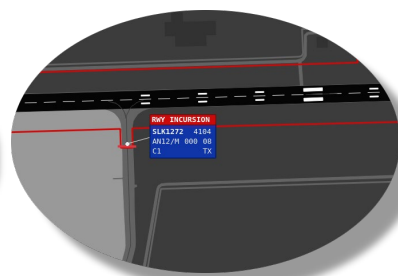
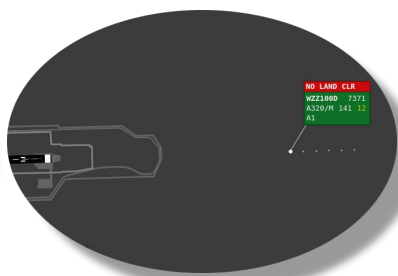
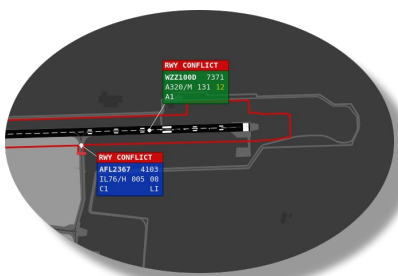




# A-SMGCS

*Advanced Surface Movement Guidance & Control System*

*Supports ANSPs in providing a safe and efficient aerodrome control service.  
Can be integrated into most tower environments.*



- *Fully compliant with ICAO and Eurocontrol requirements*
- *Ground safety nets (GNET) including RIMCAS*
- *Highly configurable – perfectly tailored to each Customer*
- *EFS Integration*



## Operation

Tower and Ground Controllers benefit most from A-SMGCS, as they control and guide the traffic on the surface of the airport in all visibility conditions. Situational awareness is improved by more accurate identification and positioning of aircraft and vehicles on the surface, while the integrated alerting system provides the necessary information for the Controller to take remedial action where required.

Routing function proposes ground route, supports the controller in modifying it and displays aircraft's adherence to it.

Our specialist expertise allows seamless integration with third party systems such as AGL control systems, datalink providers, gate management systems etc.



## Surveillance Data

Surveillance data is collected from sources such as surface movement radar and multilateration. ADS-B and TIS-B identification of vehicles can also be presented, allowing enhanced situational awareness.

Runway incursion areas can be defined according to requirements and are monitored using surveillance data. Any detected breaches of safety rules trigger an alert, and these alerts are presented to the appropriate operators.



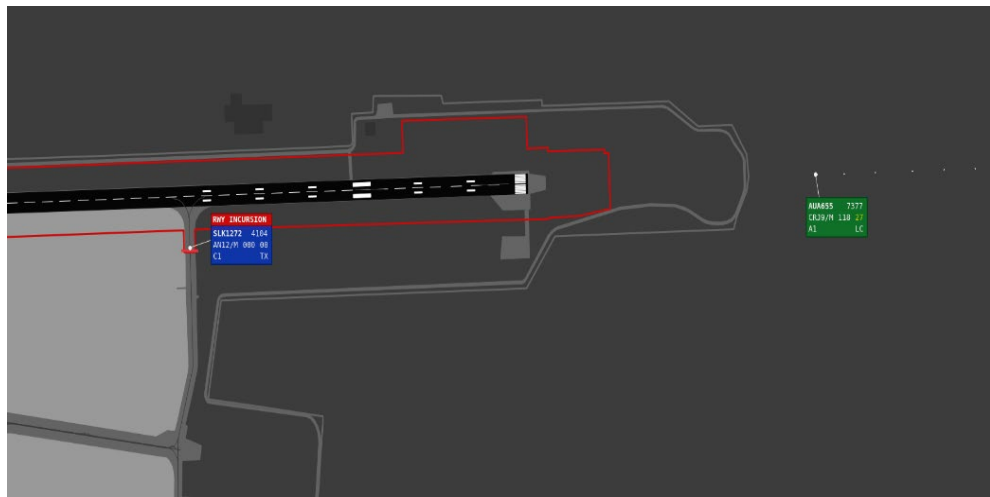


## ATC Functions

**Controller HMI:** an air/ground situation display can present the surface movements as well as incoming approach and en-route traffic via a secondary surveillance window. The system displays the ground map and environment whilst presenting mobiles (i.e. aircraft and vehicle) and if necessary, safety net alerts.

**Alert Function:** provides visible and audio alerts to notify the controller of safety violations.

**Routing:** cleared and actual completed route is visible on the ground situation display with input mechanism for editing routes.



## Main Operational Features

Flight plan data is presented, and operator interaction is performed in electronic strips lists and labels.

HMI is designed to present only the actually required data while additional data is easy to retrieve, “a mouse click away”. Electronic strips lists and labels are designed to support control of the air traffic in a paperless environment.

Each flight plan is dynamically updated based upon controller input of clearances/instructions given verbally or via datalink e.g., departure clearance (DCL). Input facilities are available in any of the flight’s HMI objects.

Internal co-ordination is performed silently through system functions, including that co-ordination between controllers in tower and approach.

Coordination with adjacent centres is performed by means of OLDI/AIDC where such connections are available.

The dynamic handling of the operational configuration allows a highly flexible use of the airspace. Reconfiguration of sector jurisdiction is handled in a decentralized manner. The system supports on-line reclassification of sectors.



## Technical Features

### *Commercial hardware and software*

- COTS workstations with monitor(s), keyboard and mouse
- Fault-tolerant servers
- Redundant LAN
- Unix / Linux operating system
- Application software is in C, C++ and ADA

### *General Design aspects*

- Client/server concept
- Open system architecture
- Distributed processing
- Fault-tolerant hardware and software

## Functionality Overview

Three levels of functionality are available which can be chosen according to requirements:

### Level 1

- Non-cooperative (e.g., surface movement radar) and cooperative (e.g., multilateration) surface surveillance is fused to system tracks and presented to ATCOs and/or airport operators on an Air/Ground situational display

### Level 2

- As above, with the addition of safety nets for monitoring and control functions to alert the ATCO when runway incursions or area intrusions occur in the airport manoeuvring area

### Level 3

- Implements routing services on the movement area as well as improved planning for use by ATCOs

### Level 4

- Guidance functionality is planned to be implemented.