ELECTRONIC FLIGHT PROGRESS STRIP E-STRIP
Flight progress strips play a central role in air-traffic control. Saab e-Strip is an electronic flight progress strip system which may be integrated with other tower and airport systems. It is user-friendly and highly configurable and can be customised to fit both large and small airports.

Traditional paper strips have several limitations: they are time-consuming to print and update, the information on the strips stays with the controller, and the possibilities for integration with safety nets are limited. At a modern commercial airport, where traffic and safety demands are continuously increasing, these drawbacks must be addressed. e-Strip is highly customisable to support the specific needs of the controllers and is easy to integrate with other tower and airport systems to enable information sharing.

e-Strip has a state-of-the-art user-friendly user interface where strips may be moved around freely, just as on a paper strip board. All movements are smoothly animated so that the controller clearly sees where the strips will end up.

With e-Strip the user gains the added support of an electronic system. As long as the strips are moved according to the configured routines, the system will provide support to the controller and make suggestions as to what should be done. But e-Strip also allows strip movements and transfers outside of the basic workflow in order to support extraordinary situations. e-Strip supports any actions that can be performed with paper strips, such as free movement, transferring and jotting down notes. The system is very flexible to work with. Once configured with the operational routines of the airport, it allows dynamic splitting and combining of roles and areas of responsibility between job positions. Suggested strip movements and transfers will thus depend on the role of the specific job position.

Saab e-Strip interfaces
**Flight Plan Interface**
- Directly via AFTN
- Via Saab’s FDP system, which acts as an AFTN terminal and a fallback solution for printing paper strips
- Via ADEXP or OLDI from another flight plan processing system

**Flight Strip Creation**
- Automatic creation by configurable role conditions using e.g. EOBT, ETA, reception of DEP messages, OLDI activation messages
- Blank strips or predefined template strips can be manually created at any time

**Roles and Responsibilities**
- Configurable with a set of standard roles and their associated areas of responsibilities (AORs), such as taxiways and runways
- The roles and AORs can be freely combined or split online
- Automatic support for the placement of strips when combining or splitting
- Assistant and supervisor roles with limited functionality and capability to display a passive view of all non-responsible strips

**Data Link Departure Clearance (DCL)**
- Integrated data link clearance compliant with ED-85A
- DCL actions and clearance requests are handled directly on the strips
- Manual, semi-automatic or fully automatic
- Supports both ARINC and SITA as the data link service provider

**Integration with A-SMGCS**
- Flight plans/flight objects
- Alarms: runway incursions, taxiway collisions, violations
- Clearances
- Automatic/manual stop bar control
- Stop bar status
- Use of runways
- Vehicle tracks to prepare vehicle strips

**Strip Layout**
e-Strip uses a number of different strips depending on what a strip represents. The strip layout is highly customisable and the layout used for a certain strip can also be easily configured. Examples of how this could be used:
- Different layout for ARR/DEP
- Different colours for different runways
- Different layout for VFR/IFR flights
You can customize colour, skin/background, fonts, size, field placement and bitmap figures. A graphical strip editor supports creation of the strip layouts.

**Configuration**
Examples of configurable items:
- Transfer sequences (based on AORs)
- Runway usage per runway combination
- Arrival and departure route allocation
- Activation (creation) rules for flight strips
- Default clearance limits when taxiing

The configuration format is XML but tools can also be provided for converting from other formats, such as Microsoft Excel.

**Maintenance**
The system comes with a set of tools for monitoring and controlling the system. The following functions are provided:
- System monitoring with presentation on both the e-Strip screen and in a web client
- Installation configuration and monitoring for use when replacing hardware
- Tools for configuring and managing services

**Automated Functions**
Examples of automated functions:
- Calculation of ATA/ATD
- SSR code allocation using local code bank
- SID and flight level allocation and logics
- Non-conformity alarms for e.g. diverging runways and flights, landing warnings, indisposed departure routes, SID/RWY/XPT rules
- Invoice data

**Integration with Other Saab Products**
e-Strip is very flexible to develop and well-integrated with our other products, due to its service-oriented architecture (SOA).

**Availability**
The redundancy platform used for e-Strip enables high availability with low latency and quick recovery from hardware failures.
EXAMPLES OF STRIP LAYOUTS

TECHNICAL DATA AND SPECIFICATIONS

Interfaces
- AFTN: Send/receive flight plan related messages
- Oldi: For example for transferring strips to ACC/APP systems
- Data Link: Departure clearance
- XML-based interface: Stand/gate information
- A-SMGCS: Exchange flight plans, alarms and clearances
- Web service: Open SOAP-based interface for retrieving flight information

Platform
- Operating system: Windows XP / Windows 7
- Screen: Wacom Cintiq 21"
- Server computers: PC (standard)
- Client computers: PC (standard), 512 Mb graphics, dual network cards

Redundancy
- Network: Dual network cards in all computers
- Servers: Server cluster (at least 3 computers) with recovery times of less than one second without losing any data
- Client computers: Emergency take-over procedure if a client computer or its screen fails
- External interfaces: All interfaces support having redundant connections

System configuration
- Parameter database: XML documents
- Strip layout: XML documents (edited by a specific tool)

Other
- CBT: Configurable built-in CBT-application for training or exam purposes

Specifications subject to change without notice