class player specializing in the production of surgical implants and robotic or minimally invasive surgical instruments. As a leader in innovation and a player in a profoundly changing industry, LISI MEDICAL is actively involved in the advancement of medicine.

# OUR PRODUCTS ENHANCE SURGERY EFFICIENCY



**+4%**  
Growth of orthopedic  
prostheses markets

**+8%**  
Growth of minimally  
invasive surgical  
instruments

**+10.4%**  
Growth of robotic surgery



## **RESPONDING TO CONSTANT DEMAND FOR INNOVATION FROM HEALTH MARKETS**

The markets for orthopedics and minimally invasive surgery (gynecology, abdominal, cardiac, urological surgery, etc.) where the LISI MEDICAL division operates, are now boosted by the aging of populations. In 2018, they posted respective growth levels of 4% and 8% in value.

Demand, so far coming from highly developed countries - the US market alone "consumes" 40% of the world market for this type of products - is gradually shifting towards less mature markets. This year, the Chinese and Indian markets grew by 8% and 9%, respectively. These two geographies are valuable growth drivers for the health markets.

### **STRONG PRICE PRESSURE**

While these countries are now mainly subcontractors - most of the world's major players in the medical sector buy from specialists - the situation is favorable to the price reductions demanded by customers to meet the economic constraints of governmental health policies.

Such pressure is now fostering the trend towards concentration in the sector. This trend, which has prevailed for several years, and in which LISI MEDICAL took part at the end of 2016 when acquiring US company Remmele, has helped to resize the market around the most dynamic players. It has also resulted in a constant decrease in the number of intermediate size subcontractors.

### **DEVELOPMENT OF MEDICAL ROBOTICS**

Medical is also a sector where innovation is constant and a powerful growth driver. The medical robotics market, which is relatively recent, grew by 20% in 2018, and the number of new entrants is continuing to grow. So are the areas of application for which the type of mini-invasive surgery tools proposed by LISI MEDICAL are required. The global market for surgical robots is expected to grow by 10.4% annually by 2023, to reach \$ 6.5 billion in sales, up from \$ 3.9 billion in 2018. The subcontracting markets where LISI MEDICAL is positioned display growth levels ranging from 5 to 6%.



# 3

**QUESTIONS TO  
JEAN-MARC DURANO**  
CHIEF EXECUTIVE OFFICER  
LISI MEDICAL

“On average, our sites have launched 15% of new references compared to the previous year.”



#### **What were the highlights of 2018?**

Firstly, we successfully commissioned the capacity investments initiated in 2016-2017 at our Big Lake and Coon Rapids sites in the United States, where we launched new machining processes, as well as at our Hérouville-Saint-Clair in France unit (see also p. 45). The management team has also been renewed - a new Chief Executive Officer and an Industrial Manager were appointed in 2018 - combining international experience in the field of health industries and strong industrial expertise.

Finally, we have set up a production unit dedicated to the prototyping of orthopedic implants and instruments at our Neyron site in France. We are now therefore in a position to offer our customers preserial production runs by mobilizing production means identical or comparable to those used for large series. This reduces significantly the approval steps required to launch their new products.

#### **What are the prospects for 2019?**

The health market is characterized by the constant search for innovation. The system set up at Neyron enabled us to contribute to the launch of new products as early as 2018. On average, our sites have launched 15% of new references compared to the previous year. For some of them, this proportion has reached more than 50%. We are therefore ideally positioned to respond as soon as our customers launch their new product lines. For us, this means there will be future volumes to produce. This has been particularly true for example in the segment of surgical robotics, thanks to the relationship we have with the main players in this market. LISI MEDICAL is thus ideally positioned to assist its customers in the deployment of high value-added robotic systems in hospitals. This revolution enhances the precision of procedures and limits post-operative incidents.



€130.7 m

sales revenue in 2018

959

employees worldwide

#### BUSINESS LINE

### A FRENCH CHAMPION AT HÉROUVILLE-SAINT-CLAIR

Gabriel Saintrais, a young mechanic employed alternately on the Hérouville-Saint-Clair site to prepare his technical degree in design, production and product manufacture, won the gold medal at the Worldskills France competition, in the Turner category. The young champion, supported by the site's entire team, is preparing for the international competition in Kazan, Russia, in 2019.

#### OPERATIONAL EXCELLENCE

### COON RAPIDS TO LEAP STANDARDS

Integrated in the LISI MEDICAL division at the time of the acquisition of Remmele in 2016, the American site of Coon Rapids, which specializes in the production of screws and plates for trauma and spine, has been completely revamped. The plant, which employs 130 people, has been reorganized to the standards defined in the LISI Excellence Achievement Program (LEAP). The renovation of the buildings was supplemented by the upgrade of the visual management and the full reorganization of the workshops on the model of the Autonomous Production Units (APU) and the Autonomous Production Groups (APG). The principle of Problem Solving Management (PSM) meetings was set up in order to anchor the site closer to the field and boost its daily schedule. The deployment of lean management tools associated with LEAP (5S, SMED, VSM, etc.), started 2 years ago, will end in 2019.

#### 4.0 PLANT

### OPTIMIZATION OF PRODUCTION CONTROL

As part of the Group's efforts to adapt its organization to new digital standards, the LISI MEDICAL division has launched a project to optimize production control in its factories by deploying the Manufacturing Execution System (MES). This IT tool for managing industrial processes can be used to reinforce the control of the different stages of production, as well as to enhance responsiveness and performance. By making accurate and reliable information available to all, this system enables the real-time monitoring of production data and performance indicators of autonomous production units. Two factories were connected to the system in 2018. Three others will be in 2019.



# 2018 SHAREHOLDER'S GUIDE

**P.74 | GOVERNANCE**  
**P.75 | KEY FIGURES**  
**P.78 | STOCK MARKET DATA**  
**P.80 | FINANCIAL DATA**  
**P.84 | FUNCTIONAL ORGANIZATION CHART**

## GOVERNANCE

The LISI Group is organized in such a way as to create favorable conditions for its development in compliance with rules of good governance. It is articulated around two complementary decision-making bodies. The Board of Directors, composed of 14 members, including 4 independent directors, brings together leading managerial, industrial and financial skills. It deliberates on all matters relating to the smooth running of the company. The Executive Committee, composed of 19 members representing each of the Group's divisions, defines and implements the Group's operational strategy.

### BOARD OF DIRECTORS

---

**Gilles KOHLER**

Chairman

**Emmanuel VIELLARD**

Chief Executive Officer and Director

**Isabelle CARRERE**

Director

**Patrick DAHER**

Independent Director

**Emmanuelle GAUTIER**

Independent Director

**Capucine KOHLER**

Director

**Jean-Philippe KOHLER**

Permanent Representative of CIKO  
to the LISI Board of Directors  
Director

**Pascal LEBARD**

Director

**Lise NOBRE**

Vice-Chairwoman  
Independent Director

**Christian PEUGEOT**

Director

**Thierry PEUGEOT**

Permanent Representative of  
Compagnie Industrielle de Delle to  
the LISI Board of Directors

**Marie H el ene PEUGEOT-RONCORONI**

Director

**V eronique SAUBOT**

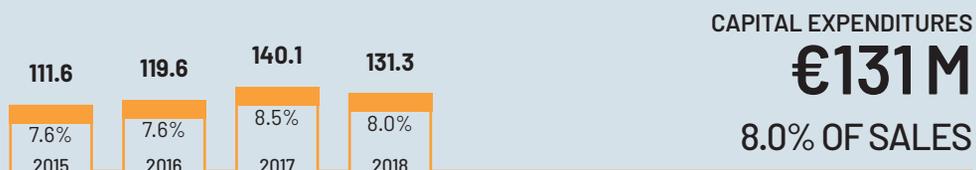
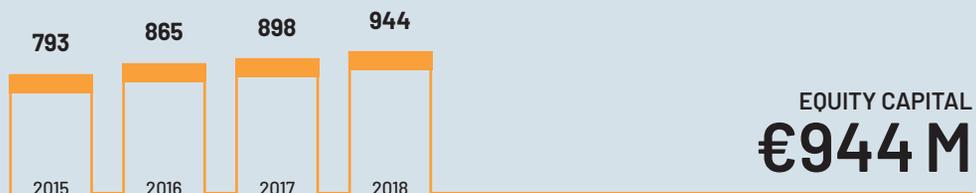
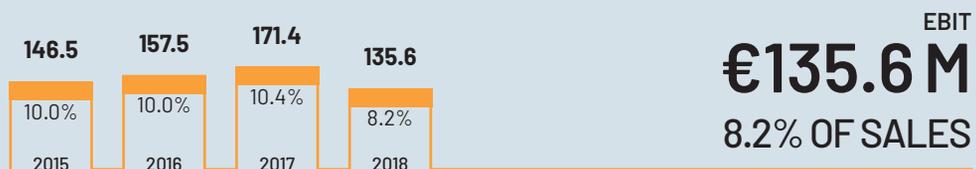
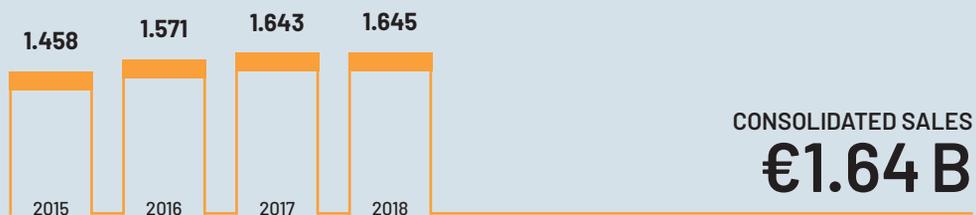
Independent Director

**Cyrille VIELLARD**

Permanent Representative of VMC  
to the LISI Board of Directors

## KEY FIGURES

### LISI GROUP



## KEY FIGURES



### LISI AEROSPACE

SALES REVENUE 2018  
**€934.0 M**

ORGANIC GROWTH  
**-4.6%**

GROUP SALES  
**57%**



### LISI AUTOMOTIVE

SALES REVENUE 2018  
**€581.1 M**

ORGANIC GROWTH  
**+0.9%**

GROUP SALES  
**35%**



### LISI MEDICAL

SALES REVENUE 2018  
**€130.7 M**

ORGANIC GROWTH  
**-2.9%**

GROUP SALES  
**8%**



## KEY FIGURES

CURRENT OPERATING INCOME

€96.8 M

EMPLOYEES

7,214

SITES  
AROUND THE  
WORLD  
21

### 11 SITES IN FRANCE

Ayguemorte-les-Graves  
Argenton-sur-Creuse  
Bar-sur-Aube  
Bologne  
Marmande  
Parthenay  
Saint-Brieuc  
Saint-Maur  
Saint-Ouen-l'Aumône  
Vignoux-sur-Barangeon  
Villefranche-de-Rouergue

### 10 SITES OUT OF FRANCE

Bangalore\* (India)  
Casablanca (Morocco)  
Chihuahua\* (Mexico)  
City of Industry (USA)  
Dorval (Canada)  
Izmir (Turkey)  
Rugby (United-Kingdom)  
Rzeszów (Poland)  
Tanger (Morocco)  
Torrance (USA)

\* Secondary sites

CURRENT OPERATING INCOME

€34.0 M

EMPLOYEES

3,931

SITES  
AROUND THE  
WORLD  
22

### 9 SITES IN FRANCE

Dasle  
Delle  
Dreux  
La Ferté-Fresnel  
Melisey  
Puisseux  
Saint-Florent-sur-Cher

*Support activities:*

Grandvillars  
Lure

### 13 SITES OUT OF FRANCE

Čejč (Czech Republic)  
Fuenlabrada (Spain)  
Heidelberg (Germany)  
Kierspe (Germany)  
Lake Zurich (USA)  
Livonia (USA)  
Mellrichstadt (Germany)  
Monterrey (Mexico)  
Queretaro (Mexico)  
Shanghai (China)  
Suzhou (China)  
Vöhrenbach (Germany)  
Zhuozhou (China)

CURRENT OPERATING INCOME

€5.6 M

EMPLOYEES

959

SITES  
AROUND THE  
WORLD  
5

### 2 SITES IN FRANCE

Hérouville-Saint-Clair  
Neyron

### 3 SITES OUT OF FRANCE

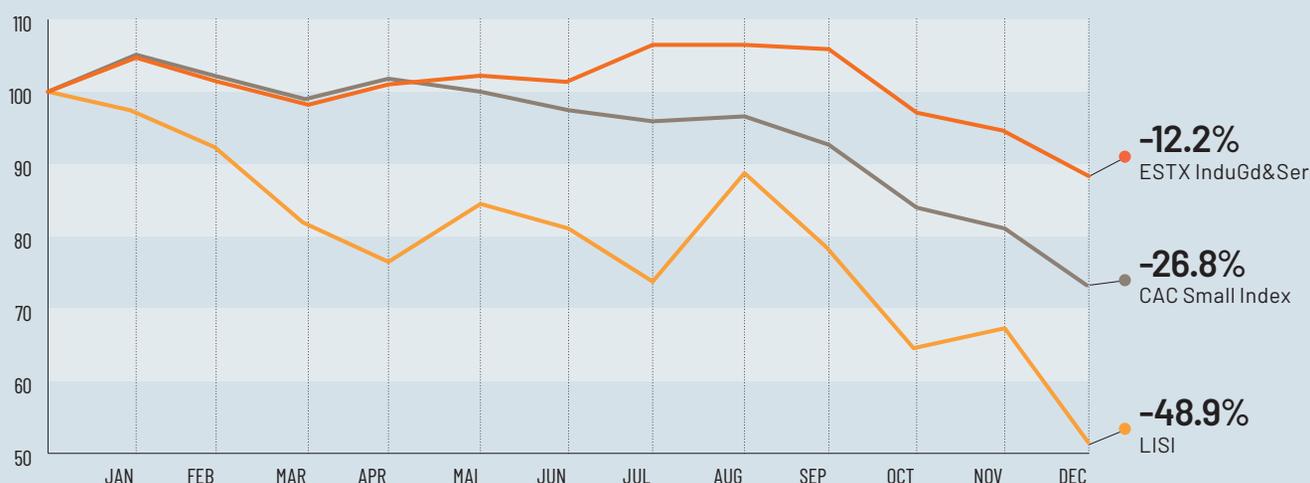
Big Lake (USA)  
Coon Rapids (USA)  
Escondido (USA)

## STOCK MARKET DATA

### LISI'S PROGRESS OVER 2018

**-48.9%**  
SHARP CORRECTION OF THE  
STOCK PRICE IN 2018

**€20.50**  
PER SHARE AS AT 12/31/2018



The LISI share underwent a sharp correction in 2018 after a fairly encouraging start and an all-time high of € 41.75 per share in January 2018. Such sharp decline is the result of a difficult stock market environment in which small stocks have come under pressure, particularly those exposed to the automotive market. All comparable companies had their share prices adjusted in equivalent proportions.

The year-end price is in the lowest annual levels after the downturn that has been observed since October 2018. The lowest price recorded was € 18.80 in December.

In terms of volume, 7,803,749 shares were traded over the year, once more rising (+5%) in the past 3 consecutive years for capital down -8%. In total, nearly 44% of the float was traded.

#### Coverage of the stock

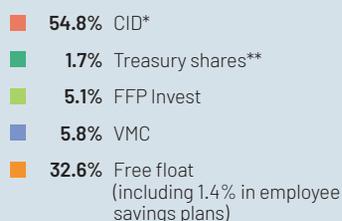
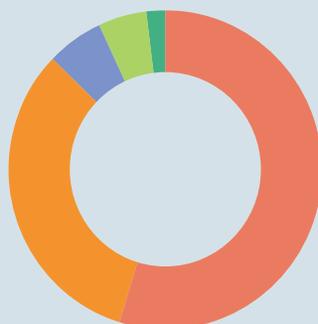
The stock is followed by 6 stockbrokers who regularly issue research notes accompanied by opinions and objectives corresponding to the assessment by the analyst in charge. This cover makes it possible to obtain full and diverse information for professional or private investors.

The LISI Group takes part in a large number of conferences, roadshows and investor meetings for the cities of Cape Town, London, Lyon, New York, Nice and Paris. In total, the management of LISI met with more than 260 investors during the 2018 financial year.

The communication policy is based on complete and transparent communication, a presentation of the results along with the semi-annual and annual publications and on the assessment of the forecasts by the panel of analysts based on their macro-economic assumptions.

## STOCK MARKET DATA

### Capital breakdown



\* Including direct and indirect holdings:  
VMC: 20.95%  
FFP Invest: 18.96%  
CIKO: 16.87%

\*\* Reserved for performance share plans

### Stock Identification Sheet

**ISIN Code:** FR 0000050353

**Reuters code:** GFII.PA

**Bloomberg code:** FII.FP

**Compartment:** A Eurolist

**Stock marketplace:** Euronext Paris

**Number of shares:** 54,114,317

**Market capitalization as at December 31, 2018:** €1,109 million

**Indices:** CAC® AERO&DEF., CAC®-All Shares, CAC® Industrials

### 2019 Events

The General Meeting of Shareholders will be held on April 26, 2018 on company premises: Immeuble Central Seine – 46-50 Quai de la Rapée, 75012 PARIS.

Dividend payments will be made on May 3, 2019.

Sales revenue for the second quarter of 2019, as well as half-yearly accounts will be available on line via the company website ([www.lisi-group.com](http://www.lisi-group.com)), on July 24, 2019.

Financial information for the third quarter of 2019 will be available online via the Group website on October 23, 2019 after close of market.

### Securities accessible to individual shareholders

In 2018, the Group continued to develop communication with individual shareholders, including the organization of shareholder meetings in Nantes and Lille in partnership with F2IC and CLIFF, as well as the company's participation in the Actionaria tradeshow in Paris.

The Group's objective for 2019 is to continue to develop communication with individual shareholders in a similar way, relying, as in previous years, on the distribution of letters dedicated to shareholders.

### List of brokers

	Agnès BLAZY
	Laurent GELEBART
ID MIDCAPS	Denis SCHERRER
	Christophe MENARD
	Jean-François GRANJON
	Jérémy SALLEE

### Contacts

#### For information or documentation

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Relations with shareholders, investors, financial analysts and the financial and economic press:

Mr Emmanuel VIELLARD – CEO.

## FINANCIAL DATA

### INCOME STATEMENT

(in thousands of euros)	12/31/2018	12/31/2017
<b>Sales revenue</b>	<b>1,645,095</b>	<b>1,643,356</b>
Changes in stock, finished products and production in progress	9,251	(884)
Total production	1,654,346	1,642,472
Other revenues(a)	39,641	26,661
<b>Total operating revenues</b>	<b>1,693,987</b>	<b>1,669,133</b>
Consumed goods	(464,424)	(443,119)
Other purchases and external expenses	(352,485)	(338,332)
Taxes and duties	(11,615)	(12,171)
Personnel expenses (including temporary workers)	(640,048)	(619,333)
<b>EBITDA</b>	<b>225,416</b>	<b>256,178</b>
Depreciation	(99,025)	(90,132)
Net provisions	9,166	5,352
<b>Current operating profit (EBIT)</b>	<b>135,558</b>	<b>171,398</b>
Non-recurring operating expenses	(13,693)	(7,329)
Non-recurring operating revenues	3,427	3,649
<b>Operating profit</b>	<b>125,290</b>	<b>167,718</b>
<b>Financing expenses and revenue on cash</b>	<b>(2,503)</b>	<b>(2,421)</b>
Revenue on cash	3,462	3,445
Financing expenses	(5,965)	(5,866)
<b>Other interest revenue and expenses</b>	<b>7,847</b>	<b>(19,166)</b>
Other financial items	42,635	60,852
Other interest expenses	(34,788)	(80,018)
Taxes (including CVAE (Tax on Companies' Added Value))	(33,839)	(39,182)
<b>Profit (loss) for the period</b>	<b>96,794</b>	<b>106,951</b>
Attributable as company shareholders' equity	92,069	107,965
Interest not granting control over the company	4,725	(1,014)
<b>Earnings per share (in €)</b>	<b>1.73</b>	<b>2.04</b>
<b>Diluted earnings per share (in €)</b>	<b>1.72</b>	<b>2.02</b>

(a) In order to provide readers of the financial statements with better information that is in accordance with international standards, in the 2018 financial statements the Company has continued classifying revenues related to CIR (Research tax credit) as "Other Revenues".

### STATEMENT OF OVERALL EARNINGS

(in thousands of euros)	12/31/2018	12/31/2017
<b>Profit (loss) for the period</b>	<b>96,794</b>	<b>106,951</b>
<b>Other items of overall income applied to shareholders equity</b>		
Actuarial gains and losses out of employee benefits (gross element)	(3,986)	671
Actuarial gains and losses out of employee benefits (tax impact)	907	(302)
Restatements of treasury shares (gross element)	(422)	220
Restatements of treasury shares (tax impact)	122	(64)
<b>Other items of overall income that will cause a reclassification of income</b>		
Exchange rate differences resulting from foreign business	3,794	(19,251)
Hedging instruments (gross element)	(12,004)	25,361
Hedging instruments (tax impact)	3,199	(7,085)
<b>Other portions of global earnings, after taxes</b>	<b>(8,389)</b>	<b>(451)</b>
<b>Total overall income for the period</b>	<b>88,404</b>	<b>106,500</b>

Hedging instruments consist mainly of foreign exchange hedging instruments and, to a lesser extent, raw material hedging instruments. The negative amount of €12.0 million is due mainly to the rise in the USD, which resulted in a symmetrical decrease in the fair value of the hedging instruments put in place to protect against the fall of the USD.

## FINANCIAL DATA

### STATEMENT OF FINANCIAL POSITION

ASSET (in €'000)	12/31/2018	12/31/2017	TOTAL EQUITY AND LIABILITIES (in €'000)	12/31/2018	12/31/2017
<b>NON-CURRENT ASSETS</b>			<b>SHAREHOLDERS' EQUITY</b>		
Goodwill	347,787	321,377	Share capital	21,646	21,610
Other intangible assets	26,975	30,177	Additional paid-in capital	75,329	72,584
Tangible assets	676,657	619,593	Treasury shares	(15,175)	(14,720)
Non-current financial assets	8,923	9,982	Consolidated reserves	757,720	688,882
Deferred tax assets	11,894	8,568	Conversion reserves	12,339	8,419
Other Non-current assets	480	429	Other income and expenses recorded directly as shareholders' equity	(6,918)	5,261
<b>Total non-current assets</b>	<b>1,072,716</b>	<b>990,126</b>	Profit (loss) for the period	92,069	107,965
<b>CURRENT ASSETS</b>			<b>Total shareholders' equity - Group's share</b>	<b>937,010</b>	<b>890,001</b>
Inventories	351,009	337,099	Minority interests	6,625	7,664
Taxes - Claim on the state	22,032	41,269	<b>Total shareholders' equity</b>	<b>943,634</b>	<b>897,665</b>
Trade and other receivables	263,141	261,249	<b>NON-CURRENT LIABILITIES</b>		
Cash and cash equivalents	156,879	197,576	Non-current provisions	65,475	64,995
<b>Total short-term assets</b>	<b>793,061</b>	<b>837,193</b>	Non-current borrowings	337,354	317,757
<b>TOTAL ASSETS</b>	<b>1,865,775</b>	<b>1,827,319</b>	Other non-current liabilities	8,452	11,605
			Deferred tax liabilities	37,745	40,747
			<b>Total non-current liabilities</b>	<b>449,025</b>	<b>435,104</b>
			<b>SHORT-TERM LIABILITIES</b>		
			Current provisions	13,404	15,156
			Current borrowings (1)	158,831	179,973
			Trade and other accounts payable	298,469	297,109
			Taxes due	2,411	2,312
			<b>Total short-term liabilities</b>	<b>473,116</b>	<b>494,550</b>
			<b>TOTAL SHAREHOLDERS' EQUITY AND LIABILITIES</b>	<b>1,865,775</b>	<b>1,827,319</b>
			(1) Of which banking facilities	20,480	16,441

## FINANCIAL DATA

### LISI GROUP CONSOLIDATED CASH FLOW STATEMENT

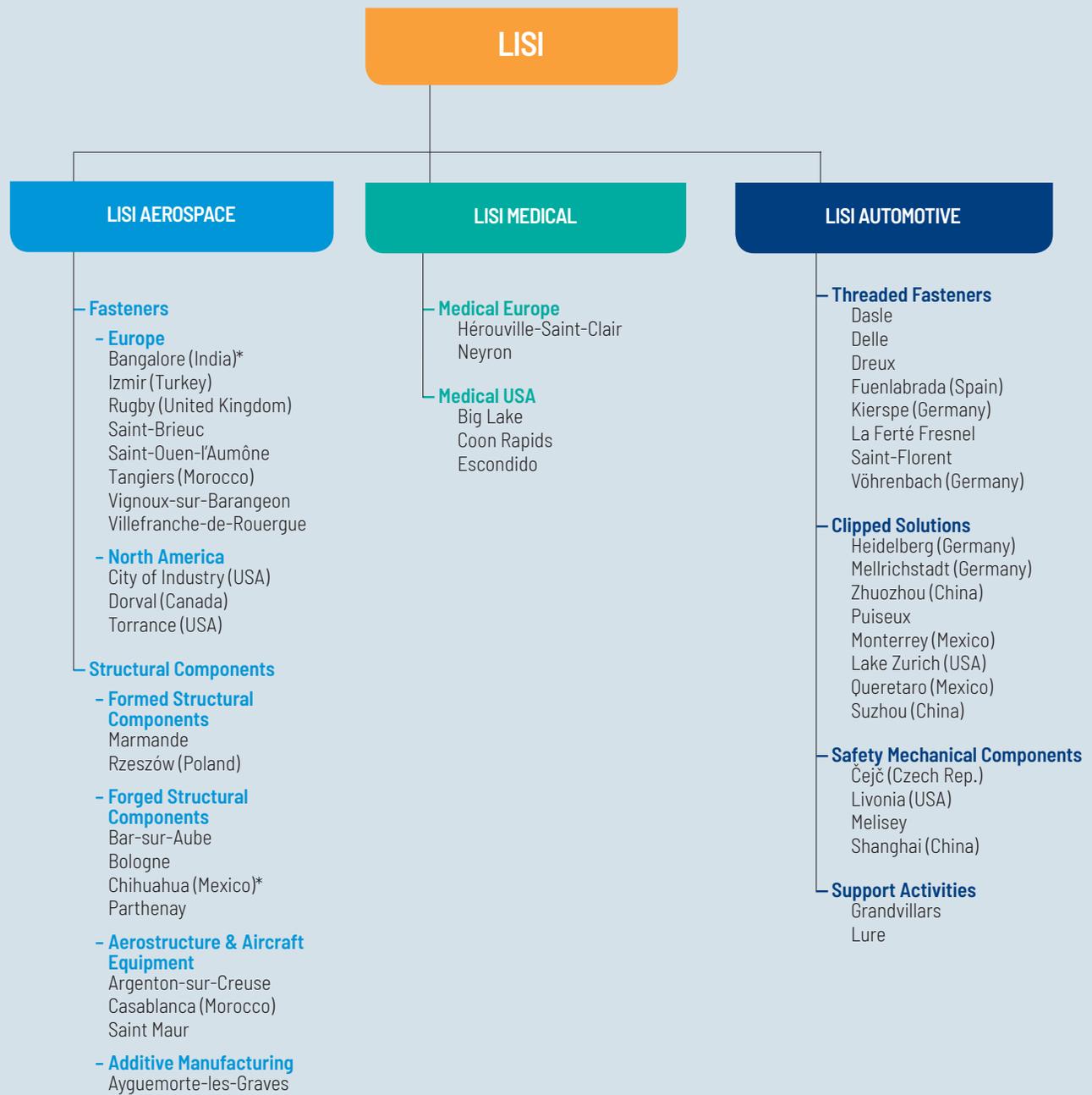
(in thousands of euros)	12/31/2018	12/31/2017
<b>OPERATING ACTIVITIES</b>		
<b>Net earnings</b>	<b>96,794</b>	<b>106,951</b>
Elimination of net expenses not affecting cash flows:		
- depreciation and provisions	98,634	89,819
- changes in deferred taxes	2,333	10,335
- income on disposals, provisions for liabilities and others	1,393	(1,932)
<b>Gross cash flow margin</b>	<b>199,154</b>	<b>205,173</b>
Net change in provisions on claims and inventories	(4,303)	(1,335)
<b>Operating cash flow</b>	<b>194,853</b>	<b>203,838</b>
Income tax expense elimination	31,506	28,847
Elimination of net borrowing costs	5,767	5,686
Effect of changes in inventory on cash	(5,744)	67
Effect of changes in accounts receivable and accounts payable	(16,645)	17,973
<b>Net cash provided by or used for operations before tax</b>	<b>209,735</b>	<b>256,411</b>
Tax paid	(15,434)	(64,298)
<b>CASH PROVIDED BY OR USED FOR OPERATIONS (A)</b>	<b>194,302</b>	<b>192,113</b>
<b>INVESTMENT ACTIVITIES</b>		
Acquisition of consolidated companies	(702)	(51,014)
Cash acquired	(43,384)	2,409
Acquisition of tangible and intangible fixed assets	(134,103)	(141,694)
Acquisition of financial assets		
Change in granted loans and advances	(267)	(722)
Investment subsidies received		
Dividends received		
<b>Total cash used for investment activities</b>	<b>(178,455)</b>	<b>(191,021)</b>
Divested cash	(267)	(5,701)
Disposal of consolidated companies	3,191	13,060
Disposal of tangible and intangible fixed assets	2,822	1,548
Disposal of financial assets		
<b>Total cash from disposals</b>	<b>5,746</b>	<b>8,907</b>
<b>CASH PROVIDED BY OR USED FOR INVESTMENT ACTIVITIES (B)</b>	<b>(172,710)</b>	<b>(182,114)</b>
<b>FINANCING ACTIVITIES</b>		
Capital increase	3,167	1,920
Net disposal (acquisition) of treasury shares		
Dividends paid to shareholders of the Group	(25,499)	(23,873)
Dividends paid to minority interests of consolidated companies	(1,879)	
<b>Total cash from equity operations</b>	<b>(24,211)</b>	<b>(21,954)</b>
Issue of non-current loans	30,653	50,913
Issue of short-term loans	102,739	126,640
Repayment of non-current loans	(6,783)	1,372
Repayment of short-term loans	(161,420)	(102,807)
Net interest expense paid	(5,766)	(5,680)
<b>Total cash from operations on loans and other financial liabilities</b>	<b>(40,576)</b>	<b>70,439</b>
<b>CASH PROVIDED BY OR USED FOR FINANCING ACTIVITIES (C)</b>	<b>(64,789)</b>	<b>48,485</b>
Effect of change in foreign exchange rates (D)	(1,149)	(2,976)
Effect of adjustments in treasury shares (D)	(390)	(110)
<b>Changes in cash (A+B+C+D)</b>	<b>(44,736)</b>	<b>55,398</b>
Cash at January 1 (E)	181,135	125,736
Cash at year-end (A+B+C+D+E)	136,400	181,134
Cash and cash equivalents	156,879	197,575
Short-term banking facilities	(20,479)	(16,440)
<b>CLOSING CASH POSITION</b>	<b>136,400</b>	<b>181,135</b>

## FINANCIAL DATA

### STATEMENT OF SHAREHOLDERS' EQUITY

(in thousands of euros)	Share capital	Capital-linked premiums (Note 7.3)	Treasury shares	Consolidated reserves	Conversion reserves	Other income and expenses recorded directly as share- holders' equity	Profit for the period, Group share	Group's share of shareholders' equity	Minority interests	Total shareholders' equity
<b>Shareholders' equity at January 1, 2017</b>	21,610	72,584	(14,610)	659,375	27,742	(13,452)	107,008	860,258	4,964	865,222
Profit (loss) for the period N (a)							107,965	107,965	(1,014)	106,951
Translation differences (b)					(19,324)			(19,324)	73	(19,251)
Payments in shares (c)				2,075				2,075		2,075
Capital increase	0	0						0	2,000	2,000
Restatement of treasury shares (d)			(110)			156		46		46
Restatement as per IAS19 (g)						369		369		369
Appropriation of N-1 earnings				107,008		(107,008)		0		0
Change in scope				(57,244)				(57,244)	0	(57,244)
Dividends distributed				(23,872)				(23,872)	0	(23,872)
Reclassifications								0		0
Restatement of financial instruments (f)						18,188		18,188	86	18,274
Various (e)				1,540				1,540	1,556	3,096
<b>Shareholders' equity at December 31, 2017</b>	<b>21,610</b>	<b>72,584</b>	<b>(14,720)</b>	<b>688,882</b>	<b>8,419</b>	<b>5,261</b>	<b>107,965</b>	<b>890,001</b>	<b>7,664</b>	<b>897,665</b>
<i>including total income and expenses reported for the year (a) + (b) + (c) + (d) + (e) + (f)</i>					(19,324)	18,713	107,965	107,355	(855)	106,500
<b>Shareholders' equity at January 1, 2018</b>	21,610	72,584	(14,720)	688,882	8,419	5,261	107,965	890,001	7,664	897,665
Profit (loss) for the period N (a)							92,069	92,069	4,725	96,794
Translation differences (b)					3,920			3,920	(126)	3,794
Payments in shares (c)				614				614		614
Capital increase	36	2,745						2,781	470	3,251
Restatement of treasury shares (d)			(455)			(300)		(755)		(755)
Restatement as per IAS19 (g)						(3,079)		(3,079)		(3,079)
Appropriation of N-1 earnings				107,965		(107,965)		0		0
Change in scope				(14,371)				(14,371)	(2,527)	(16,898)
Dividends distributed				(25,499)				(25,499)	(1,879)	(27,378)
Reclassifications								0		0
Restatement of financial instruments (f)						(8,800)		(8,800)	(5)	(8,805)
Various (e)				128				81	(1,698)	(1,570)
<b>Shareholders' equity at December 31, 2018</b>	<b>21,646</b>	<b>75,329</b>	<b>(15,175)</b>	<b>757,720</b>	<b>12,339</b>	<b>(6,918)</b>	<b>92,069</b>	<b>937,010</b>	<b>6,625</b>	<b>943,634</b>
<i>including total income and expenses reported for the year (a) + (b) + (c) + (d) + (e) + (f) + (g)</i>					3,920	(12,179)	92,069	83,810	4,594	88,404

# FUNCTIONAL ORGANIZATION CHART



\*Secondary sites

This annual report as well as the financial report are available  
to download from our website:  
**[www.lisi-group.com](http://www.lisi-group.com)**

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The logo for the Lisi group, featuring the word "lisi" in a bold, lowercase, blue sans-serif font.