

Tower Simulator (ACC, APP, 3D TWR, GND)

SkyRadar's tower simulator is a comprehensive training environment for ATCO and ATSEP training. It comprises 3D & 2D Tower and Ground (TWR, GND), En-route (ACC), Approach (APP) and Terminal Manoeuvring Area (TMA) operations as well as SMGCS and more.

The solution is based on the most up-to-date legislation and requirements by ICAO, EUROCONTROL and under the rules of the National Regulations (ICAO Documents, Annexes) and CNS / ATM Standards and recommendations; complemented by valuable educational tools for high training efficiency. The solution represents an operational ATC / ATM System connected to a powerful simulator.

To allow to practice modern requirements as e.g. given by EUROCONTROL SESAR, the solution allows to switch each working position between the roles of ACC, APP, TWR, Supervisor, Pseudopilot. So the complete air traffic workflow (ACC-APP-TWR) can be trained. Also, roles like the flexible attribution of “virtual control centers” to flexibly respond on peaks as required in the EUROCONTROL Single European Sky legislation can be implemented.

Description

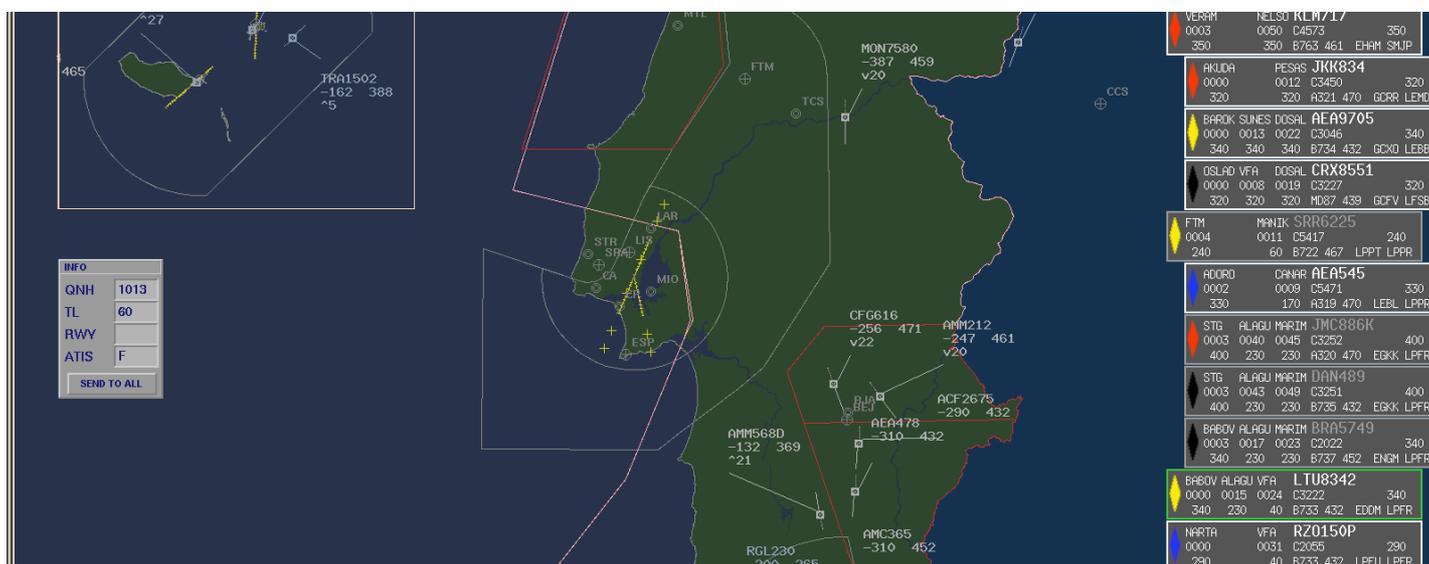
All components of the simulator are designed, developed and manufactured according to the same quality and reliability standards as operational ATM Systems. The design of the system is fully in compliance with ICAO and EUROCONTROL standards and recommendations and the manufacturer is certified by Civil Aviation Authority for design, development and implementation of Aviation Ground Facilities.

The simulator is built around a standard ATM System embracing it by sources of simulated data as if these were coming from real sensors, CFMU, adjacent sectors, meteo systems etc.

Features

- Multifunctional Working Positions 3D and 2D (ACC, APP, TME, TWR, Supervisor, Pseudopilot, Exercise Preparation Workstation)
- Containing real operational ATC Equipment, but with simulated data as equivalents of real natural data. Even data-formats and communication is compliant to interational standards, e.g., ASTERIX
- Airspace with all its properties such as AIP based elements real and fictive
- Including weather conditions
- Traffic in the airspace in the air and on the ground as an analogy of natural environment of an operational ATC / ATM System, creating illusion that it sits in its „normal“ environment and technical context.
- Generation of normal as well as abnormal / emergency situations
- ATC / ATM equipment: the system features a fully operational ATC / ATM System (with many operational references) connected to a simulation environment.
High efficiency teaching tools based on cognitive psychology research.
- Simulation of air traffic, sensors, airspace, 3D aircraft and other moving and static objects around the airport
- Each sector running controllers complemented by a suitable number of pseudopilots
- Working environment allows each working position to be set as any type provided, by flexible easy to use setup environment;
- Includes operational FDPS & SDPS

- ATC Controller Working Positions (CWPs) following the requirements of ICAO and EUROCONTROL
- Voice Switching Communication System for communication with pseudo pilot (air-ground communication) and communication between units (Tower / APP / TMA / ACC).
- Recording & Replay System
- Time Reference System
- and many more features



Airspace Map



3D Models for the Tower Simulation

The simulator system presents realistic movement of the aircraft (rate of descent, rate of climb, heading, speed) and these are easy to apply. Range of parameters and their settings allows to set the scope of aircraft types / engines / performances to the local sets. Performance envelopes may include also degraded modes of flight characteristics in order to display real capabilities of aircraft in various emergency situations.

Topics

The solution allows for a variety of training schemes for ATCO and ATSEP

ATCO Schemes

- ADV/ADI executive controller, planning controller, flight data, operational supervisor (GMC, GMS, AIR, TWR, RAD)
- Positions APP/APS executive controller, planning controller, flight data, operational supervisor (RAD, ADS, TC, PAR, SRA)
- Positions ACP/ACS executive controller, planning controller, GND controller, operational supervisor (RAD, ADS, TC)

ATSEP Schemes

- Familiarization with Air Traffic as such in the air and on the ground
- Aeronautical Information Services, AIP, impact on the traffic
- Meteorology, parameters, impact on the traffic
- Controller Working Position
- Communication means
- Navigation, equipment, functionality
- Surveillance equipment
- Data Processing
- System Monitoring & Control
- ATC operational safety
- System operational safety, degraded modes, failures
- Procedures

Parts

Hardware components (servers, screens, video-projects, VCS hardware, etc) are normally COTS equipment of a quality, suitable for operational ATC deployment in terms of functionality, MTBF and comfort. Solutions are assembled based on customer requirements. Often, when used for unit training or continuation training, the hardware should mirror the operational hardware and will be chosen accordingly.

Prerequisites

The system has been conceived for multiple purposes in [ATCO](#) and [ATSEP](#) training, comprising basic / initial training, qualification training, unit training and continuation training. This explains why there are no prerequisites needed.

Extensions

- All applications of the SkyRadar Modular Radar Training System Family

SkyRadar is the preferred choice of many aviation academies and IATA TrainAir Plus accredited institutions. Many universities and military academies use the Simulator within their qualification, education, training or research programs.

GET SUPPORT

Tower Simulators for ICAO-based ATSEP training

Get info on one of the most economical & powerful tower simulators including NAV, SUR, COM, and DATA !



GET INFO

Tower Simulators for ICAO-based ATCO training

Get info on one of the most economical and powerful tower simulators including ACC, APP, 3d TWR, GND and more !



An aerial, top-down view of a city with a grid of buildings. A large yellow transport aircraft is positioned in the upper center, and two smaller fighter jets are in the lower corners. The scene is rendered in a muted, brownish-tan color palette.

Tower Simulator, APP and ACC for Military Applications

Get information on specific simulators for military and defense applications

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