

ATC Simulators

Heading for new horizons



DFS Deutsche Flugsicherung

Simulations shaping the future are core expertise of DFS

A modern simulation infrastructure is a prerequisite for successful initial and continuation training and developing modern procedures in ATM. For many years, DFS Deutsche Flugsicherung GmbH – the German ANSP – has been using and developing its own simulation infrastructure for its own benefit and for the benefit of its customers.

The new generation simulators put DFS in the position to operate one of the largest and most advanced simulation facilities for training, research and development and for additional purposes in Europe at its Academy in Langen.

Tower and en-route simulators are also put into practice for research and development purposes. Simulation has proven to be a valuable tool for creating and validating operational procedures, assessing human aspects within the scope of team resource management, and introducing new systems and associated applications or conducting research concerning human-machine interfaces.

Functional adaptations of the simulators to new operational developments can be made in-house at DFS. DFS is ready to meet your standalone radar, tower and en-route simulation needs in a turnkey fashion and is able

to adapt the system to each customer's individual requirements. Services provided range from project management, the installation of the system, the maintenance throughout the lifecycle of the system as well as the training of the operational personnel.

NEWSIM – DFS new generation ATC simulator

The DFS en-route simulator NEWSIM is a real-time simulation system for the training of en-route and approach controllers. The en-route simulator provides high-fidelity standalone or embedded simulation of en-route, Terminal and Precision Approach ATC environments.

The DFS en-route simulator therefore offers both trainees and experienced air traffic controllers the environment they are familiar with from their daily work with advanced ATM systems in the control centres. Realistic training of all procedures applied in approach and area control can be performed. With NEWSIM, DFS provides an optimum training environment.

The en-route simulator is used in the DFS Air Navigation Services Academy and in four control centres for refresher training of ATCOs, as it is adapted to the operational system and can even be used for simulated traffic. Additionally, it works for emergency training purposes together with Lufthansa, German Airlines.

Thanks to a user-friendly tool, it is easy to prepare and perform exercises. All necessary steps – from establishing airspace and setting up flight routes to defining flight plans – can be carried out using only one tool. Moreover, the data preparation of NEWSIM has a preview function that lets the user view the entire exercise in advance. All exercises are saved in a central database and can be retrieved at any time. As a result, it is possible to start the same exercise at several simulators at the same time. It is possible to simulate any desired airspace structure.

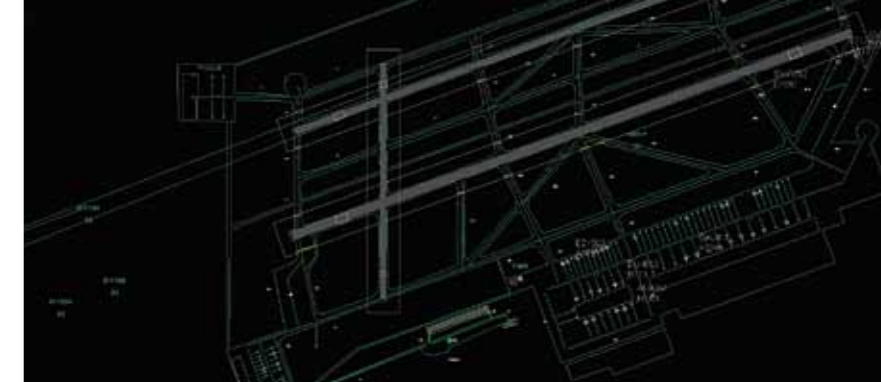
NEWSIM includes a Voice over IP System for radio and telephony communication. Voice Recognition and Response is also integrated so that the system can be used without simulation pilots.

Key features – NEWSIM

- Approach and en-route control simulation capability
- User-friendly tool to prepare and perform exercises
- Standard interfaces (ASTERIX, OLDI, AFTN, SIP)
- All software PC based using SUSE Linux Enterprise Server 10/11 or RedHat Enterprise Linux 5/6

TOSIM – DFS new generation tower simulator

TOSIM is a real-time simulation system, supporting the realistic training of air traffic controllers in a combined apron, tower, approach and en-route environment. It provides a 360° panorama in the 3-D version and a bird's-eye view in the 2-D units.



TOSIM – DFS new generation tower simulator

The realistic view of the simulated airport, the accurate motions of aircraft and the reproduction of actual working positions significantly improve the quality and efficiency of all types of training. The available components allow for simulations with realistic workloads and are supported by analysis tools providing an online prognosis of how much traffic can be managed and an offline report stating relevant figures needed to document the results of a simulation.

In addition to the tower simulator being a key component in training air navigation services personnel, it also offers excellent conditions for training apron controllers. It is possible to vary the angle of view onto the respective apron. Additional training airports for specific purposes and real existing airports are available for pre-OJT (on-the-job training) and proficiency training. It is possible to simulate any airport once the visual and simulation databases are created.

Key features – TOSIM

- Apron, tower, approach and en-route control simulation capability
- Complete toolset for development of site and scenario data
- Up to 360° projection (rear/front) with DLP projectors or on LCD monitors
- All software PC-based using Microsoft Windows 7



Key features – General

- Small (2-computer) to large configurations (128-computer) supported
- Realistic aircraft performance model
- Modular software
- Intuitive HMI (Human Machine Interface) for pilot and exercise control
- Software designed to be easily adapted to actual controller and supervisor HMI
- Controller and supervisor HMI
- All application software is a joint development between UFA Inc. and DFS



NEWSIM – DFS new generation ATC simulator

Imprint

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