LEADINSKY SIMULATOR

AIR TRAFFIC MANAGEMENT SIMULATION SYSTEM

LeadInSky Simulator is the latest generation of the company's Air Traffic Management (ATM) Simulation solutions. Designed for basic and advanced training of air traffic controllers, it provides the ability to define and run multi-exercise sessions on heterogeneous operational scenarios.

THE SOLUTION

The LeadInSky Simulator supports executive and planner controllers training for both en-route and approach environment. In addition, it provides support to Air Traffic Management optimisation via evaluation of future workload, flow control, airspace configuration and operational procedures. The LeadInSky Simulator can also be used as a back-up system in case of unavailability of operational workstations.

LeadInSky Simulator is able to simultaneously run up to 6 exercises supporting students' assessment by recording and playing back (at selected speed) the exercise sessions.
In addition, it is able to restart the interactive exercise from each point of the playback session, so that students can repeat and correct their actions in the same exercise session.

Simulated targets are generated and displayed according to the selected exercise.
Each simulated target can be navigated by:

› Automatic Navigation Mode
  › The target is navigated within the scenario according to its programmed route
› Manual Mode
  › The target follows pseudo-pilot navigation, according to controller orders and according to ICAO Standard Manoeuvres Kinematic laws, Aircraft performances and Wind characteristics.

Targets can simulate standard manoeuvres (e.g. SID, STAR, airways, holding, orbit and intercept radial) and landing procedures following ILS.

LeadInSky Simulator also makes it possible to simulate Missed Approach procedures during the flight landing phase.
The LeadInSky Simulator generates tracks from corresponding flight plans within an airspace of 2048x2048 NM.

In addition it supports the simulation of primary/ secondary radar failures, coverage losses and wind conditions changes.

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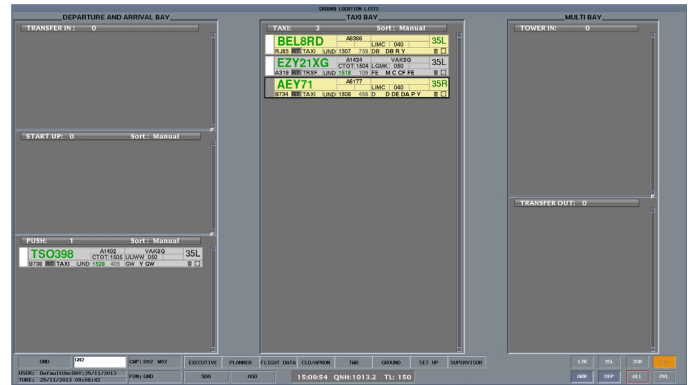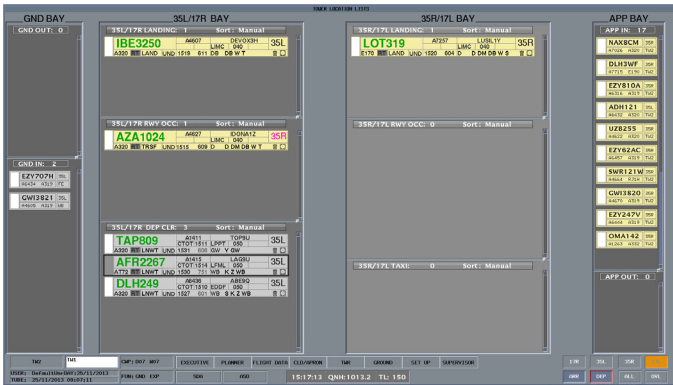
SYSTEM FEATURES

Air Traffic Management simulation tasks are supported by the LeadInSky Simulator wide and flexible configuration featuring:

› En-route, TMA, Control Tower and A-SMGCS integrated scenario definition, with surveillance data generation and flight plan management
› Maps, fixes, airways, charts, airports imported by standard databases (EAD, Jeppesen)
› Ground-Ground Coordination (OLDI)
› Air-Ground Data Link Dialogue (CPDLC)
› Short Term Conflicts, Minimum Safe Altitude Warnings, Infringements of Restricted Area and Surface Conflict Alerts
› Advanced Human Machine Interface to accomplish executive and planner tasks
› Control and monitoring facilities through Technical Supervisor
› Medium Term Conflict Detection (MTCD) capability
› Arrivals Sequencing (AMAN)
› Pseudo-pilot positions configured as "Feeders"
  › OLDI Feeder, meaning that the pseudo-pilot position is able to simulate also the adjacent FIRs;
  › SECTOR Feeder, meaning that the pseudo-pilot position can also act as controller of an unassigned sector.

The standard LeadInSky Simulator configuration includes:

› Air Traffic Generator, providing a complete surveillance scenario made by primary and secondary (conventional and Mode S) radar data plus ADS-B and ADS-C reports, all merged in single system tracks or available as by-pass flowsText Bullet 1 - 9/12
› Flight Data Processing, correlating fight plans with radar tracks
› Integrated Safety Nets (STCA, MSAW and APW)
› Graphical Pseudo-Pilot Positions, supporting the control of single flights through pilots' orders relevant to navigation, flight level/altitude assignment, speed control, transponder operation
› CPDLC fully supported dialogues between Graphical Pseudo-Pilot Positions and Controller Working Positions
› Exercise Supervisor Position, controlling the simulation sessions (freeze/restart/stop/run/playback) and supporting pseudo-pilot capabilities as well
› Controller Working Position, supporting all operational procedures as in the real environment, with the same hardware and software configuration deployed for operational mission.

The LeadInSky Simulator is available on UNIX/LINUX software platforms and COTS hardware platforms.

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