

ACEMAX ARG

Key Features

- > Automatic Route Creation based on flight plan data
- > Automated Guidance, e.g. 'Follow the Green' concept
- > Conflict Resolution
- > Deviation Monitoring
- > Online changing of Taxiway Configuration

Benefits

- > Reduced taxi times, especially during low visibility conditions
- > Reduced fuel burn and reduced emissions of greenhouse gas
- > Reduction of route deviations
- > Enhanced safety and enhanced situational awareness for pilots and Air Traffic Controllers
- > Increased capacity and enhanced safety on the movement area
- > Easily expandable to meet and support future requirements and procedures

SAFECONTROL SUITE

ACEMAX
DIFLIS
INFOMAX

OPTAMOS
DECLOS
AIRMAX

ACEMAX ARG

ADVANCED ROUTING AND GUIDANCE

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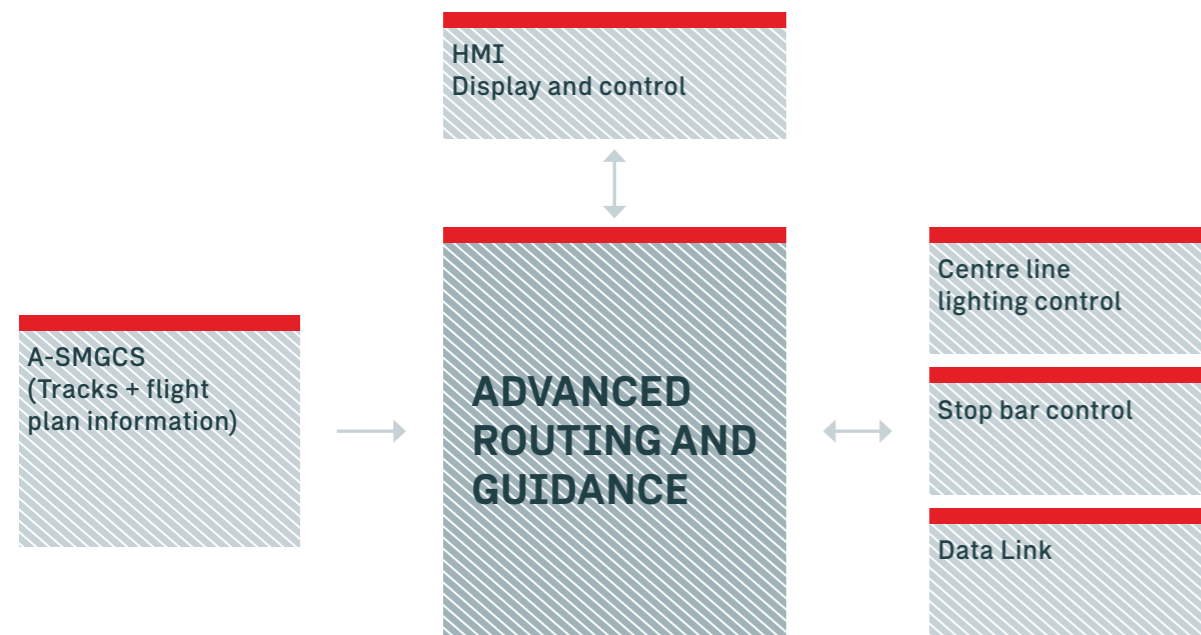
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HOW DOES ADVANCED ROUTING AND GUIDANCE WORK?



A steady growth in airport ground movements will lead to capacity bottlenecks and will increase the risk of accidents at airports with high traffic volumes. Routing and Guidance increases safety through enhanced situational awareness for Air Traffic Controllers and expands the Safety Net with conflict resolution and deviation monitoring. Short taxi distances and reduced taxi times will

not only increase the efficiency of an airport's taxi operations, it will also decrease the environmental impact of flight operations.

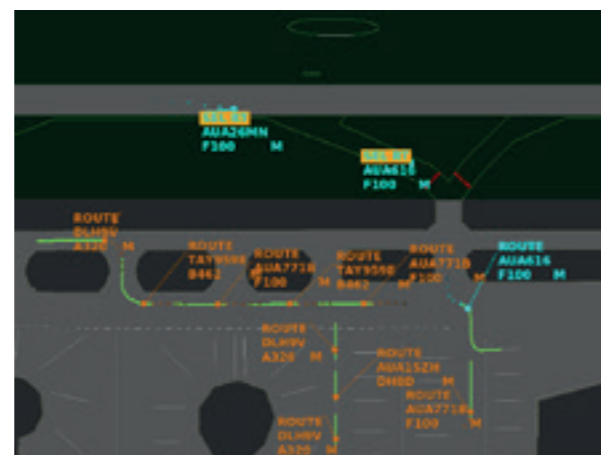
AviBit's Routing and Guidance solution has been developed as an integrated part of the AviBit A-SMGCS (AviBit ACEMAX) and to support the application of the 'Follow the Green' concept.

Routing

AviBit's Routing and Guidance provides a state-of-the-art routing algorithm to find the most appropriate route for each mobile by taking the following criteria into consideration:

- > Route Length
- > Aircraft Wingspan
- > Mobile Weight
- > Allowed Taxi Directions
- > User-defined segment weights

From the design concept it was always the aim to integrate the functionality in an intuitive, simple and non-intrusive manner into Air Traffic Controllers workflow. The Routing function is located directly in the A-SMGCS label of a mobile to avoid cluttering the display.



FIND THE MOST APPROPRIATE ROUTE FOR EACH MOBILE

Guidance

Using the centre line lighting for guidance of mobiles is most effective when single-lamp control is supported by the airfield lighting system. The centre line lights are turned on for a specific distance in front of a mobile and turned off behind it. In addition, the guidance module can control stop bars. Therefore the pilot or driver of a mobile only needs to follow the green lights and is thereby guided to its destination. Furthermore, it will be possible to

provide the route via Data Link directly to an aircraft. Single-Lamp Control systems are already available and can be provided by Safegate Group.

If surveillance data for a mobile is unavailable, the system will light the whole route and Air Traffic Controllers may track the progress of the aircraft or vehicle.

Conflict Resolution

The system continuously monitors the progress of mobiles along its prescribed route. When the system determines that two or more mobiles will arrive at the same intersection at a similar instance in time, the system anticipates a conflict. In this case the mobiles are prioritized according to a set of rules to be defined individually for each airport. The system also includes functionality to prevent nose-to-nose deadlocks.



Deviation Monitoring

The route deviation monitoring is a separate function that continuously checks the conformance of mobiles with their respective assigned routes. When a deviation occurs, an alarm will be raised and the system may offer recovery options such as rerouting from the current position or changing to untracked mode.



Areas of Responsibility and Aerodrome Configuration

The AviBit Routing and Guidance supports splitting the manoeuvring area into smaller areas of responsibilities (AOR). Each AOR can be assigned to a different Air Traffic Controller.

The configuration of taxiway directions and runways in use can be configured on-line, e.g. to reflect one-way operations. These aerodrome configurations may be saved and loaded for reuse, e.g. in case of runway configuration changes.

