Atech provides comprehensive support services related to all MAKRON products, including onsite and offsite training programs.

International support services include local or remote options for status monitoring and maintenance activities, allowing better autonomy in terms of operational availability, configuration control, easier customization and product evolution, through a technology transfer partnership with the ANSP or local partner organizations.

To meet all Makron solutions, contact us.





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Sky under control

# ATM SOLUTIONS

Atech, an Embraer Group Company, and one of the leading companies in the command and control systems market, known for providing technology solutions of high quality for critical decisionmaking processes, presents Makron, a complete set of Air Traffic Management solutions, gate-to-gate - from takeoff to landing, that aims to bring safety, efficiency and optimized operations.

Atech solutions for ATM market bring together full business knowledge and technical skills based on years of experience. With a unique expertise in engineering, development, system integration and situational awareness technologies, the company meets the needs of its clients, from air navigation service providers, airport operators and airlines, to military aviation and air defense agencies.

Built in accordance with the International Civil Aviation (ICAO) regulations, focused on security, reliability and intensive use of world-class technologies and innovation, Makron brings a complete and modularized set of solutions. while Atech provides services along the entire cycle of implementations, integration and support.

## ATECH BRINGS **THE SKY TO YOUR FINGERTIPS.** MEET MAKRON



Sky under control

Safety, flight time optimization, and cost-effectiveness are among the major challenges for the agencies and companies involved in Air Traffic Management (ATM).

Makron, Atech's complete set of Air Traffic Management solutions, is comprised of modularized and customizable systems that allow the ANSPs to control and optimize flights from takeoff to landing, gate-to-gate, offering maximum safety, reliability and efficiency in the use of resources.

Full control of the sky, contributing to fully safe operations: get to know the Makron family of products.

#### MAKRON | ATFM | SKYFLOW

Based on SIGMA, a system developed for the DECEA, the Brazilian ANSP, SKYFLOW puts together all air traffic information, from FPL, RPL, flight schedules, and surveillance data to meteorological information, in order to accurately project the demand and provide reliable feedback about possible unbalances of any airspace element. With its Tactical, Pre-tactical and Strategical views, SKYFLOW allows the application of the most advanced traffic management initiatives for each flow management phase.

#### MAKRON | IFPS | LEO

LEO is the initial flight plan system (IFPS) in charge of receiving flight plans and associated messages. It validates the ATS messages against ICAO rules, calculates the 4D profiles and distributes the flight plans and the associated messages to all stakeholders at the proper time. Flight plans and associated messages can be filed using mobile apps, Internet webpages, AMHS and AFTN interfaces. Flight plan information is also validated against the operational airspace database periodically in order to guarantee compliance with any dynamic reconfiguration out of the AIRAC cycles. Makron IFPS LEO identifies all AFTN addresses based on the flight plan's route and accepts extra addresses informed by the originator.

#### MAKRON | eFPL | JANUS

Flight plan submission application via iOS and Android mobile devices, which can connect to the Makron IFPS LEO or other flight plan reception system through a standard market interface. eFPL JANUS eliminates the incidence of errors, ensuring more security on flight planning messages submission (FPL, CHG, DLA and others) and offering more agility to users. If connected to IPFS LEO, it allows the users to follow in real time the approval status of the submitted flight plans.

#### MAKRON | OPMET | AURA

AURA system offers a weather information database in which airports, pilots and other personnel involved in air transportation services can consult meteorological conditions in a given area, optimizing routes and ensuring safety and predictability to the air traffic flow. AURA complies with the SWIM (System Wide Information Management) model.

#### MAKRON | AMHS | CYGNUS

CYGNUS is a high availability cluster solution aimed to receive, process, store and exchange aeronautical messages. The system is able to process around 750,000 messages per day and up to 65,000 in peak hours, for multiple users, from civil and military aviation, to navigation service providers. The user terminal has a friendly and intuitive interface, which streamlines ATS messages composition, in accordance with ICAO regulations.

#### MAKRON | ATC | SAGITARIO

Developed in partnership with DECEA, with the participation of air traffic controllers, SAGITARIO is a system focused on Air Traffic Control, which provides a set of operational tools to visualize the air traffic conditions and to support decision-making processes. The system delivers an accurate situational awareness of the air situation, and aggregates information from various types of sensors, its flight plans and weather information in order to provide the air traffic controller a widespread visualization of the environment, promoting efficient and agile decision making.

#### MAKRON | ATC SIMULATION | PLATAO

PLATAO is an ATC simulator for training and recycling skills and knowledge of air traffic controllers. Operating in either local or remote mode, it enables simulated exercises to be created for a series of complex operational scenarios, thus generating constructive results for air traffic controllers' operational assessments as well as operational data for airspace validation.

### MAKRON | SWIM | AQUILA

Developed to meet ICAO's demands for harmonization and interoperability among Air Traffic Management systems around the world, AQUILA enables real-time sharing of flight plan data, aeronautical information and weather among airspace navigation service providers, as well as general aviation users around the world, through an international standard interface consistent with the SWIM (System Wide Information Management) concept.

### MAKRON | AFIS | COSMOS

The R-AFIS COSMOS is a system that enables aerodromes from remote locations to provide flight information services (AFIS) for general aviation in a secure and optimized way. AFIS COSMOS can be operated remotely – that is, the operator does not need to be physically present at the location where the service is being provided. The system provides weather information, flight plans and airspace surveillance through an integrated and intuitive graphical display.