ACEMAX

Key Features

> Open and modular architecture

> Extensive HMI configurable at the CWP on a per-user basis

> Collaborative labelling - manually assigned labels are immediately visible on all CWPs

> Extensive logging and statistics of all activities

> Statistic functions enabling evaluation and optimisation

> Data archiving and replay functions

> Automatic label acquisition both with and without SSR

> HMI can be configured to meet the specific needs of any airport situation

> Easy to edit airport maps with editor feature

Benefits

> Increased capacity and enhanced safety on the movement area

> Capacity and safety can be maintained under all weather conditions

> Enhanced efficiency and safety when integrated with Electronic Flight Strip System

> Easily expandable to meet and support future requirements and procedures

ACEMAX

SAFECONTROL SUITE

ACEMAX	OPTAMOS
DIFLIS	DECLOS
INFOMAX	AIRMAX

ADVANCED SMGCS

Overview of all
Ground Movements

Enhance your safety

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AIR TRAFFIC SOLUTIONS

ACEMAX

HOW DOES THE
A-SMGCS WORK?

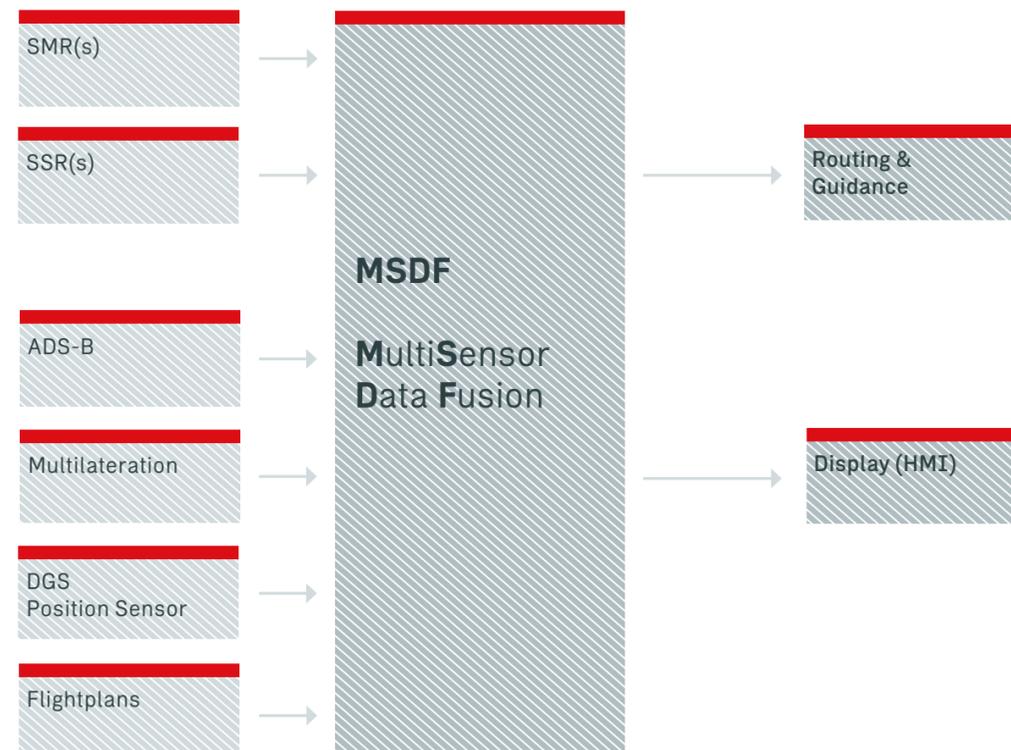AN ADVANCED AND INTEGRATED
SURVEILLANCE SYSTEM

The Challenge

Airports represent the bottlenecks of civil aviation. With an annual 5% increase in ground movements, many airports are facing a challenge to meet future demand. Environmental restrictions often prevent new airport projects and airport extensions from taking place; the approval process for such building works can take a significant time to complete. One way to cope with this situation is to maximize capacity of existing runways and taxiways while at the same time maintaining highest level of safety. This includes low visibility operating conditions where it is essential to monitor traffic at the runways and aprons. Flight schedules are not based on weather situations and this is a critical performance factor for airports. Airlines and passengers expect a reliable service level independent from weather.

The AviBit Solution

ACEMAX - as a part of the SafeControl Suite ATM package - is the key to reliable continuous service. ACEMAX not only supports high traffic capacity, it can also significantly increase the safety level at any airport under all weather conditions. There is no doubt that the number of runway incursions, near collisions and other unwanted phenomena can be significantly reduced when using ACEMAX as your A-SMGCS.

Introducing ACEMAX – an Advanced Surface Movement Guidance and Control System

SMR(s)

SSR(s)

ADS-B

Multilateration

DGS
Position Sensor

Flightplans

MSDF

Multi**S**ensor **D**ata **F**usion

Routing & Guidance

Display (HMI)

Multi-Sensor Data Fusion (MSDF) is essential for accurate surveillance of all airport traffic. It combines data from multiple radar and other surveillance sensors into a reliable and precise presentation of the traffic situation. Data from the following surveillance sensors can be integrated:

> Primary ground radar data (Surface Movement Radar SMR) is used to identify aircraft and vehicles on the runway and taxiway. All available radar data is incorporated to track all moving targets on the airport.

> Secondary Surveillance Radar (SSR) data provides approach information for incoming aircraft

and initiates ground movement tracking procedures.

> Flight plan data matches SSR codes with call signs, stand and gate information, aircraft type etc.

> Multilateration and ADS-B Systems can be integrated into ACEMAX to provide data and positions from transponder-based systems.

> Docking and Guidance system for surveillance close to terminal apron areas.

> Vehicle tracking for displaying apron vehicles equipped with Mode-S transponders at every user terminal.

Labelling and Tracking

Incoming traffic: Transmitted SSR data ensures that approaching aircraft are tracked to the runway. When an aircraft is detected a few metres above ground level by the SMR, a new ground track is initiated for landing aircraft. SSR-code, SMR data and flight plan data are matched and assigned to a track that displays the aircraft movement until the designated parking position has been reached.

Departing traffic: This can be automatically labelled but requires a M-LAT System to achieve fully automatic identification. If such a system is not present, tracking can be manually initiated and labels can be manually assigned using a drag-and-drop function from a list of flight plans.

Multi-Display: ACEMAX is a multi-display system, labels entered at any CWP will appear consistently on all other positions – even remote displays at different units.

HMI: The HMI is specified in cooperation with active controllers, working on a day-to-day basis with the system. Controller satisfaction with the ACEMAX demonstrates the high usability of the system in many worldwide installations.

SMR Video Extraction and Radar Tracking

SMRs are one of the most important surveillance systems at an airport. The ACEMAX system is capable of interfacing with any existing radars through a highly advanced and sophisticated Radar Video Extractor (RVE) hardware module that delivers the following features:

> The RVE can be linked to analogue or digital radar interfaces, providing the customer with maximum flexibility regarding their choice of radar.

> The RVE generates output information that can be transmitted on conventional local area networks and requires little bandwidth compared to conventional video distribution systems.

Safety Logic

During peak traffic, Air Traffic Controllers require assistance to avoid possible ground traffic conflicts. The ACEMAX tracking and labelling features ensure that a controller is provided with functionality to reach higher situational awareness. ACEMAX provides conflict detection and alert features to support day-to-day operations in a tower. The following provides an outline of the most prominent features:

> Stop bar crossing alert
> Runway incursion alert
> Area infringement alert

This and many other features will be configured in accordance with local procedures and requirements.