



ELDIS
RADAR
SYSTEMS

ATC Simulator PRECISION APPROACH RADAR SIMULATOR (PAR-SIM)

ELDIS ATC Simulator and its Precision Approach Radar Simulator (PAR-SIM) module provides ATC controllers with a complete solution for precision approach radar (PAR) controller training with a possibility of extension also to APP and TWR positions simulation.

ELDIS ATC Simulator can be installed at both military and civilian airports.

ELDIS Pardubice has a long experience in deliveries of PAR systems (radar and controller displays) and APP/TWR systems (radar and ERDIS ATM) as well as training solutions.

SYSTEM COMPONENTS

Basic structure of PAR-SIM consists of the following parts:

- › Air Traffic Generator – a server that generates simulated data
- › Pseudopilot – a workstation that simulates the position of a pilot who uses a graphical interface to control aircraft for landing
- › Session Manager/Instructor – a workstation that provides administration and creation of exercises, their management and basic control of exercises
- › Controller/Student – a workstation that simulates the PAR position of the air traffic controller
- › Recording and playback – a server that ensures the recording of the entire exercise and enables data playback.
- › LAN communication subsystem
- › Voice communication subsystem

MAIN CHARACTERISTICS

PAR-SIM is based on standard ATC simulator for APP/TWR purposes with PAR extension.

PAR-SIM fundamental functions:

- › simulation of target movements in the air based on the flight plan and manual control in form of:
 - › analog video signal
 - › digital data as the PAR radar plot,
- › simulation of ground clutter based on selected analog video signal data recording
- › simulation of weather clutter based on selected recording of weather video signal data
- › presentation of simulated surveillance data in a window with an overview of the situation,
- › presentation of simulated PAR data in a display of precision approach control,
- › control of selected targets movements in the air,
- › recording and replay of exercise execution,
- › management and control of exercise executions,
- › preparation of datasets and exercise scenarios,
- › output of the simulation data to the external systems.

PAR CONTROLLER SUBSYSTEM

The PAR radar display located in the ATC control tower (or in the ATC container) is designed to provide complete support to precision approach controller. The display system uses non-linear displaying of air traffic situation, in order to achieve the highest possible accuracy and resolution at the landing point on the runway.

Non-linear principle ensures that the radar controller sees clearly even small deviations in elevation and azimuth along the entire route of approach to landing and is able to inform the pilot of necessary corrections to be applied.

The display system presents both analog video signal and detected digital targets based on the input video signal.

As a support tool during the controlled landing, implemented PAR software also tracks landing targets which further enables their color discrimination based on condition, if the target is within or outside the tolerance. Deviations from the descent axis are also indicated.

EXTENSIBILITY

- › PAR-SIM is a scalable system which can be expanded with an additional number of Pseudopilot and Student positions.
- › As a part of ELDIS ATC Simulator family, Student PAR positions can be further extended by additional modules to APP and TWR positions.

