Contents

News breaks P. 04
Tomorrow P. 08
NFC: the contactless revolution

Special report P. 10
Paris Air Show Innovation and Excellence.

Panorama P. 18
Wiring takes jewel-like precision
Safran makes wiring in Mexico for many different airplanes.

Markets P. 22
22 India: the place to be
25 India’s growth, at the heart of Safran’s strategy
29 Sofradir: bidding for global leadership in infrared detection
30 Sagem on the high seas

Insight P. 32
32 Safran and suppliers shift into top gear
34 Formidable job opportunities

Interview P. 36
Safran, a preferred partner to Textron
Interview with Scott Donnelly, Chairman, President and Chief Executive Officer, Textron.

You can also check out the latest Safran news on:
• www.safran-group.com
• www.facebook.com/GroupeSafran
• twitter.com/safran

2013 Paris Air Show
Innovation, audacity, winning spirit

Jean-Paul Herteman
Chairman and CEO of Safran

Safran will of course be out in force at the 50th Paris Air Show, the world’s premier get-together for the global aerospace industry, and a biennial highlight for our Group.

The Paris Air Show, more familiarly known as “Le Bourget” in France, is a tremendous showcase for our products. We have quite a few to introduce this year, starting with Jack, the Checkpoint of the Future, which will speed up passenger control procedures in airports, as well as a number of innovations for tomorrow’s airplanes. We will also display the electric green taxiing system (egts) that we’re developing in partnership with Honeywell.

Visitors at this year’s air show will see an aircraft fitted with a new system that allows it to move independently on the ground without using its jet engines but rather with electric motors driving the landing gear wheels, a system that could reduce fuel consumption and CO2 emissions by up to 5% on short-haul flights.

Le Bourget is also a wonderful opportunity to get the word out about Safran and our wealth of professions. It allows us to showcase the excellence of our technologies, the strength of our corporate culture and the variety of job opportunities available within the Group, whether through the products displayed on our stand (under the Rotunda in Hall 2A), or the job forums and even a job dating operation being organized in parallel, as well as the seven Safran stands that are part of the “Careers Plane” being organized by French aerospace industry association Gifas. What better way for Safran to meet the talented young people who will soon be joining us?

“Innovation, audacity, winning spirit… at the 2013 Paris Air Show, we will more than ever establish Safran as one of the “majors” in the global aerospace industry.”

For over 60 years now, Safran has been developing its industrial and commercial operations in India, in all three core businesses: aerospace, defense and security.
French prime minister visits Morpho plant in Hamburg

During an official visit to Germany, on February 22, 2013, French Prime Minister Jean-Marc Ayrault visited Morpho’s R&D center in Hamburg, dedicated to X-ray diffraction technology, a key to explosive detection systems. He was accompanied by Jean-Paul Herteman, Chairman and CEO of Morpho, and Jean-Paul Jainsky, Chairman and CEO of Morpho. Mr. Ayrault saw a demonstration of Morpho’s XDI system, designed to inspect liquids in hand luggage without passengers having to open their bags. This innovative system is slated for deployment starting in 2015 to meet upcoming international regulations for airport security.

Safran invests to keep pace with production ramp-up

The ramp-up in new aircraft programs to which Safran contributes demands high-performance, tailored production facilities, as reflected in the expansion of Messier-Bugatti-Dowty’s plant in Bidos, southwest France. Specialized in the production of landing gear, this plant will receive an investment of 35 million euros, financed by Safran in partnership with public authorities. It will fund the construction of a 6,500 square meter building dedicated to machining large titanium parts, used on new Airbus and Boeing long-haul jetliners. The project also comprises the introduction of new, more ecological surface treatment technologies.

LOOKING FOR THE WHITE BIRD

Safran is a partner in the association La recherche de l'Oiseau Blanc (“In Search of the White Bird”), which is trying to find the legendary airplane flown by French pilots Charles Nungesser and François Coli in an attempt to fly across the North Atlantic in 1927. They never arrived, and various evidence seems to indicate that they crashed off the coast of Saint-Pierre-et-Miquelon. In May 2013, during the last search campaign, Safran Chairman and CEO Jean-Paul Herteman, accompanied by French and American journalists, placed a wreath in front of the Galanterie lighthouse, near where the plane may have ditched at sea. The U.S. Coast Guard, which sought to save the pilots in 1927, was also represented at the ceremony.

Morpho facilitates Interpol trips

Agents at Interpol, the international police coordination organization, should be able to travel between member countries with the fewest possible restrictions. The agency therefore decided to deploy a travel document that would enable its agents to make international trips while on assignment without needing a visa. Morpho, a partner to Interpol for over a decade, was chosen in November 2012 to provide the secure ID management and document production system. The travel document will include a 3D portrait of the bearer, laser-engraved, along with his or her fingerprints, stored on a secure chip. Thanks to its proven expertise in this field, Morpho can provide documents meeting Interpol’s demanding standards for quality, reliability and security.

Arrano, Turbomeca’s latest

Turbomeca (Safran) unveiled its latest turboshaft engine, Arrano, at Heli-Expo in March 2013. Developing 1,100 shaft horsepower (shp), the Arrano is designed for helicopters in the 4 to 6-ton class. It offers 10 to 15% lower fuel consumption than the Turboatome Arriel, today’s world best-seller in this class, giving helicopters longer range and greater payload capacity, plus a reduced environmental footprint. Eurocopter has already chosen this engine for its new-generation X4 helicopter, and the Arrano will start ground tests in 2014.

SUPPORTING YOUTH EMPLOYMENT IN EUROPE

Safran is the first employer in France to have signed, on March 28, 2013, a European agreement on the progressive integration of young people. In particular, Safran pledges to hire young graduates and increase the number of apprenticeships, internships and student researchers at Group companies. Safran currently welcomes nearly 5,000 interns and young people in work-study programs every year, and is continuing an ambitious recruiting drive to hire 7,000 new employees worldwide in 2013, including 4,500 in Europe.
More women in industry!

On March 21, 2013, Sagem (Safran) welcomed 40 female high-school students to its plant in Eragny, near Paris, so they could get a closer look at engineering and technical jobs in the field. This operation was part of the Industry Week initiative organized in conjunction with the association Elles bougent ("Women on the Move"), which aims to promote women in technical professions, and encourage them to take an interest in professions often considered – wrongly! – as uniquely masculine. This visit reflects Safran’s ongoing commitment to the association, also illustrated by the appointment of Jean-Luc Bérard, the Group’s head of Human Resources, as its honorary chairman. Safran is firmly convinced that a major enterprise draws its strength from the men and women who work for its success day after day. The Group already counts 25% women in its workforce, compared with 17% women students in engineering schools in its sectors.

€13.6 billion in sales in 2012.

SAFRAN STILL A TOP INNOVATOR

For the second year in a row, Snecma (Safran) was one of the “Top 100 Global Innovators”, in the 2012 ranking published by multinational media and information firm Thomson Reuters. This ranking is primarily based on the number of patents filed during the year, and their importance. Safran was ranked third in France in 2012 for the number of patents filed, with a total of 556 applications. The Group currently has a portfolio of nearly 24,000 patents.

INNOVATION

A nacelle with a future

The Safran Innovation Awards ceremony on April 22, 2013 recognized the best innovations proposed by Group companies. The Grand Prize winner this year was the PANACHE (Pylon and Nacelle Advanced Configuration for High Efficiency) thrust reverser demonstrator developed by Nexcelle, the joint venture of Aircafe (Safran) and Middle River Aircraft Systems (GE Aviation). This demonstrator validated an innovative single-piece O-duct thrust reverser, intended to replace the two-piece thrust reversers now in service. Lighter thanks to the composite structure, this new thrust reverser will improve the overall performance of the propulsion system and help reduce fuel consumption. It will feature an electrical thrust reverser actuation system, or ETRAS, developed by Aircafe and Hispano-Suiza for the nacelles on the Airbus A380.

Safran Corporate University builds a new central campus

Safran acquired land in Massy-Palaiseau, near Paris, for its new Safran Corporate University campus, reflecting the Group’s commitment to enriching employee skills and developing a shared corporate culture, both essential to building solid foundations for the future. Housing up to 600 students at a time, this campus illustrates Safran’s effort to instill Group-wide training. Safran Corporate University has two international faculties as well, in Dallas, Texas and Beijing, China.

Decision-makers

Chris Plumb, Managing Director of Safran Power

“Driven by the need for greater fuel economy and lower life cycle costs, the ‘more electric’ aircraft is a key growth area for the aviation industry. Safran Power has already pioneered leading-edge products, such as variable frequency power generation, which together with sustained investment in Research and Technology over the last decade has led to the development of electric engine start hardware, due for flight trials later this year. We are eminently placed to work with other parts of Safran. Together we can develop world beating systems and solutions for the ‘more electric’ aircraft.”

After starting his career with Dowty Rotol, now part of Messier-Bugatti-Dowty (Safran), Chris Plumb held management and leadership roles in Goodrich, TRW Aeronautical Systems, Lucas, GEC, Ultra and Dowty. At the head of Goodrich Electrical Power Systems he championed technology innovation and continuous improvement in its facilities. In March 2013, Chris Plumb was named Managing Director of Safran Power UK and Safran Power USA after Safran’s acquisition of GEPS from United Technologies Corporation of the United States.
**NFC: THE CONTACTLESS REVOLUTION**

Thanks to the new generation of contactless SIM cards developed by Morpho (Safran), people can now use their mobile phones to pay for purchases, take buses or trains, and even gain entry to buildings.

With the exception of Asia, where contactless technology is already widespread, few mobile phone users know what the abbreviation NFC means. “It stands for ‘Near Field Communications’, in other words short-range wireless communication,” explains Cyril Caillaud, Morpho’s NFC product manager. “An NFC device, such as a phone equipped with an NFC SIM card, can exchange data with a reader via radio-frequency communication, at a distance of up to 10 centimeters.” For Morpho, contactless technology is already a reality: the firm has been supplying NFC SIM cards to KT, South Korea’s second-largest mobile network operator, since 2012.

**A WIDE RANGE OF APPLICATIONS**

Phones equipped with an NFC SIM card can be used for transactions simply by holding them up to a compatible reader, such as a payment terminal or a public transport gate. They function as a kind of electronic wallet, in addition to performing all of their normal tasks. An NFC-equipped smartphone can be used for payment or transport, as well as an access badge, loyalty card, etc. It can even be used as a reader for decoding labels in stores or special information tags at tourist sites.

**SECURITY: THE KEY TO SUCCESS**

While NFC mobiles are already in wide use in Japan and South Korea, a raft of initiatives has been launched to promote their use around the world, bringing together mobile operators and service providers (such as banks, transport companies and major retail brands). Security is a vital prerequisite for wholehearted take-up by consumers. “With more and more transactions being conducted via mobile phone, security is an increasing concern for users and operators,” stresses Yves Portalier, Morpho’s Senior Vice President, Telecoms. As a major player in SIM cards and secure electronic documents, Morpho rose to the challenge. “The SIM card is already the most secure component of a mobile phone,” adds Yves Portalier. “We took it to the next level by designing an open NFC SIM card capable of hosting new services while maintaining a very high level of security. In addition, Morpho can offer a complete remote management solution for NFC SIM cards as well as applications specific to individual services, such as banking rights and discount vouchers, without the need to swap SIM cards.”

**LIFT OFF!**

Contactless technology now appears ripe for an explosion in use. Studies predict that, now that the technology has matured, 552 million NFC mobiles will be sold around the world by 2016, equivalent to 28% of all mobile phone sales, and 54% of smartphones. Morpho fully intends to take a lead role in this booming market.

---

Supporting the growth of mobile Internet

4G LTE [Long Term Evolution] is the latest big thing to happen in the mobile sector. This new technology will bring a significant boost in data rates, further blurring the boundaries between mobile and conventional Internet use. A total of 234 LTE networks are expected to be up and running in 83 countries around the world by the end of 2013, while the number of LTE subscribers is set to double. To manage this ramp-up, and enable the technology to function effectively alongside current networks (2G, 3G and cdma2000), Morpho has developed a new generation of SIM cards dubbed SIMply LTE, enabling operators to offer advanced multimedia communication functionalities while optimizing traffic management between cellular and Wi-Fi networks. New services like these will soon be available to customers, allowing operators to monetize the significant investments they have made in developing 4G LTE by positioning themselves right at the heart of the value chain.

© Sébastien Piramowicz / Morpho / Safran

---

4G LTE is the latest big thing to happen in the mobile sector. This new technology will bring a significant boost in data rates, further blurring the boundaries between mobile and conventional Internet use. A total of 234 LTE networks are expected to be up and running in 83 countries around the world by the end of 2013, while the number of LTE subscribers is set to double. To manage this ramp-up, and enable the technology to function effectively alongside current networks (2G, 3G and cdma2000), Morpho has developed a new generation of SIM cards dubbed SIMply LTE, enabling operators to offer advanced multimedia communication functionalities while optimizing traffic management between cellular and Wi-Fi networks. New services like these will soon be available to customers, allowing operators to monetize the significant investments they have made in developing 4G LTE by positioning themselves right at the heart of the value chain.

© Sébastien Piramowicz / Morpho / Safran
PARIS AIR SHOW
2013

Expected at the Show this year:

2,138 exhibitors
150,000 trade visitors
200,000 public visitors
The Paris Air Show is the premier global event for the entire aerospace industry, and a stellar occasion for Safran to showcase its wide-ranging scope of business and latest technological innovations.

This year marks the 50th edition of the Paris Air Show, and “Le Bourget”, as it’s known in France, should once again attract a huge crowd. Organizers are expecting more than 150,000 visitors during the days open only to professionals, and some 200,000 visitors on days open to the general public.

The Paris Air Show is above all a tremendous media showcase for all exhibitors. Some 3,000 journalists will be on hand to cover this event, which brings together all of the economic, political, governmental and technological players that make up the global aerospace industry. Safran fully intends to seize this opportunity to announce its latest contracts. The previous show, in 2011, should once again attract a huge slice of contracts. The previous show, in 2011, announced 910 orders.

Safran is showcasing three research programs at the Paris Air Show which are pivotal for its future: new materials for aircraft, the electric green taxiing system, and the checkpoint of the future for airports.

**ECONOMIC AND ENVIRONMENTAL CHALLENGES**

How can we reduce the fuel consumption of aircraft? Encompassing both economic and ecological challenges, this issue has rallied players in the aviation industry for a number of years. Their analyses have led to two major approaches: reducing aircraft weight and improving engine performance. To meet this two-pronged challenge, Safran is betting on the expanding use of new materials such as composites, which are lighter than titanium, nickel or steel parts. Safran is investing heavily in R&D to develop these materials.

The new LEAP engine, showcased on our stand at the Paris Air Show, will benefit from the latest advances in material science,” points out Claude Quillien, Vice President for Materials & Processes at Safran. “Its fan blades and casing are made of 3D woven composites using the RTM process (see box opposite), a technology we are developing with our American partner, Albany International.” Composite materials are also used in nacelles and various other parts made by Safran companies. “These materials drive significant improvements in service life and maintenance,” adds Quillien. “Our customers demand parts combining higher reliability and lower operating costs.” The research teams at Safran have to integrate all of these concerns.

Fully aware of the potential gains offered by advanced composites, Safran has invested the requisite resources. In addition to building a new research center dedicated to composite materials, up and running at the end of 2013, two new production plants are now under construction, one in the United States, in Rochester, New Hampshire, and the other in eastern France, in Commercy. Another promising technology for the future is advanced metallic alloys, capable of standing up to very high temperatures. For example, the low-pressure turbine blades on LEAP will use alumina-based alloys, which offer significant weight savings because of their low density.

**SAFRAN AT THE PARIS AIR SHOW**

The Paris Air Show is the premier global event for the entire aerospace industry, and a stellar occasion for Safran to showcase its wide-ranging scope of business and latest technological innovations.

**A powerful recruiting showcase**

Safran also uses the Paris Air Show as an unparalleled opportunity to recruit new talents and publicize its businesses and professions in general. In addition to a special “job corner” on the Group stand, Safran has scheduled two days of “job dating” during the show. More than 100 pre-selected candidates will be interviewed. Afterwards, they can visit the stand and meet Safran’s “ambassadors”. Safran is also participating in various events scheduled by the show organizers to facilitate recruiting, especially the Air & Space Forum, open to students and recent graduates, and the “Jobs Airplane”, comprising a number of stands arranged in the shape of an airplane, enabling the public to discover the key jobs in aerospace.

**INNOVATION**

**SHAPING TOMORROW’S SKY**

Safran is showcasing three research programs at the Paris Air Show which are pivotal for its future: new materials for aircraft, the electric green taxiing system, and the checkpoint of the future for airports.

**Composite materials glossary**

Composite materials basically comprise a framework of fibers or particles, protected by a resin, ceramic or metal-based matrix. Their properties, in terms of strength, temperature resistance, etc. depend on the type of components used and their geometric arrangement. There are three main families of composites used in engines:

- **Organic matrix composites (OMC)**. These composites do not stand up to temperatures exceeding 250°C and are therefore used on the “cold” parts of jet engines, namely the fan blades and casing. On the LEAP engine, these parts will be made of 3D woven composites using the RTM (resin transfer molding) process, which involves injecting liquid resin into a mold. OMCs are also used to make engine nozzles.

- **Ceramic matrix composites (CMC)**. Part of the family of thermostructural composites, which resist very high temperatures, they are used on some of the hotter parts of the engine, including low-pressure turbine blades, nozzle, etc.

- **Metallic matrix composites (MMC)**. Offering exceptional stiffness and strength, MMCs also provide significant weight savings.

Learn more

**Interview with Yann Richard, CMC exhaust program manager at Herakles, in the Media Corner on Safran’s website: www.safran-group.com**
**AN ELECTRIC REVOLUTION ON THE TARMAC**

There are other solutions to cut fuel consumption. Since 2011 Safran has been working on the electric green taxiing system (egts), in partnership with Honeywell. This innovative system uses an electric motor installed in the wheels on the landing gear so that the airplane can taxi before and after takeoff using only its auxiliary power unit (APU), without having to fire up the plane’s jet engines or call on an airport tractor. For an average taxiing time of 25 minutes, this system would save 140 kilograms of fuel. Using this configuration, an airline can reduce the amount of jet fuel needed by about 4%, while reducing greenhouse gas emissions by 50% to 75%.

“We are moving forward quickly on this program,” notes egts program director Olivier Savin. “In line with our schedule, we have carried out a feasibility study to convince aircraft manufacturers and airlines that it’s a valid concept. We have performed the first tests on our demonstrators, followed by taxiing tests on Safran’s own airplane last April in Toulouse.” In late 2011, Safran acquired its own Airbus A320 “flying testbed” to check out this system under actual conditions. “The egts in fact impacts a number of different parts of the aircraft, from cockpit to wheels, along with the power electronics, avionics and wiring,” adds Savin. “Our main challenge is to successfully integrate this technology, while modifying the airplane as little as possible, thus retaining the features and high dispatch reliability that have driven the success of today’s single-aisle commercial jets.”

**OPTIMIZING PASSENGER CHECKS**

Safran’s innovations are not limited to aircraft. Group company Morpho is leveraging its expertise in biometrics and explosive detection to develop an integrated checkpoint for airports. The aim is to simplify and expedite the different passenger checks needed before they board an airplane. “We decided to develop this type of system for several reasons,” explains Christine Riveau, deputy director of new ventures in Morpho’s strategic development department. “First, we noted that passengers were increasingly frustrated by waits at checkpoints. The underlying cause was the large number of manual steps for checking hand luggage due to highly restrictive laws, mainly for liquids and gels. Not to mention that these operations cost airports money and damage their image. At the same time, we had achieved considerable progress in explosive detection, remote biometric identification and the secure management of sensitive data. Once we realized that these requirements and technologies had converged, the idea of developing an integrated airport checkpoint emerged quite naturally.”

Morpho’s airport checkpoint will be demonstrated on the Safran stand during the Paris Air Show. It marks a first step towards real progress in air transport efficiency and passenger comfort. The user is now at the center of all concerns, with the aim of providing a comfortable travel experience, the least invasive possible, while also further improving security. At the same time, it will reduce the airport’s passenger control costs.

---

**Towards more electric aircraft**

Safran is at the cusp of innovation for more electric aircraft, with solutions already equipping new-generation aircraft. For example, Safran’s electrical thrust reverser actuation system (ETRAS) is used on the Airbus A380 – a world first! In late 2012 Messier-Bugatti-Dowty’s electric brakes were chosen by LAN Airlines, the leading carrier in South America, for 32 Boeing 787 Dreamliners. In 2011, Sagem tested an aileron electromechanical actuator on an Airbus A320. And in 2012 the Brazilian plane-maker Embraer also chose Sagem to supply the horizontal stabilizer trim system on its new KC-390 military transport. The previous year Safran had already been chosen by Embraer to supply this aircraft’s primary and secondary electrical distribution systems and the backup power generation system, along with integration of the complete electrical system and the brakes and landing gear.

Aircraft flight controls, currently actuated by hydraulic systems, will eventually be driven by electrical systems offering the required reliability. To develop these innovative solutions, Safran counts on a dedicated entity, Safran Power, and Copper Bird, a modular test rig designed to support the development and testing of electrical systems for aircraft and engines.

---

**“Jack”, the integrated airport checkpoint: three milestones**

**2012**

A lab opens in Osny, near Paris, to handle developments and welcome potential customers to collect their comments and suggestions. Initial visitors include the International Air Transport Association (IATA), Airports Council International (ACI) and the French civil aviation directorate DGAC, as well as a Dutch delegation comprising representatives of KLM, Amsterdam-Schiphol aircraft and the Dutch National Coordinator for Terrorism Suppression (NTC).  

**2013**

Integration of new technologies (Finger on the Fly contactless detection system, X-ray diffraction explosive identification, etc.) on a more complete demonstrator.  

**2016**

Market introduction of the integrated airport checkpoint.
1. Leap
A new-generation turbofan engine from CFM International, LEAP has already been selected for the Airbus A320neo, the Boeing 737 MAX and the Comac C919, slated for entry into service starting in 2016. Incorporating leading-edge technologies such as 3D woven composite materials, LEAP offers unrivaled performance in terms of fuel consumption (15% under current engines), NOx emissions (50% lower) and noise (see page 13).

2. Vinci
Vinci is a cryogenic rocket engine that will power the upper stage of the upgraded Ariane 5 ME (Midlife Evolution) and the new-generation Ariane 6 launch vehicles. Developing 40,000 lb of thrust it features a number of advanced technologies, for an unrivaled combination of reliability, performance and economy. Vinci can be restarted multiple times, giving it greater flexibility for the orbital injection of satellites.

3. Silvercrest
Designed for long-range, large cabin business jets, the brand-new Silvercrest engine, wholly developed by Safran, provides unequalled performance in terms of cost, reliability and maintainability. It will reduce fuel consumption and CO2 emissions by 15%. Entry into service is slated for 2017 on the Cessna Citation Longitude.

4. TP400
Designed by Europrop International, a European consortium including Safran, the TP400 powers the Airbus A400M military transport. It’s the most powerful turboprop engine ever developed in the West, at 11,000 shaft horsepower, and is unique in having been designed from the outset for both civil and military certification.

5. Arrano
This new turboshaft engine offers a 10% to 15% decrease in fuel consumption and enhanced maintainability. Its first application is Eurocopter’s latest-generation X4 helicopter.

6. Electric brake for the Boeing 787 Dreamliner
Designed to reduce weight while retaining excellent thermal absorption properties, this electric brake features simplified maintenance and longer service life.

7. AASM modular air-to-ground weapon
The AASM is a family of new-generation smart guided air-to-ground weapons. Precision guidance uses combinations of GPS, inertial, laser and/or infrared sensors.

8. Electrical harness
Safran designs, produces and supports the installation of electrical wiring harnesses and cabinets, especially for Airbus and Boeing jetliners.

9. Electric green taxiing system
A system that allows aircraft to taxi around airports without using their jet engines, thus enhancing both economy and ecology (see page 14).

10. Integrated airport checkpoint
A single integrated system combining all passenger control steps at airports. It facilitates these controls while reducing costs and increasing security, based on advanced biometric ID and detection solutions (see page 14).

11. New materials
The use of composite materials and advanced metallic alloys enables Safran to reduce the weight of parts while increasing their strength (see page 13).

12. Airbus A380 electrical generator
Installed on the engine’s accessory gearbox, this generator provides variable frequency AC electrical power to the aircraft, ensuring higher reliability and maintainability.

Meet us at the Safran stand Hall 2A, stand 232

Get the latest Paris Air Show news at http://lebourget.safran-group.com

See Safran’s products

© Orfi
WIRING TAKES JEWEL-LIKE PRECISION

In Mexico, Safran makes wiring for many airplanes from all the major manufacturers.

THE LARGEST FACILITY OF ITS TYPE IN THE WORLD
Labinal, based in Chihuahua, was one of the pioneers in the Mexican aviation industry. Its main facility, spanning 3,860 square meters (50,240 sq ft) has already been expanded twice since its construction in 2001 - and is now the world’s largest facility dedicated to aircraft wiring.
Labinal (Safran) has operated in Mexico since the 1990s, and is now the country’s leading employer in the aviation industry. Its industrial complex in Chihuahua, comprising four factories, has 3,200 employees who design and assemble the wiring for civil and military aircraft built by today’s leading manufacturers: Airbus, Boeing, Bombardier, Dassault, Embraer, Eclipse, Beechcraft, Lockheed Martin, Spirit AeroSystems, Singapore Technologies and Sikorsky. It also houses 250 engineers from Safran Engineering Services, a Labinal subsidiary.

In 2012 this plant shipped some 30,000 harnesses to over 20 different destinations worldwide, representing 48,000 kilometers of wire – greater than the circumference of the Earth.

**Labor DE MEXICO**

Labinal has supplied wiring for Bombardier’s bizjets since 1997, in particular the wiring harnesses for the Learjet 75 fuselage.

**Fighters**

Labinal supplies wiring for a number of combat aircraft, including the Boeing F-22 and Lockheed Martin F-16.

**Airbus A380**

Sophisticated aluminum wiring technologies and braiding processes are needed to make the interconnection systems for the Airbus A380’s wings and fuselage.

**Boeing 787 Dreamliner**

600 people were specially trained to assemble wiring harnesses for the Boeing 787 Dreamliner.

**Phenom 100**

The wiring harnesses for the Phenom 100, fabricated in the new factory No. 4, are shipped to Embraer’s two assembly facilities.

**Safran Innovation Awards 2013**

Labinal teams in Chihuahua were recognized for their creativity at the 2013 Safran Innovation Awards. They draw inspiration from the world of gardening to create an easy-to-use tool to cut the excess lengths from the ties that attach wiring bundles. Called the “ring cutter for ties”, it reduces the number of movements needed from five to three, thus improving efficiency and reducing employees’ risk of cutting their hands.
Markets

1.2 million square miles (3.3 million square kilometers)

1.3 billion inhabitants

11th largest economy in the world

ECONOMY

INDIA: THE PLACE TO BE

With annual growth of 6 to 8% over the past decade, India is a key strategic market, one that is in perpetual transition with a large accent on modernization.

Ranked second only to China in terms of population, with 1.3 billion inhabitants, and 11th in terms of GDP, India is a key global market. Its economic growth, for so long driven by services, is now more diversified. Today, India is a major manufacturing country, with a booming domestic market spurred by the gradual emergence of a middle class. A very high proportion of people in the country – over 75% – are of working age. These advantages mean that India is attracting significant investment at global level.

OUTLOOK

“There are three main challenges in the medium term”, says Stéphane Lauret, CEO of the Group’s local representative, Safran India Pvt. Ltd: “energy security (the country has little in the way of natural resources); food self-sufficiency for a growing population; and...”

© Jagadeesh NV / Epa / Corbis
India is home to Safran’s largest presence anywhere in Asia, with 2,100 employees in nine companies and joint ventures.

“Just like in other countries where we have a significant industrial base, we have set up a Shared Services department to bring genuine consistency to our activities at a nationwide level. For example, we increasingly conduct sales on a joint basis across all of our companies in India,” explains Stéphane Lauret, CEO of Safran India Pvt. Ltd. “We now have everything we need to take the business forward over the next decade”.

India’s growth, at the heart of Safran’s strategy

Safran has operated in India across its three core businesses – aerospace, defense and security – for over 60 years. Through a combination of strong local presence and technological expertise, Safran is steadily gaining ground in a dynamic, yet highly demanding market.

The changes affecting India are taking place against a backdrop of deregulation of previously highly protected domestic markets, which should provide new growth opportunities for companies from around the world. The wide range of sectors attracting foreign investment includes services, banking, automobile manufacture, pharmaceuticals, microfinance, electricity distribution, defense, rail transport, education and waste management. The trend is already well advanced in some sectors, such as infrastructure, where ports, airports and energy facilities have already been opened up to foreign investment. This sector should continue to grow for several decades to come.

Investors need to establish partnerships with local players in order to succeed in the Indian market. Joint ventures with foreign firms appear to be the vehicle of choice, particularly in the military and aerospace sectors. The country has also begun reorganizing its system of social benefits via the Aadhaar project, an ambitious national ID program based on biometric technologies (see page 28).

With a presence in all of those booming sectors, Safran is well placed to make the most of emerging opportunities in the Indian market.
AN EXPANDING COMMERCIAL JET FLEET

The Indian market offers enormous potential. Aircraft manufacturers expect the country’s fleet of single-aisle commercial jets to double by 2030, for example, while the long-haul widebody market should grow seven-fold over the same period. Safran is well placed to meet this growing demand, with over 400 CFM56 engines manufactured by CFM already powering Indian aircraft. Safran has also demonstrated its long-term commitment to India by opening a new CFM maintenance training center close to Hyderabad airport in March 2010. The center will provide training for up to 500 maintenance technicians and engineers each year for the CFM56 engine, as well as the Arriel helicopter engine manufactured by Turbomeca (Safran). The Arriel powers 27 Dauphin AS365 helicopters for Pawan Hans Helicopters Limited, India’s leading civil helicopter operator. “In addition to engines, Safran also holds a 90% share of the domestic market for wheels and carbon brakes on commercial jets,” adds Stéphane Lauret.

Early successes led the Group to set up production and service facilities dedicated to the Indian market, while forging strong local partnerships. In 2005, for example, Bangalore-based Snecma HAL Aerospace Pvt. Ltd. – a 50/50 joint venture between Snecma and Hindustan Aeronautics Ltd. (HAL), India’s state-owned aircraft and helicopter manufacturer – began manufacturing high-tech components for Turbomeca and the CFM56. Safran Engineering Services India (Safran) employs more than 350 engineers in the vast southern Indian metropolis of Bangalore (see interview on page 27).

MILITARY AVIATION: A GROWTH SECTOR

Safran’s dynamic performance in the civil aviation market is echoed in the military sector. For instance, Safran has provided engines and systems for more than 200 airplanes and helicopters deployed by the Indian armed forces since the 1950s. The country’s 51 Mirage 2000 fighters are powered by Snecma engines, and its 120 Jaguars and 123 Hawk trainers are equipped with Turbomeca-Rolls-Royce engines. “HAL is our main partner and customer in India,” notes Satish Kirtikar, Managing Director of Turbomeca India Engines Pvt. Ltd. “They have already ordered several hundred TM333 engines for Indian-built Dhruv helicopters, and HAL and Turbomeca jointly developed a more powerful engine called Shaktri to cater to the high-altitude requirements for the Dhruv.”

Other major contracts in the pipeline with HAL include engines for the Light Combat Helicopter (LCH) and the Light Utility Helicopter (LUH), currently being negotiated. “We are in exclusive negotiations with the Indian government to supply 126 Rafale multirole fighters equipped with Snecma’s M88 engine, landing gear from Messier-Bugatti-Dowty (Safran), and an inertial navigation system from Sagem (Safran),” says Satish Kirtikar. “The Rafale consortium has commenced exclusive negotiations with the Indian government to supply 126 Rafale multirole fighters equipped with Snecma’s M88 engine, landing gear from Messier-Bugatti-Dowty (Safran), and an inertial navigation system from Sagem (Safran).” The contract would include an unprecedented production transfer agreement whereby HAL would be in charge of integrating 128 out of the 126 Rafale aircraft.
Markets

GROWING DEFENSE REQUIREMENTS
Safran is also present in the defense sector via three product families: inertial navigation systems, optronics, and flight controls. Almost the entire Indian Air Force fleet is equipped with Sigma 95N navigation systems as a result of a long-standing partnership with HAL. Three hundred new units are to be supplied over the next six years for the HAL-built Light Combat Aircraft, as well as the Sukhoi 30, Hawk and Jaguar fleets. The Sigma 95N has been selected as well for the first prototypes of the MALE drone being developed by India.

“The need to upgrade existing materiel and the massive procurement campaign launched by the Indian armed forces provide an excellent opportunity to consolidate our positions,” says Frédéric Giraud, Safran’s head of operations for India. Specific opportunities include the supply of high-precision artillery sighting systems, as well as panoptic surveillance and thermal imaging equipment for the Indian Navy. “Competition from domestic and international players in the Indian market is fierce. In addition, foreign suppliers now have to meet a new condition that requires in-country MRO capabilities to be provided for their systems and equipment,” adds Giraud. This requirement resulted in the recent creation of the New Delhi-based maintenance and customer support subsidiary Sagem Services India Pvt. Ltd.

SECURITY IS BIG BUSINESS
Safran has won a slew of major contracts in the security sector, and in particular the biometrics segment, via its subsidiary Morpho. The most prestigious business win was Morpho’s selection, via its subsidiary Morpho, to provide a suite of security systems, and the protection of banking systems. The firm is enjoying strong growth as it expands into new territories. In 2009, Aadhaar will eventually be the world’s largest program for biometric-based ID and database creation. “Safran is the only manufacturer involved at every level of this huge project. Our contributions encompass the database, the supply of biometric sensors, and enrollment,” explains Joachim Murat, Managing Executive Director of Morpho in India. Safran also operates the largest smartcard manufacturing facility in South Asia. With a workforce of over 1,000, it produces more than one million smartcards per day, 70% of which are exported to neighboring countries, as well as to Africa and the Middle East. The wide range of products is destined for a number of applications, including healthcare, banking and telephony.

Morpho’s expertise also extends to identification system upgrades for police forces, airport security systems, and the protection of banking systems. The firm is enjoying strong growth as it bids for a raft of projects and expands into new territories.

State Bank of India: breaking new ground in the use of biometrics to verify employee credentials

Safran recently finalized a historic agreement with the State Bank of India, via its subsidiary Morpho, to supply a biometric authentication system designed to verify employees’ credentials before granting them access to its central banking system, which manages all customer accounts, stock market transactions, etc. The contract win from the state-owned bank capitalized on Morpho’s successful work on the Indian government’s Aadhaar program. From now on, all 265,000 employees working at the bank’s 21,000 branches will have to use their fingerprints to access the core system. The contract, officially signed during the visit to India of French President François Hollande in February 2013, gives Safran an excellent platform to win further business in this segment of the future.

INFRARED DETECTION

SOFRADIR: BIDDING FOR GLOBAL LEADERSHIP

The $50/50 joint venture between Safran and Thales has all the assets needed to strengthen its leadership in the market for infrared detectors.

To date, 300 million Indians have enrolled in the Aadhaar project, which will eventually include more than 1 billion residents of India.

Infrared detectors are at the heart of optronics systems such as thermal cameras, missile seekers and surveillance systems. Countries capable of deploying these technologies for day or night target observation, identification, tracking and weapon guidance, whether on land, sea or in space, gain a decisive military advantage. Recognizing the potential offered by this situation, Safran and Thales decided to boost France’s capabilities in infrared detection by transferring their development and manufacturing activities in this field to their joint subsidiary Sofradir, effective January 1, 2013. This move follows the creation of Optrolead, another 50/50 joint venture dedicated to new defense optronics programs, in July 2012.

COMPLEMENTARY TECHNOLOGIES

Sofradir has been a leading expert in high-performance cooled infrared detectors for over 25 years, specializing in MCT (mercury cadmium telluride) technology. InSb (indium antimon-
INERTIAL NAVIGATION

Sagem (Safran) is a long-standing leader in navigation systems, and has forged a solid reputation in defense applications. With the brand-new BlueNaute inertial navigation system, the company is now seeking to carve out a spot in the commercial maritime market.

BlueNaute is the name of the new inertial navigation system offered by Sagem for the commercial maritime market. Primarily intended for merchant marine fleets and offshore applications, BlueNaute gives ships very precise headings, even at extreme latitudes, and also allows dynamic positioning because it compensates for boat movements due to swells and marine currents. The BlueNaute system is based on a cutting-edge technology, the hemispherical resonator gyro (HRG).

“We are a long-standing leader in very-high-performance military applications with our Sigma family of inertial navigation systems,” notes Fabrice Delhaye, head of Sagem’s Commercial Navigation department. “After making the Sigma 40 the best selling shipborne system in the world, we wanted to diversify into civil markets to provide new growth outlets.”

EXCEPTIONAL PERFORMANCE

Sagem’s diversification strategy is all the more relevant since it coincides with the needs of both shipowners and operators, who are looking for an ultra-reliable product that offers virtually fail-safe performance in service. Unlike traditional navigation systems based on mechanical or fiber-optic gyros, BlueNaute is maintenance-free and provides extremely high reliability, which means that shipowners avoid costly downtime. “For the same price, BlueNaute offers performance and reliability largely superior to current systems,” says Fabrice Delhaye. “Our system can operate for over 100,000 hours between failures, which is equal to the operational life of a ship. There’s also the offshore market, which has very demanding requirements for positioning precision and data accuracy. We just chalked up our first sales in this sector, and that wasn’t just a stroke of luck!”

A TECHNOCAL CHALLENGE

BlueNaute is a premium navigation system that was developed in less than two years by highly motivated teams. According to Nicolas Burgaud, head of Marketing & Business Development in Sagem’s Avionics Division, “We faced a heady challenge, namely to design a high-tech product that was both ultra-reliable and cost-competitive. We took a chance on a few audacious solutions, technically speaking, but they paid off, especially our choice of sensor. The HRG, initially developed for very specific space applications, had its design optimized to reduce unit costs. We can be very proud, because we are the only company to have made this technology more accessible for other applications!”

The next step is to introduce products for land applications, such as steering mobile satellite antennas (on Satcom vehicles) or geodesy, as well as aeronautical applications, in which the intrinsic qualities of Sagem’s HRG perfectly meet the requirements of prime contractors and end-customers. The ultimate goal is to make Sagem’s HRG-based products the global best-sellers on land, at sea and in the air.
AEROSPACE

SAFRAN AND SUPPLIERS SHIFT INTO TOP GEAR

With a backlog of orders amounting to almost four years of production, Safran is calling on its suppliers to help meet the exciting industrial challenges ahead.

Safran’s order book currently stands at a record of nearly 10,000 engines1, including more than 4,000 new-generation LEAP engines. “The challenge now is to convert this tremendous commercial success into industrial success,” says Xavier Dessemond, Safran’s purchasing director. “We are therefore working hand in hand with our suppliers to give them a stake in our growth.”

BUILDING FOR THE FUTURE TOGETHER

Production is stepping up not just on Safran’s programs already in production but also on new programs, which require considerable development and production engineering investments. To keep pace, Snecma’s (Safran) suppliers are being called on to make substantial efforts. Just as demand for the CFM56 reaches historic levels (more than 1,400 engines delivered in 2012), production will have to transition to the LEAP engine just three years from now, with the prospect of an even sharper increase in production rates. Aware of the hefty challenge it faces, Snecma launched the LS2R (LEAP Supplier Rate Readiness) project in November 2012. “The goal is to support the LEAP production launch, identify any difficulties on the supplier side and work together to find the best solutions,” says project coordinator Frédéric Nogatchewsky, director of industrial development.

FOCUSED SUPPORT

These efforts reflect Safran’s long-term vision. “We expect a lot from our suppliers in terms of quality, competitive pricing and operational performance,” acknowledges Xavier Dessemond. “And they have to be able to deliver over the long term. So we need to strike a balance between our expectations and their capabilities.” This is particularly important with small and medium-sized enterprises (SME), which account for one-third of all Safran contracts. “They are flexible and responsive to our needs but are also more fragile,” says Dessemond. “We have therefore committed to implementing best practices in terms of being open about our workload and meeting payment terms.”

In addition, Safran supports certain suppliers with strong growth potential, especially with applications for investment funding, such as the Aerofund III investment fund, which was set up in early 2013 and to which the Group has contributed 30 million euros. Additionally, the French Defense Ministry signed an agreement with Snecma in January 2013 to support the growth of SMEs supplying defense products and services to the Group. Lastly, Safran’s Chairman & CEO Jean-Paul Herteman endorsed a resolution by the French aerospace industry association Gifas to provide financial support for the sector and its recommendations to extend the firm order period on a rolling six-month basis.

Combined, these actions will further strengthen the trust-based relationship between Safran and its suppliers and help build lasting win-win partnerships.

Jean-Yves Le Drian, French Minister of Defense, and Jean-Paul Herteman, Chairman and CEO of Safran, signed an agreement on January 14, 2013 to facilitate the development of SMEs working for Safran.

“Safran knows exactly what our needs are”

Created in 1947, Le Piston Français is specialized in precision mechanics for the aerospace industry.

What is your relationship with Safran?

We are a long-standing supplier to Safran and especially to Snecma. In fact, we’ve been machining components for Snecma since the 1960s. Over the years, we’ve built up a close relationship. We’re taking this a step further today as we were asked to develop new parts.

What impact has Safran’s programs had on your business?

Business expanded by 25% in 2012 and we’re expecting continued growth in 2013. To meet the challenge, we are investing in new machinery, taking on more people and expanding our workshops, especially in Savigny-le-Temple in the Paris region, where we are building a new facility spanning over 9,000 square meters (96,000 sq ft).

What support do you get from Safran?

We are in touch all the time and regularly discuss our ongoing expansion. Our contacts know exactly what our needs are, for example regarding our cash flow requirements. Safran introduced us to ACE Management, the private equity firm that manages the Aerofund investment fund. We subsequently received funding to support our expansion.
Safran has announced plans to hire thousands of new employees in 2013. From recent graduates to experienced engineers and technicians, the Group is seeking to expand its workforce in all areas of business to support the ramp-up in current programs and meet tomorrow’s social and technological challenges. Dominique-Jean Chertier, Deputy Chief Executive Officer, Corporate Office, explains what’s behind this major recruitment drive.

What sort of people are you looking to hire?

Safran businesses involve very high-tech jobs. So we’re looking for top-tier engineers, as well as proficient operators. Certain profiles are particularly hard to find, especially in France. We are having difficulty, for example, recruiting engineers specialized in materials and processes, production engineering, dependability and aeronautics. The same goes for highly qualified trades, such as sheet metal workers, welders and aircraft mechanics. We’re dedicated to maintaining our technological excellence, which means we need the best talent in the field!

How do you intend to meet this challenge?

Given the scarcity of highly specialized, experienced individuals, we need to make Safran a more attractive employer brand by spotlighting our many advantages. These include our solid financial health, considerable growth prospects, a high level of cutting-edge expertise. And of course we must also offset the large number of employees who will be retiring in the years ahead.

It is indeed. This need stems mainly from our growing workload, since our order book now represents around four years of production. But several new programs are picking up pace at the same time, requiring us to constantly maintain a high level of cutting-edge expertise. And of course we must also offset the large number of employees who will be retiring in the years ahead.

Given the scarcity of highly specialized, experienced individuals, we need to make Safran a more attractive employer brand by spotlighting our many advantages. These include our solid financial health, considerable growth prospects, a high level of cutting-edge expertise. And of course we must also offset the large number of employees who will be retiring in the years ahead.

What sort of people are you looking to hire?

Safran businesses involve very high-tech jobs. So we’re looking for top-tier engineers, as well as proficient operators. Certain profiles are particularly hard to find, especially in France. We are having difficulty, for example, recruiting engineers specialized in materials and processes, production engineering, dependability and aeronautics. The same goes for highly qualified trades, such as sheet metal workers, welders and aircraft mechanics. We’re dedicated to maintaining our technological excellence, which means we need the best talent in the field!

Key programs for the future

Several programs in particular further mobilize Safran’s teams:

- **Aircraft engines**: the new LEAP engine, already selected to power the Airbus A320neo, Boeing 737 MAX and Comac C919; the Silvercrest business jet engine; and the TP400, purpose-designed for the Airbus Military A400M transport.
- **Inertial navigation systems**, which encompass a wide range of applications (air, space, ground and maritime navigation).
- The **future integrated airport checkpoint** project, drawing on Safran’s expertise in biometric identification, identity management and explosive detection systems, is designed to speed up passenger procedures in airports.
- Safran is supporting the development of “more electric” aircraft, working on new solutions in braking systems, taxiing, flight control systems, actuators, power electronics, wiring and more.

Safran plans to hire 7,000 new people in 2013. That’s impressive!

7,500 new hires by Safran in 2012. 7,000 more to be recruited in 2013

More than 15,500 résumés received on average each month in 2012

Our different companies, excellent benefits and a commitment to being an exemplary corporate citizen for the communities in which we operate. We have therefore launched recruitment campaigns in the press, on the Safran Talent website and on social media. In addition, we are maintaining close ties with target universities and engineering schools through a network of brand ambassadors and partnerships. Work-study schemes and internships are another way of strengthening awareness of the Group. Last year, our companies in France welcomed 2,000 students on work-integrated learning placements and 2,000 interns. These efforts are paying off, as more than 7,500 people joined Safran in 2012, eager to help us meet the challenges ahead.

Key programs for the future

Several programs in particular further mobilize Safran’s teams:

- **Aircraft engines**: the new LEAP engine, already selected to power the Airbus A320neo, Boeing 737 MAX and Comac C919; the Silvercrest business jet engine; and the TP400, purpose-designed for the Airbus Military A400M transport.
- **Inertial navigation systems**, which encompass a wide range of applications (air, space, ground and maritime navigation).
- The **future integrated airport checkpoint** project, drawing on Safran’s expertise in biometric identification, identity management and explosive detection systems, is designed to speed up passenger procedures in airports.
- Safran is supporting the development of “more electric” aircraft, working on new solutions in braking systems, taxiing, flight control systems, actuators, power electronics, wiring and more.

The future of the future at Safran

3D technology isn’t just for the movies! Using state-of-the-art design software, our technicians convert 2D sketches by industrial designers into 3D digital models, integrating all the calculations performed by the engineering teams, to produce a complete virtual representation of the system. In addition to industrial design skills, this job calls for a proven ability to visualize objects in space (to verify part accessibility during assembly and maintenance) and a solid understanding of assembly techniques (to ensure verification of mechanisms and tightening torque). Candidates should hold at least a two-year post-high-school vocational certificate in mechanical engineering or industrial design.

**SYSTEM ARCHITECT ENGINEER**

These engineers play a crucial part in program success as it is their job to orchestrate the process end to end. They are involved from the outset, starting with defining operational requirements. This consists in designing the overall architecture of the various complex systems, involving a host of different techniques and technologies. The next stage involves specifying system components and identifying the best partners to produce them, and then demonstrating that the end result fully satisfies the customer’s requirements. These efforts are coordinated closely with the sales teams.

This type of job is suitable for general engineers with knowledge in a broad range of areas, including mechanical, electronic, software, mechatronics, hydraulic and optronic engineering.

**NON-DESTRUCTIVE TESTING TECHNICIAN**

New materials represent a major technological challenge for the future (see article p. 13). Technicians perform non-destructive testing on metal structures to demonstrate compliance with quality requirements both at the time of construction and while in-service. Techniques include radiography and magnetic particle testing. Technicians work closely with project leaders, design teams and materials experts. Requirements for this job include a two-year post high-school vocational certificate in physical measurements or materials science and engineering, or a BSc in materials testing and analysis.
**Safran, a Preferred Partner to Textron**

Scott Donnelly was named CEO of Textron in 2009. Textron is one of the largest industrial companies in North America. Its two largest businesses are Cessna, the world’s leading manufacturer of general and business aircraft, and Bell, one of the world’s leading helicopter manufacturers. Despite the current difficult budgetary and economic environment, Mr. Donnelly remains confident in his company’s ability to grow, especially in new markets. He knows that he can count on Safran, a preferred supplier in a partnership based on innovation and technological excellence.

**Safran Magazine: How do you see the current economic situation in the United States?**

**Scott Donnelly:** Most of us in the business community do not think it’s encouraging. The United States is currently facing a number of challenges, many of them political. The difficulties in the economy over the last few years have resulted in a considerable amount of debt, and I don’t think this is healthy for the long-term future of our country. Unfortunately, the budget reduction mechanism known as sequestration hardly seems appropriate to address this problem. Spending must obviously be reduced, but clearly it should be a much more thoughtful and organized process than what we’re experiencing in sequestration.

**Which markets do you consider the most important today?**

**S.D.:** We are focusing most of our business development efforts on South America and Asia, as well as certain countries in the Middle East and Eastern Europe. That’s where economies are the most dynamic and vibrant and where most of the current global wealth is being generated. Given their geographies and the sectors driving growth, many of these so-called emerging countries have to develop their transportation networks. For example, we have noticed that we are selling more and more Bell helicopters to oil and gas companies, especially for emergency medical transportation and search & rescue. These developments are fully aligned with our portfolio of businesses.

But that doesn’t mean that we should ignore the U.S. and Europe, since they are still very large and important markets. We
Interview

Cessna chose the Silvercrest engine in 2012 for the Citation Longitude, its latest bizjet.

China is enjoying fast-paced growth, especially in aviation. What is your company’s stance in this market?

S.D.: In the very global aviation market, China’s growth represents, first and foremost, tremendous opportunities for a company like ours. Not only is this country creating wealth, but they are also seeing a growing need for transport systems. For example, business aircraft and rotorcraft are underrepresented in a country that is so large and with such a dynamic economy. We have therefore made significant investments, along with partners and through joint ventures, to gain access to these markets and serve Chinese clients under the best possible conditions. While the country’s economy is very dynamic, it is also fiercely competitive!

Textron and Safran have been working closely together for several years. How would you describe the bonds between your companies?

S.D.: The relationship between OEMs and suppliers in our industries is always extremely important. For example, a significant share of the technological innovations and solutions that enable us to reduce our costs and improve performance are provided by our suppliers and partners. And this naturally applies to Safran, a company that has developed many technologies that we can utilize in our next-generation aircraft platforms. The selection of the Silvercrest engine for our Citation Longitude bizjet is an excellent example. Whether in terms of fuel efficiency, reliability or durability, this new engine offers technological advantages that make the aircraft very attractive to potential customers. Also worth mentioning are Safran’s innovative powerplants for our prop planes, not to mention other projects now in the pipeline.

To what extent is Textron interested in “package” type offerings?

S.D.: For each of the key component technologies that we are looking at for our new aircraft, we encourage our suppliers to offer the maximum value that they think would be solidly established in the business and general aviation markets, while these are not our legacy markets, they are an integral part of our growth objectives, whether for business jets or for general aviation engines, through our subsidiary SMA. Penetrating the engine market for super mid-size business jets has long been one of our strategic objectives. For a recent entrant like Safran, the selection of our Silvercrest engine by a famous company like Cessna is obviously an excellent starting point. Now it’s up to us to make Silvercrest a major asset for the Citation Longitude, and a key factor in its success.

The same principle applies to SMA, whose SR305 engine was chosen for Cessna’s Turbo Skylane JT-A. By giving SMA its first significant production contract, Cessna becomes a pioneer in the use of compression ignition engines in the general aviation market, and opens the doors to this market for our subsidiary.

What are Safran/SMA’s relations with the parent company Textron?

Even if Cessna is a new customer, we’re still in familiar territory. We’re dealing with a very professional aircraft manufacturer, and there is mutual understanding, which is very important if we are going to work together successfully. Well beyond simple working or contractual relations, it’s the quality of personal relations that is a key to success. Whether one is a supplier or a customer, above all you have to be partners. And that is the case with Textron, since we have long known and appreciated their senior executives. Scott Donnelly, of course, had a long and brilliant career at GE (our partner in CFM International), where he was the head of GE Aviation, and Scott Erneit, president of Cessna, is also a former leader at GE Aviation.

What are the benefits in this partnership? The benefits are in fact mutual. Cessna is an absolutely essential partner for us, since they give us the opportunity to show our capabilities as an engine manufacturer in these new market segments, namely business and general aviation. For Cessna, we’re bringing new products to their markets. Silvercrest will be by far the most modern and highest-performance business jet engine in its class. We believe that this engine will provide a considerable advantage for the aircraft it powers, in terms of performance, range and dispatch reliability, thanks to its low fuel consumption and emissions, and ease of maintenance. In the general aviation market, the SR305 boasts significant reductions in fuel consumption and operating costs, which will drive the success of the Turbo Skylane JT-A.

“The Silvercrest engine for our Citation Longitude bizjet is an excellent example. Whether in terms of fuel efficiency, reliability or durability, this new engine offers technological advantages that make the aircraft very attractive to potential customers.”

Pierre Fabre
Chairman and CEO of Snecma (Safran)

“How would you describe Cessna as a customer? Cessna is both a new customer and a very important one for us. First of all, they are solidly established in the business and general aviation markets, while these are not our legacy markets, they are an integral part of our growth objectives, whether for business jets or for general aviation engines, through our subsidiary SMA. Penetrating the engine market for super mid-size business jets has long been one of our strategic objectives. For a recent entrant like Safran, the selection of our Silvercrest engine by a famous company like Cessna is obviously an excellent starting point. Now it’s up to us to make Silvercrest a major asset for the Citation Longitude, and a key factor in its success. The same principle applies to SMA, whose SR305 engine was chosen for Cessna’s Turbo Skylane JT-A. By giving SMA its first significant production contract, Cessna becomes a pioneer in the use of compression ignition engines in the general aviation market, and opens the doors to this market for our subsidiary.”
Safran’s engineers have already helped 300 million Indians receive a unique ID number

Thanks to the latest-generation multibiometric technology designed by Safran engineers, Anju – like 300 million other Indians – has already received a unique identification number, greatly facilitating access to social benefits. Yet another innovation from Safran that’s more than just a new technology.

safran-talent.com