


# APRON MANAGEMENT ACHIEVED IN A SAFE AND ORDERLY WAY

Airport apron management can be improved in several ways with the use of the latest ADS-B technology combined with data analysis tools

Siarhei Miranovich, CEO, Ansart

 The flight starts at the parking area of the departure airport and ends at the same place at the destination airport. Airport operators and ANSPs provide flight management during operations in their area of responsibility. They also collaborate in managing the ground traffic that occurs in the airfield, which is defined by ICAO as “the part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron”.

ANSPs are responsible for surface operations and air traffic controllers manage clearness, instructions and collision prevention in a non-A-SMGCS (Advanced Surface Movement Guidance and Control System) environments. They also manage separation between aircraft, and aircraft and vehicles in A-SMGCS environments.

The apron area is the responsibility of the airport operator, and apron traffic management requires the regulation of the activities and movement of aircraft, vehicles and personnel in this area. This is called apron management services (AMS).

## Does AMS need automation?

Apron management services vary at different airports, which have apron areas with different configurations and with different



Above: An ADS-B 1090 ES transponder

techniques used for operations. This is one reason why it is a challenge to provide AMS. Often, the limited visibility of the apron prevents determining the exact location of the aircraft, the situation in blind spots and parking areas.

All these aspects affect situational awareness and monitoring, making it impossible to predict and evaluate the situation correctly.

The airport operator assumes the AMS. It is responsible for movement regulation to prevent collisions between aircraft, between aircraft and obstacles, coordination of entry and exit aircraft to an apron area with the ANSP Tower Control and safe movement of vehicles and coordination of other activities. To provide all of these services, the airport operator needs an automated system to improve ground traffic situational awareness, reduce the number of incidents, and set up proper apron management.

## The solution

After many years of working with ADS-B technology, ANSART has developed an efficient and effective platform called the “Airport Ground Movement Display System” (AGMDS). The system enables the creation of a solution that automates processes related to apron management services and can meet specific customer needs while collecting data about events for analysis.

The platform’s concept is based on the tools, but not functions available to the customer. For example, instead of developing a list of predefined events, ANSART has

## ABOUT ANSART

**“ANSART is a team of professionals bringing innovative services and out-of-the-box solutions to the market,”**  
Siarhei Miranovich, ANSART CEO (right).

Starting as an outsourcing company, ANSART traces its history to 2009. Merging the best software development practices and deep ATM experience, the company designs, develops and supports automation systems and software for ANSPs and airports of all sizes. ANSART aims to bring the latest technology to its clients at a highly competitive cost and offer solutions for:

- ATC automation – from stand-alone configurations to entire ATM systems
- ADS-B-based surveillance for aircraft and vehicles
- ATCO and unit management
- Aviation communications
- ATCO training with combined radar and 3D tower simulation



developed a tool to describe them. Following up on our customer care philosophy, we have built the solution based on COTS hardware and developed web applications offered as SaaS (Software as a Service).

ANSART's AGMDS solution can work as a fully independent standalone system and as an extension for airport operators to their existing A-SMGCS system. It makes AGMDS attractive for airport operators who are willing to automate AMS and improve ground traffic situation awareness. It is also suitable for air ANSPs willing to extend existing A-SMGCS with portable devices.

**Data analysis**

Data analysis is a crucial process in decision making and forecasting when safety depends on it. By bringing high quality data to the right people, additional insights can be gained, and operations improved.

ANSART's AGMDS collects all processed data and stores it in standard formats such as



**Left:** The AGMDS platform can be standalone or integrated into an existing system  
**Below:** A mobile traffic situation display installed in a vehicle



.xls or .csv, making it available for analysis, to calculate any necessary KPIs, to increase the speed of the problem identification, and to build efficient decision making.

**Benefits of the AGMDS platform**

AGMDS is a forward-looking solution for the digital transformation of business processes. It improves customers' operational, technical, administrative and financial aspects. The

platform helps to increase efficiency and productivity, improves resource management, build resiliency and agility, develops innovations, creativity and collaboration, expanding transparency and visibility.

On top of that, the SaaS solution enables the optimization of investments by cost migration from CAPEX to OPEX. ANSART's AGMDS and other products can be seen in its showroom or demonstrated online. ❖



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**Air Traffic Management solutions**