Safran Electronics & Defense, a Safran high-tech company, holds world or European leadership positions in optronics, avionics, electronics, and critical software for both civil and military markets.

We have developed a full range of solutions, from individual components to complete integrated packages, for both civil and military applications. Our solutions are recognized for their reliability and designed for easy integration.

**OUR EXPERTISE**

Safran Electronics & Defense offers a wide range of support services for our systems and equipment on civil aircraft, from complete packages to tailored solutions. From design and production, to training and support, we work hand and hand with our customers. Our primary goal is to guarantee customer satisfaction by enhancing fleet availability and efficiency.

**TOTAL CUSTOMER SUPPORT**

**MISSION**

- Service management: to ensure fast turn around time (TAT)
- Spares administration: repair shops certified from level 1 to 3 with only OEM components
- Parts availability services based on advanced standard exchange, loan or pool access
- Lean maintenance: supported by flat rates or by-the-hour fees
- Product support engineering: drafts and manages all required technical publications (OM, SB, SR, etc.)
- Technical assistance & training: seasoned technicians can also be dispatched on-site to help customers operate and maintain our equipment. Training sessions are offered either in our training center or on customer premises.
PAVING THE WAY TO MORE ELECTRIC AIRCRAFT

PRIMARY & SECONDARY FLIGHT CONTROLS
Safran Electronics & Defense designs and produces next-generation flight control systems and components, ranging from cockpit controls (throttles, active side-stick units, etc.) to aerodynamic and horizontal stabilizer trim systems. These electromechanical actuators are suited to all civil aircraft (commercial, regional and business jets, helicopters). Combining high performance and reliability, our systems and equipment also comply with the latest certification standards. They ensure safe and efficient aircraft operation every time, from takeoff to landing.

FLIGHT CONTROL ELECTRONICS
Safran Electronics & Defense develops fast and reliable computers and electronic flight control units. These digital processing units send orders to the control surface actuators, and also adapt engine thrust to flight conditions (altitude, airspeed, roll, etc.), to ensure a safe, comfortable and efficient flight.

BACKUP FLIGHT CONTROLS
In case of a flight control system failure, the backup power supply (BPS) and the backup control module (BCM) take over to protect passengers and crew.

ELECTRICAL THRUST REVERSER ACTUATION SYSTEM
The electrical thrust reverser actuation system (ETRAS) helps reduce landing distance by 25% on dry runways and up to 50% on wet runways. In addition to the associated fuel savings, this increase in braking efficiency also helps to ensure the safety of the aircraft and its passengers. ETRAS comprises four actuators, a power and manual drive unit, power transmission flexshafts, a processing unit and wiring harnesses. Easy to maintain, it also eliminates the risks of leaks and seizing in conventional hydraulic control systems.

NAVIGATION SYSTEMS & SENSORS
Inertial sensors from Safran Electronics & Defense feature high performance, integrity and autonomous operation. They cover all inputs needed for flight control, including position and speed, heading, roll and pitch. Free of any export restrictions, they offer an especially compact and reliable design. Our sensors were designed from the ground up to adapt to any type of aircraft, from regional and mainline jets to business aircraft and helicopters.

- APIRS: Aircraft Piloting Inertial Reference System
- SkyNaute: inertial navigation system based on hemispherical resonator gyro (HRG)

PILOT CONTROLS
Safran Electronics & Defense designs and produces a complete range of active electromechanical controls (landing gear controls, flap/slat levers, flight deck control suite, etc.), to enhance flight safety and operational efficiency. Perfectly adapted to the latest “more electric” aircraft architectures, these controls help reduce pilot workload and improve their situational awareness and effectiveness.

- Encompasses all pilot inputs (pitch, roll, yaw, steering, braking)
- Highly modular design, for easy installation and certification
- Can be custom-tailored to each Plateform’s requirements

FLAP CONTROL SYSTEMS
HSTA
Horizontal Stabilizer Trim Actuator
SMART EMA*
For AP systems
DIRECT DRIVE
SMART EMA*
GEAR DRIVE
DIRECT DRIVE
SMART EMA*
GEAR DRIVE
DIRECT DRIVE
SMART EMA*
GEAR DRIVE
SMART EMA*
DIRECT DRIVE

HSTCU
Horizontal Stabilizer Trim Control Unit
BCM
Backup Control Module
BPS
Backup Power Supply

APIRS
Aircraft Piloting Inertial Reference System
TCA Throttle Control Assembly
FEH Fuel Electrical System

ECU
Electrical Control Unit
EHC Backup Control/Interface
ECM Backup Power Supply

ILLUMINATED PANELS & PUSH BUTTONS
COCKPIT CONTROLS
RGU Rate Gyro Unit
APIRS Aircraft Piloting Inertial Reference System
SkyNaute Inertial navigation system based on hemispherical resonator gyro (HRG)

*electromechanical actuator

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