Edda Systems AS
ATC simulators

eCoach ATC Simulator

The eCoach ATC simulator enables education of new professional air traffic controllers and refreshment training of certified controllers. All roles can be covered – tower, approach/departure, and area control – military included. Flight Information Service (AFIS) officers can be educated using the same installation.
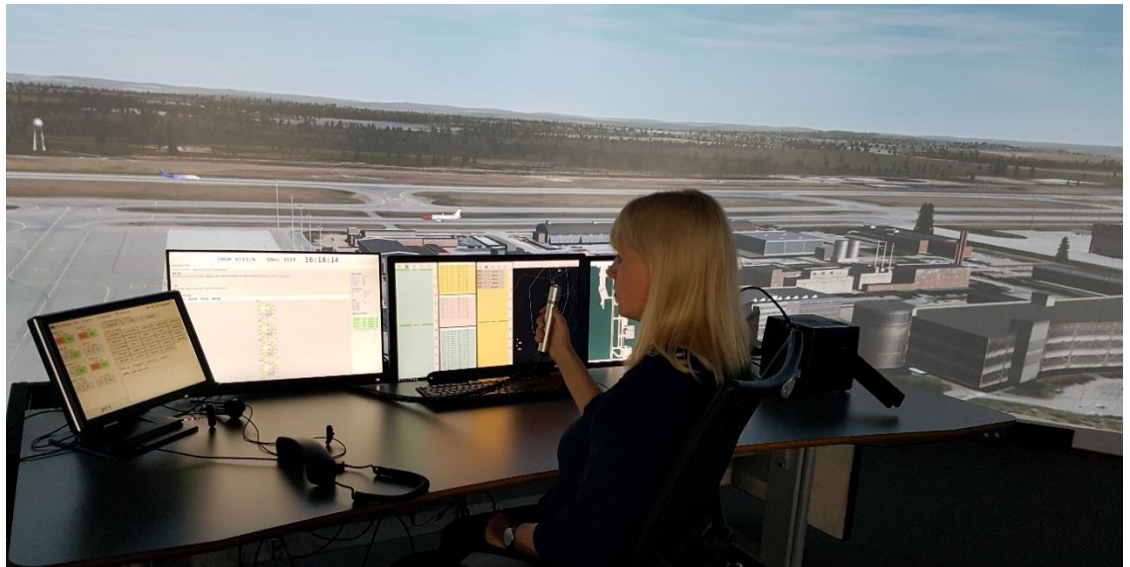
System Structure

The simulator system is centered around a server running the training session. Any number of working positions can be attached to the server. The role of each working position (sim pilot, area controller, approach controller, or tower controller) can be selected in any combination at any time, also during a running session, because the positions are compatible.

The eCoach Remote Training concept even allows the working positions to be at different geographical locations. This way, the same simulator system can be used for various purposes at various sites, with some common country-wide resources. It can run all together, or any site or combination of sites can run independently as an autonomous sub-system. Resources can be allocated dynamically across sites and exercises, for parallel activity.

Enabling of tower control simulations is only a matter of adding presentation hardware to the system: LCD displays, TV screens, or projector technology. This hardware will present the traffic as seen from a control tower working position, while the working position itself is equal to all the other working positions.

Approach positions — Tower positions

Simpilots & Instructor — *LAN* — ACC positions

eCoach Server

Exercises

Training exercises are produced at the eCoach Exercise Designer (ED). This can be an existing office PC at the customer's premises. Microsoft excel can be used to produce exercises, which are then imported to the ED and fully tested before uploaded to the simulator system.
The ED can also be used in meeting rooms or auditoriums and give a boost to ATC presentations, for teaching or discussions, by presenting "live" traffic scenarios.

Concept

The exercise can as a minimum specify aircraft ID and type, departure and destination aerodrome, and start time. In run-time, the eCoach server will get data about airport taxiways, SIDs, airways, and so on, and apply to each flight. If desired, more details can be added at exercise specification time, in order to select specific routing, runway exit, etc. When the exercise is run, the sim pilot can override the pre-specified behavior, or leave it all to automated flight progress from gate to gate.

Pilot Efficiency

A major cost element when running a simulator is the need for human sim pilots. Therefore, the eCoach ATC simulator has a lot of automation features and thus requires a minimum of human intervention to run an exercise. The eCoach Remote Training concept can even reduce the need for travel expenses related to training.

Scalability

eCoach is a highly scalable and configurable system both in terms of technology platform and number of working positions. The platform can be upgraded and working positions can be added throughout the system's lifetime. 3D Tower presentation can range from an office desk with a set of computer displays, up to a cylindrical room with projectors featuring a 360° tower view and several working positions – and all configurations in between.

Voice Communication System

The VCS can run integrated with the eCoach system, providing synchronized recording and playback. Operational quality devices like touch-screen, microphones, and foot-pedals are supported.
All standard radio and telephone functionalities are supported, easily adaptable to individual airport setup.
The VCS also supports the Remote Training Concept.
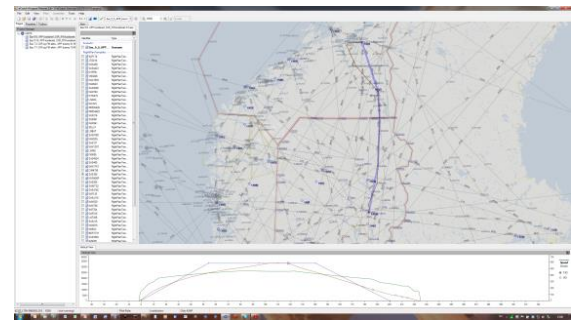
The Exercise Designer

3D Tower Presentation

Presenting a 360° view on a display surface is a challenge. eCoach has built-in Warping and Blending which ensure seamless transitions without distortions from one projector to the next. Runways and buildings are presented exactly as seen from the tower.
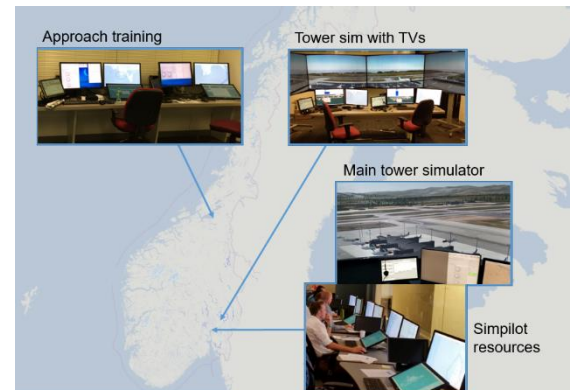

360° Tower Simulator

eCoach Remote Training Concept

Taking controllers out of service for scheduled training can be a challenge, economically and otherwise. To reduce this aspect, an eCoach system can be geographically distributed, with working positions located anywhere with a proper Internet connection. Several such locations can be part of the same system, allowing maximum utilization of expensive and valuable human resources.
The users of the eCoach simulator will experience the remote operator as being located at the same facility, or as pilot of a simulated aircraft.

eCoach Remote Training