



ATON SIMULATION SYSTEM

ATON is the latest generation ATC Simulation System of SELEX Sistemi Integrati.

It has been designed for basic and advanced training of air traffic controllers, providing wide capability to define and run exercise sessions on any configured operational scenario.

ATON Simulator is flexible and powerful. It supports

- radar and planner controller training in both area and approach
- back-up system in case of operational workstation failure
- Air Traffic Management optimisation via evaluation of future workload, flow control, airspace configuration, operational procedures

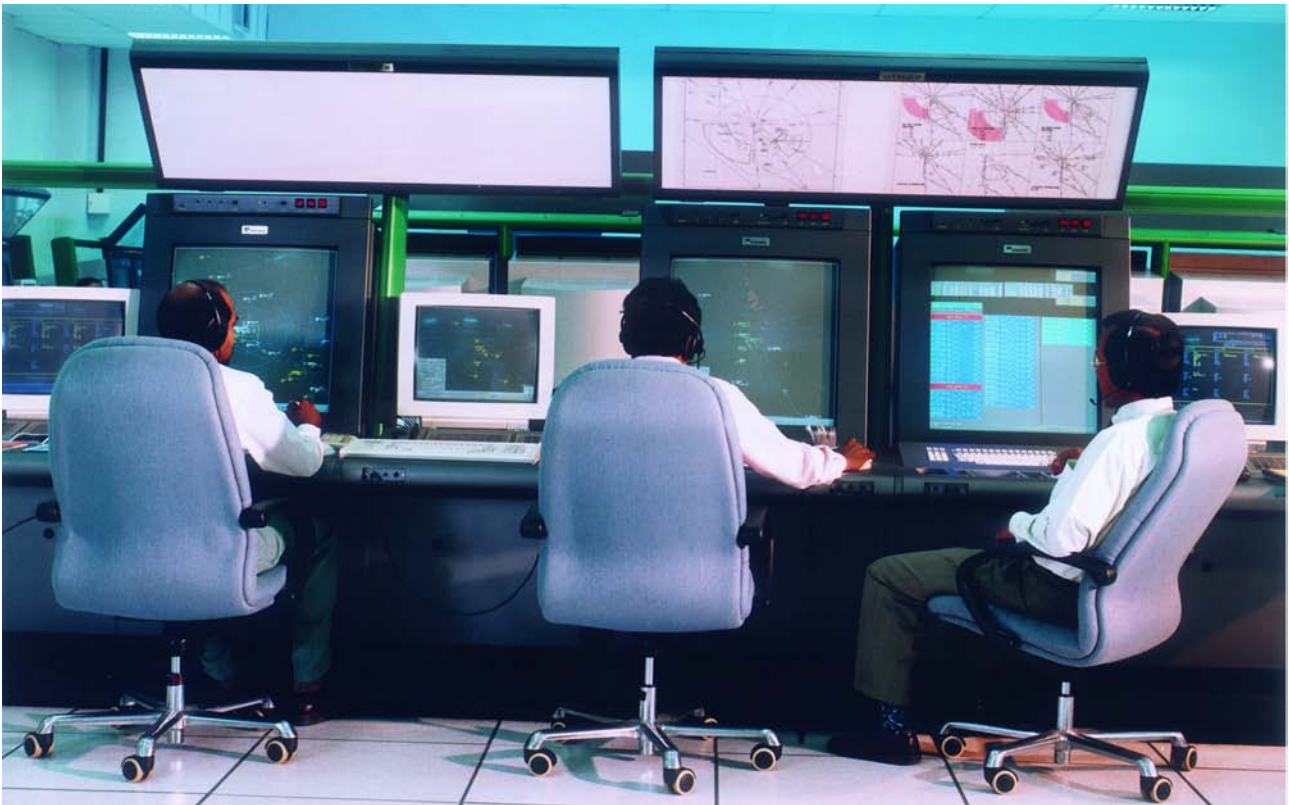
ATON generates air traffic within an airspace of 1024 x 1024 NM for each exercise while it provides controller positions with appropriate integrated radar and flight data scenarios whose background reports maps, fixes, airways, charts, airports layout as in the operational environment and input provided by standardised databases (EAD, Jeppesen).

1. System generates Surveillance Data associated to the aircraft according to assigned routes, simulating aircraft detection according to the selected radar configurations.

2. All targets are able to perform standard maneuvers (SID, STAR, SDR) and land following ILS, including simulation of missed approach procedures.
3. Each simulated target is navigated in two different ways:
 - Automatic Navigation Mode: target is navigated within the scenario according to its programmed route;
 - Manual Mode: target performs pseudo-pilot navigation orders given in accordance to controller clearances.
4. Target navigation is performed by the Air Traffic Generator according to:
 - ICAO Standard Manœuvres;
 - Cinematic laws;
 - Aircraft performances;
 - Wind characteristics.

Full Air Traffic Management tasks are supported by wide and flexible configurations providing

- En-route, TMA, Control Tower and A-SMGCS integrated scenario definition and generation for surveillance and flight plan management
- Ground-to-Ground Coordination "OLDI full-based"



- Air Ground Data Link Dialogue (CPDLC)
- Short Term, Minima/Minimal Infringement of Restricted Area, and Surface Conflict Alerting
- Advanced Human Machine Interface to accomplish radar and planner tasks
- Control and monitoring facilities for Technical Supervisor simulation

ATON is able to perform up to 6 exercises simultaneously supporting student assessment by recording and playing back the exercise sessions.

A standard ATON configuration includes:

- Air Traffic Generator providing a complete surveillance scenario composed of primary and secondary (conventional and Mode S) radar data plus ADS-B reports, all merged in a single system track or available as bypass
- ADS-C management position consisting of an integrated graphical position supporting land-to-airborne communication
- Flight Data Processing correlating flight plans with radar tracks

- Integrated Safety Net providing warnings when separation conflicts, minimal infringement and area incursion are detected (STCA, MSAW and APW)
- Graphical Pilot Positions enabling control of any individual flight, aircraft type, and selected route in ATS geography. Pilot orders are relevant to navigation, flight level/altitude assignment, speed control, transponder operation
- Exercise Supervisor Position performing control of the simulation session (freeze/restart, stop/run) and supporting any pilot capability
- Controller Working Position supporting all operational procedures as in the real environment. CWP has the same hardware and software configuration designed for operational workstations; in this way is possible to reconfigure the simulated environment for any operational task
- CPDLC fully supported dialogue between Graphical Pilot Positions and Controller Working Positions

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