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# Q&A AIR TRAFFIC MANAGEMENT

## How does Saab ATM systems make airports more safe?

Saab's airport surface safety systems provide air traffic controllers with a highly accurate, real-time radar display (called an Advanced- Surface Movement Guidance & Control System (A-SMGCS)) of where aircraft and vehicles are on the airport surface in all weather conditions. Working in parallel with the surface view is a complex set of computer algorithms that are continually monitoring runway and taxiway traffic for the potential of aircraft and vehicles to collide. If these circumstances pose a safety risk, the system provides the controller with an audible alert (and an alert on the display screen) so that corrective actions can be quickly communicated to pilots. In some instances, these algorithms are also tied directly to lighting imbedded in the surface of the runway and taxiway for an added level of safety alerts direct to the cockpit.

## How does Saab ATM systems make airports more efficient?

For the air traffic controller, having an accurate radar display of surface movement, including the automatic identification of aircraft, means they can make better decisions on the most direct taxi instructions and more quickly understand the current situation on the airport surface. Since the systems typically use multiple surveillance sources, the combined radar view is highly accurate even in bad weather.

For the airline or airport operator, Saab offers a similar display system just for tracking and managing aircraft in the ramp and gate areas. This system, Aerobahn, provides an accurate picture of aircraft along with specialized tools that enable users to more proactively manage arrivals and departures. For example, if an airline sees that there are a number of aircraft already in the taxi queue for take-off, they may chose to hold a departure at the gate with the engines off (conserving fuel and reducing emissions) until there are fewer aircraft waiting to take off.

## How does Saab ATM products help the environment?

A great deal of an aircraft's harmful emissions are due to excessive taxiing and time spent on the airport surface with engines running or stopping and starting. Saab's Aerobahn system provides airline and airport operators with the insight and information needed to make better decisions about when to best have an aircraft ready for takeoff so that it maintains a smooth path to the runway with minimal stopping. This same tool allows users to hold aircraft at the gate, with the engines off. In addition to harmful CO2 emissions, this also lessens noise pollution for those living near the airport.

## What is a Remote Towers and how does it work?

The Saab remote tower product suite includes High Definition cameras and Pan-Tilt-Zoom cameras, surveillance and meteorological sensors, microphones, signal light guns and other devices for deployment at the airport. Data from these sensors are sent to a Remote Tower Center (RTC) to be displayed in real time. A controller at the RTC has the tools, in addition to live video, to operate the airport in a similar manner as he or she would in a normal Air Traffic Control Tower.

## Are there back-ups built into the Remote Tower system?

The camera systems have a whole suite of features to ensure a clear and unobstructed view. Each camera tower has a set of fixed cameras to provide a wide view and a dedicated freely adjustable camera for viewing details. This is called a pan, tilt and zoom or PTZ camera. If one of the fixed cameras is disabled, the PTZ camera can be positioned to replace its function until repairs are completed.

If the system becomes unavailable, then this is no different when other airport equipment fails. There are procedures that the controllers fall back to to deal with this kind of situation, e.g. reroute traffic to other airports nearby.

## Does this technology replace people?

The technology is in no way meant to replace people. The human in the loop is essential to traffic safety. Saabs systems enable to better maximize their professional resources in an economic manner.

### How does an airport benefit from a Remote Tower?

Remote Tower services can enable an ANSP to more economically replace older tower facilities with remote technologies, provide tower services to a new airport without building, equipping and staffing a tower, merge the ATC of multiple (typically low traffic) airports to be operated from one RTC, or provide backup to existing ATC in the event of an emergency.

All the applications enable safe operations while reducing costs.

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