

TBA3D

Test Bed for A-SMGCS 3D

- » Test Bed for A-SMGCS (Advanced Surface Movement Guidance and Control System) 3D (TBA3D), is an airport control tower simulator which provides a test bed facility for the real time simulation and analysis of airport operations. It provides a platform to experiment with new airport layouts and operational procedures to ensure that they are both safe and efficient and to evaluate the effects of changes, emergencies and adverse conditions on airport capacity and operations.



TBA3D is specifically designed to ensure maximum flexibility for those users that require extensive simulation functionalities and provides an integrated and modular environment which is easily adaptable to any aeronautical environment in the world. TBA3D's air traffic controller and pseudo pilot stations can be further integrated with multiple instances of IDS's Advanced Aircraft Cockpit Simulator (AACCS) and procedure design tools (FPDAM) via ARINC 424 to model air traffic scenarios and to configure exercises

As TBA3D is designed to be used for experimentation and not for training, it does not require certification. This means that TBA3D

can be very flexible and allows the layout and information available to each seat to be configured for different exercises and scenarios.

Features and Characteristics

TBA3D is a multipurpose open platform providing:

- An ability to simulate many different airports
- An airport layout design/modification capability
- Traffic generation (pseudo pilots and ground vehicles) and handling services
- CWP/PWP (Controller/Pilot Working Position) design/ modification (e.g. electronic flight strips)
- Full recording/logging/playback capabilities
- Flexible design for 3D scenarios
- Capability to import MET report data

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It can be deployed in three different configurations:

- Compact desk solution with 3 “Out the Window” (OTW) screens: supervision console, 2x CWP (controllers), 2x PWP (pseudo pilot).
- Advanced 270° OTW: supervision console, 3x CWP (controllers), up to 4 PWP (pseudo pilot) and scenario editing/preparation desk.
- Enterprise 360° OTW (also suitable for 2x 180° exercises): up to 6 CWP (controllers), up to 6 PWP (pseudo pilot), a scenario editing/preparation desk and 2 supervision consoles.
- TBA3D can be interfaced with:
- Multiple instances of IDS’s Advanced Aircraft Cockpit Simulator (AACs)
- Procedure design tools via ARINC 424
- ASTERIX compatible systems
- Distributed Interactive Simulation (DIS) compatible systems

TBA3D Applications

New airport design - assessment and technical/operational specifications of:

- Airport lay-out
- Aircraft operational procedures air side, land side and ground side
- Facilities
- Airport capacity
- Optimization and expansion of an existing airport:
- Analysis of the overall performance of the airport
- Analysis of the factors and processes influencing the airport’s capacity
- Definition of a new capacity target
- Adaptation of the infrastructure and the facilities for the new target

Real time airport capacity assessment:

- Critical situations
- Unusual circumstances
- Emergencies



Benefits

TBA3D can be used with new and existing airports to:

Ensure that the airport’s designs and operational procedures are safe

Enable efficient air traffic management operations in the airspace and on the ground

Identify the operational procedures and airport layout to maximize capacity.