Si ATM CNS/ATM Prot

"The Si ATM HMI prototyping tool"

Aviation industry today has a clear trend towards a growing number of CNS/ATM applications in use by airlines. Due to that fact, the Air Traffic Services have to be constantly prepared to accept and efficiently operate these applications/technologies.

The success of implementation of perspective operational programs and technical-technological solutions depends substantially on the level of ATS staff qualification as well as on the quality of associated professional skills gained during simulation training.

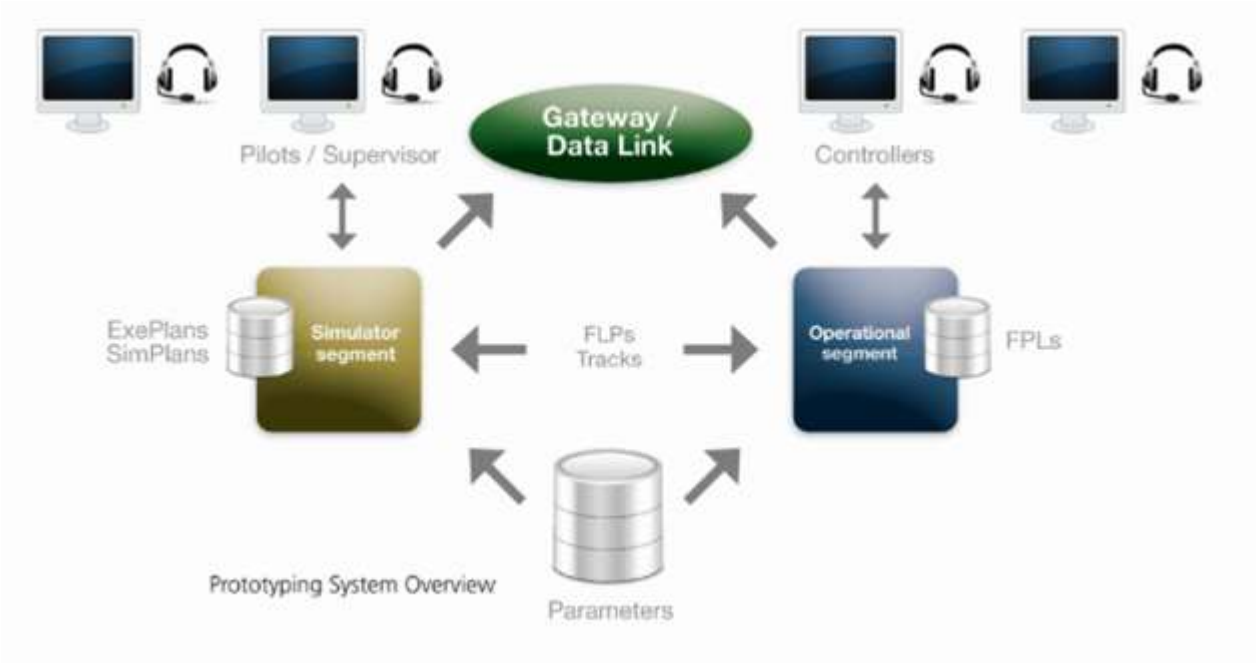
The CNS/ATM Prototype meets need for appropriate training

The CNS/ATM Prototype provides a semi-natural operational environment for controllers using new technologies within the CNS/ATM area. It has been developed to meet the need for appropriate training and methodology to improve new professional skills since controller operations go through significant changes when implementing CNS/ATM technologies.

Jointly developed by Si ATM and LGS

The CNS/ATM Prototype has been jointly developed by Si ATM and LGS (Latvijas Gaisa Satiksme), the ATS service provider of Latvia. To meet the current trend of technology development, LGS has decided to:

- verify these new technologies and solutions within the operational environment of Latvian ATC;
- develop optimal "controller-pilot" communication procedures and examine special controller skills within the operational environment of new and mixed applications (to handle transition to data link exchange);
- secure integration of newly introduced technologies, solutions and applications into the technical infrastructure of Latvian ATC, including possibilities to perform integration with the operational Automated ATM Centre (ATRACC), supplied by Si ATM;
- study and adapt special ATC procedures, based on CNS/ATM solutions.



Prototyping System Overview

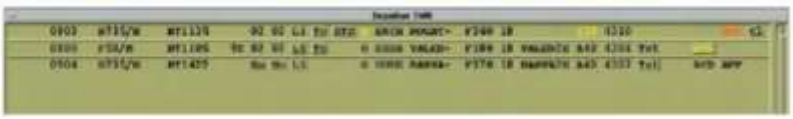
Functional structure of the CNS/ATM Prototype

The prototyping system comprises three main components i.e. Simulator segment, Operational segment and CNS/ATM segment.

Simulator segment

The simulator segment is the component which drives the simulation process by generating traffic for the operational segment with the following primary functions:

- Overall control of the execution of an exercise – i.e. processing of the exercise-related ExePlan to create the appropriate environment for the running of the exercise.
- Generation of Flightplan data which is fed to the operational segment – this is based on the SimPlans included in the exercise.
- Generation of Track data which is fed to the operational segment – this is based both on the SimPlans included in the exercise, which determine intended flight routes, and pilot navigational input made during the course of exercise execution.



Operational segment

The operational segment is functionally a copy of the operational ATRACC system, which is fed with simulated flightplans and tracks, based on exercise definitions and pilot navigational input. This data is processed by the main ATRACC operational features / functions which are:

- Multi Radar Tracking
- Flightplan Data Processing supporting dynamic updating of flight data
- Stripless and paperless HMI
- On-Line Data Interchange
- Monitoring Aids
- Safety Nets
- Medium-Term Conflict Detection
- Recording and Playback
- System Monitoring and Control
- Radar By-pass Function

ATRACC has been specified and developed in close adherence to standards and recommendations by Eurocontrol and ICAO.

CNS/ATM segment

The CNS/ATM segment comprises elements which simulate a CNS/ATM environment and allow prototyping of CNS/ATM functionality. These elements are:

- Gateway function for the simulator segment
- Gateway function for the operational functions
- Simulated data link
- Pilot HMI for CNS/ATM functions
- Controller HMI for CNS/ATM functions

It is completely integrated in the normal controller HMI and the controller interaction is performed, in labels and lists. The following CNS/ATM functions are handled:

- Automatic Dependent Surveillance, ADS
- Controller Pilot Data Link Communication, CPDLC
- Departure Clearance by means of data link, DCL

DCL was operationally implemented in the ATRACC system during the first half of 2006 and has from then on supported DCL procedures at Riga airport.

SiATM

ISO 9001 SFK

Landsvägen 39, SE-172 63 Sundbyberg, Sweden
Tel + 46 8 98 23 00 • Fax +46 8 98 31 98
si@siatm.com • www.siatm.com

The Swedish ATM systems experts since 1981.