

GECO

Generic Experimental Cockpit



Future developments in the field of Flight Guidance and Air Traffic Management will be based on a close cooperation between the aircraft and air traffic control services. To provide a suitable evaluation and demonstration platform for the corresponding cockpit-related research the DLR **Institute of Flight Guidance** has developed the Generic Experimental Cockpit (GECO).

New systems and procedures in the Generic Experimental Cockpit

The Generic Experimental Cockpit is a flight simulator based on the Airbus A320 aircraft. Contrary to simulators designed for pilot training requiring the highest degree of realism the major objective of this Generic Experimental Cockpit is to provide maximum flexibility in order to meet different requirements in the fields of cockpit research regarding new systems with human-machine interfaces and new flight procedures.

For these purposes the Generic Experimental Cockpit offers a suitable platform with all necessary components and a sufficient degree

of realism for presentation and for realistic tests.

Integrated cockpit systems

The simulator features a collimated outside view and standard cockpit systems:

- > Complete Two-Crew-Cockpit with the associated control elements.
- > Primary Flight and Navigation Displays for each pilot as well as a Centre Display for the engine or system indications.
- > Components of the Flight Management System (FMS) like the Flight Control Unit (FCU) and Multipurpose Control and Display Unit (MCDU).
- > Several input devices for human machine interaction e.g. trackball, touch-screen and additional switches.
- > Head-Up Guidance System with Stroke and Raster-capability.
- > High detailed 3D airport models.
- > Additional systems like an Advanced Flight Management and a Taxi Guidance Systems are available.

The system architecture and interfaces

The simulator is part of a sophisticated ATM simulation network. It can be operated stand alone as well as in combination with facilities like DLR's Tower simulator ATS and the Air Traffic Simulator ATMOS. Other platforms can be connected via router, ISDN or internet. The communication protocol is based on TCP/IP and offers flexibility for integrating additional systems.

The simulation is controlled via a so-called instructor. By means of this instructor the general conditions like positioning, weather and other traffic are affected and controlled.



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