DFS Aviation Services

A brand of experience

Surface Manager (SMAN)

Your standardised component for SMGCS services (3 & 4)

Introduction

The DFS Surface Manager SMAN provides A-SMGCS (Advanced - Surface Movement Guidance and Control System) services, which meet the EUROCONTROL specification for A-SMGCS services, such as Routing, Guidance and Airport Safety Support (Conflicting ATC Clearances (CATC) and Conformance Monitoring (CMAC)). The Surface Manager provides its services exclusively through the tower middleware and consists of a number of (micro-)services. The different services communicate amongst each other in exactly the same way they communicate with the world outside of SMAN, namely via their service interfaces offered through the tower middleware. The services can be deployed and executed independently from one another, potentially on different host machines, or even in a cloud or data-centre environment.

Features

SMAN can either be used as a standalone component or as part of the DFS PHOENIX ATM system thanks to standardised interfaces. It offers the following services:

– The **Routing Service** generates individual routes for mobiles based on the trajectory start and end points and the known constraints such as standard taxi routes and taxiway closures. In most cases, these trajectory points for aircraft are the assigned runway holding point and aircraft stand, or for vehicles, two positions on the movement area.

– The **Guidance Service** provides visual information to flight crews or vehicle drivers to allow them to follow a defined route. The Guidance Service uses the Routing Service in conjunction with controller inputs to allow the automated switching of taxiway centreline lights (TCL) and/ or stop bars. The Guidance Service improves the movement of mobiles on the movement area and reduces the controllers' workload.

– The **Airport Safety Support Service** provides an automated alerting service to controllers. It detects and triggers Conflicting ATC Clearances (CATC) and Conformance Monitoring Alerts for Controllers (CMAC).*
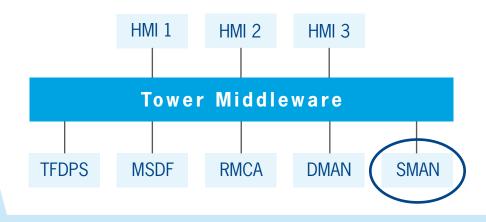
*Parts of EUROCONTROL's official A-SMGCS description

Benefits

– Provides advanced services for SMGCS Level 3 and 4 to prepare your airport for rising air traffic

– Developed in-house at DFS by ATM operational experts for ATM experts

– Meets the high safety requirements of a modern surface movement management system

– Implements the ATM functionalities required by Commission Implementing Regulation (EU) No 716/2014 (PCP)

– Conforms with EUROCONTROL Specification for A-SMGCS services

– Backed by SESAR R&D (SESAR validations 2012, 2014, 2015, 2018)

– Offers a modular, service-oriented software architecture

– Developed on the basis of the latest software standards (cloud ready)

References & Customers

– The software is under development. Its implementation is planned for the four largest DFS tower locations in Germany (Düsseldorf, Frankfurt, Munich and Berlin).

– SMAN is perfectly tailored for medium-sized and international airports as well as ANSPs that are responsible for airport ground traffic and which follow the EUROCONTROL specifications for surface movement.

The server-side software component is also perfectly suited for larger integrated tower systems:

| HMI 1 | HMI 2 | HMI 3 |

Tower Middleware

| TFDPS | MSDF | RMCA | DMAN | SMAN |