



Airport and Control Center Simulator (ACCES)

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The Airport and Control Center Simulator emulates a management centre with working positions for the various operators at an airport.

The operators can avail of different support systems at their working positions depending on the application. The information that is relevant to all participants is shown on the display wall.

ACCES can be used to assess management processes in different application areas, with the focus being on airport operations management. In addition to support tools available to the ACCES operators, different simulations can be used for the assessments. For example, it is possible to simulate aircraft and surface movements, the ground handling process up to the entire arrival to departure process chain at the airport, as well as the guidance of unmanned aerial vehicles and other processes. It is also possible to integrate tactical and strategic planning tools into the simulation. Systems of partner companies can be integrated and assessed via clearly defined interfaces.



Flexible operator working position setup

ACCES can be operated in connection with the other simulators of the DLR Institute of Flight Guidance and with external partners via standardised interfaces.

Research areas

Airport management

The procedures for the collaborative planning and optimisation of airport processes are assessed, involving all actors. In this field, the ACCES has been established as a unique and powerful validation environment within the European SESAR programme. As its core, it uses the Airport Management Simulation Platform, a human-in-the-loop simulation and validation environment. Early evaluations of human decision-making in the airport management multi-stakeholder domain can also be addressed, using the serious gaming platform D-CITE.

Aviation management

Concepts are assessed concerning the strategic handling of large-scale disturbances in air traffic, such as resuming air traffic following a wide-ranging airspace closure.



Collaborative airport management validation

Control and operation of unmanned aerial vehicles

In the future, the guidance of unmanned aerial vehicles is to be integrated into mission control centres. Potential services and application areas of such aircraft are being researched and analysed.

Technical background

The Airport and Control Center Simulator features several operator working positions with comprehensive and flexible equipment systems. Each working position is equipped with monitors and input devices that can be connected to different computer systems as required. This enables the working positions to be re-configured quickly.

Information that is important to all actors is shown on a display wall. In addition, a central display control computer allows information from various sources to be compiled, such as the screen contents and video signals. Different setups can be saved as layouts and retrieved as required at the touch of a button.



Communication with external stakeholders

Air Traffic Validation Center

Simulators, sensor systems and flight testing equipment together form the Air Traffic Validation Center of the DLR Institute of Flight Guidance. The entire center offers researchers the right tools for testing and evaluating new ideas, concepts and technologies for all areas of air traffic management. It allows each development step to be continuously reviewed, from the initial idea down to the testing of prototypes and their implementation under realistic conditions.

The Institute of Flight Guidance performs long-term engineering research preceding industrial developments in the field of flight control and air traffic management. Its main areas of research are operational procedures, technology development and human-centered automation. The goal is to ensure a safe, efficient, environmentally friendly and reliable air transport system.

DLR at a glance

DLR is the national aeronautics and space research centre of the Federal Republic of Germany. Its extensive research and development work in aeronautics, space, energy, transport and security is integrated into national and international cooperative ventures. In addition to its own research, as Germany's space agency, DLR has been given responsibility by the federal government for the planning and implementation of the German space programme. DLR is also the umbrella organisation for the nation's largest project management agency.

DLR has approximately 8000 employees at 20 locations in Germany: Cologne (headquarters), Augsburg, Berlin, Bonn, Braunschweig, Bremen, Bremerhaven, Dresden, Goettingen, Hamburg, Jena, Juelich, Lampoldshausen, Neustrelitz, Oberpfaffenhofen, Oldenburg, Stade, Stuttgart, Trauen, and Weilheim. DLR also has offices in Brussels, Paris, Tokyo and Washington D.C.

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