Enhance your efficiency with
Automated Departure Clearance

ADB SAFEGATE

How does the Digital Departure Clearance System work?

Are you ready?

Conventional procedures to deliver departure clearances are based on voice communication consisting of multiple read and read-back sequences to verify clearance reception. This requires dedicated manpower and frequency capacity, especially during peak hours where many flight crews simultaneously request their departure clearance. The expected expansion of air traffic will add to the workload and frequency congestion.

The ADB SAFEGATE solution

DECLOS – as a part of ADB SAFEGATE Tower ATM package – provides Air Traffic Controllers (ATCOs) and Airlines with the option of retrieving a pre-departure clearance using the on-board data link equipment. DECLOS is based on the EUROCAE ED-85A standard for communication. Pre-departure clearances are transmitted automatically negating the need for any further ATCO action or communication. Implementing DECLOS is therefore an important step in the effort to reduce frequency congestion.
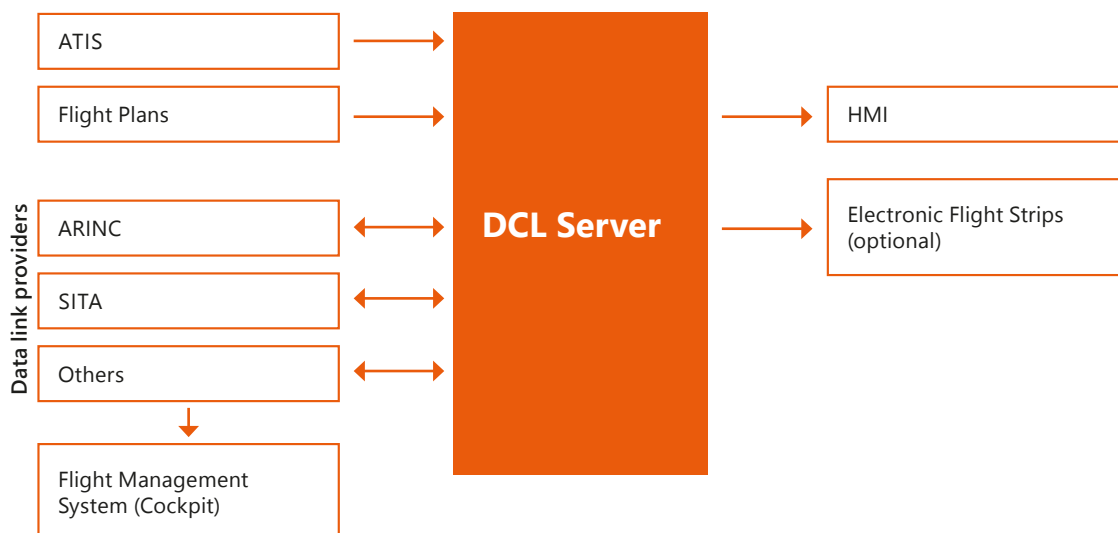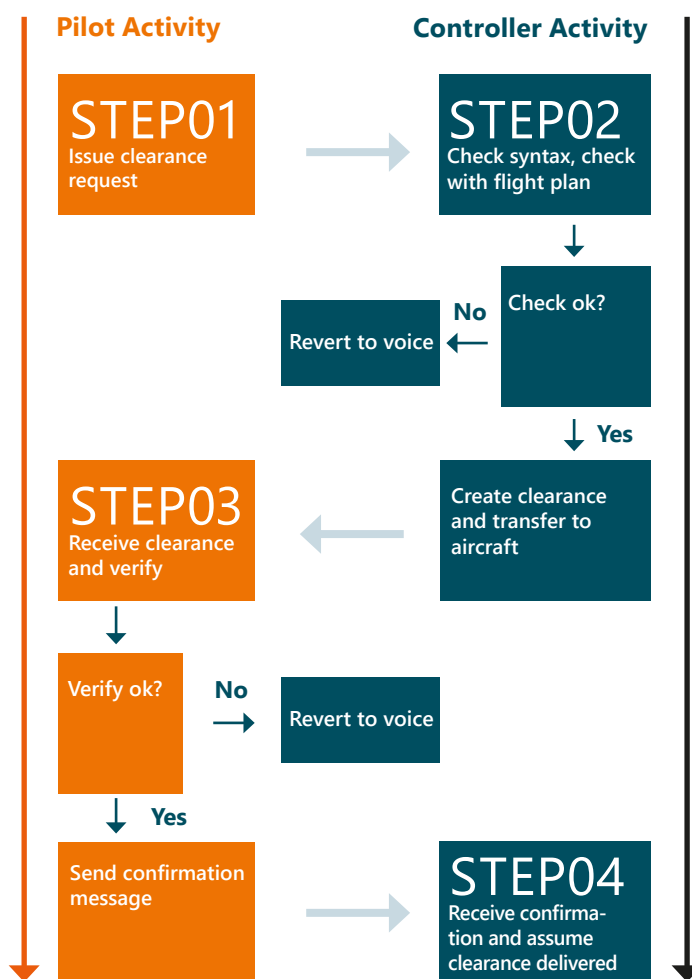
Different Modes of Operation

DECLOS has been designed to support different operational modes. The mode that is ultimately used for an application depends on the operational needs at a control tower.

Automatic mode: Automatic mode involves every clearance request message being automatically responded to with an appropriate clearance, on the condition that the clearance request matches a flight plan in the flight plan database. The system will inform a controller that clearance has been given.

Manual mode: Manual mode involves every clearance request message being presented to a controller on a dedicated HMI. A controller will review the details of the departure clearance and trigger the message transfer.

Digital Departure Clearance (DCL) Procedure

Digital departure clearance is supported as follows (simplified):

Pilot Activity

Controller Activity

STEP01
Issue clearance request

STEP02
Check syntax, check with flight plan

Check ok?
No → Revert to voice
Yes ↓

Create clearance and transfer to aircraft

STEP03
Receive clearance and verify

Verify ok?
No → Revert to voice
Yes ↓

Send confirmation message

STEP04
Receive confirmation and assume clearance delivered

ATIS → DCL Server

Flight Plans → DCL Server

Data link providers:
ARINC ↔ DCL Server
SITA ↔ DCL Server
Others ↔ DCL Server

Flight Management System (Cockpit)

DCL Server → HMI

DCL Server → Electronic Flight Strips (optional)

System Architecture

At the heart of the system is the DCL server, consisting of an operational unit and a hot-standby unit, forming a fully redundant system. The server is connected with the flight plan database, ATIS system and other data sources as required for the departure clearance.

The server communicates with the HMI, which can either be a dedicated DCL HMI or an add-on to an Electronic Flight Strip System such as DIFLIS. In addition to this, data can be exchanged with any automation system installed at a tower using XML message format.

Integration with Electronic Flight Strips

DECLOS has been developed for integration with an Electronic Flight Strip System such as DIFLIS, which reduces the need for an additional DECLOS HMI monitor.

In automatic mode, departure clearance is delivered automatically. The strip is marked accordingly and is transferred to the appropriate position, which is usually the apron/ground controller. In automatic mode, no further intervention is required by a controller.

In manual mode, reception of a clearance request is indicated on an electronic strip at the clearance delivery position. By pressing a button on the strip, the controller is able to initiate the necessary communication to the pilot in the background.
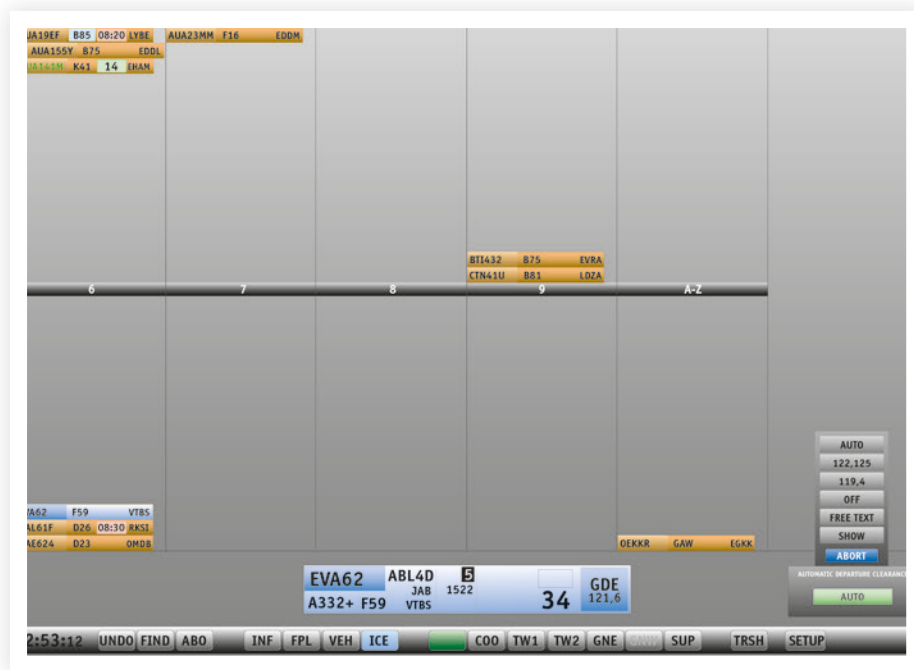
Key Features

- Complies strictly with EUROCAE standard ED-85A
- Can be used with data link providers such as ARINC and SITA, or both simultaneously
- Other data link technologies can be easily integrated
- Can easily be adapted for local ANSP procedures
- A simple list-based HMI is available if there is no Electronic Flight Strip System available that can be used as a front-end for a controller
- Supports XML messages to support simple integration into existing tower automation systems
- Departure Clearances are given automatically – no controller interaction is required
- Can also be operated in "manual mode" if required

Benefits

- DCL eliminates the risk of misunderstandings between controller and pilot, providing a safer and more efficient service
- Controller workload is reduced as DCL requests can be handled and processed fully automatically or by a simple single button-click in manual mode.
- Flight preparations are made easier, as a pilot can request a clearance and continue to prepare a flight rather than monitor the ATC frequency
- The DCL data link will significantly reduce the congestion of ATC tower frequency, which is particularly relevant at busy airports

ADB SAFEGATE is a leading provider of intelligent solutions that deliver superior airport performance from approach to departure. We partner with airports and airlines to analyze their current structures and operations, and jointly identify and solve bottlenecks. Our consultative approach enables airports to improve efficiency, enhance safety and environmental sustainability, as well as reduce operational costs. Our portfolio includes solutions and services that harmonize airport performance, tackling every aspect of traffic handling and guidance, from approach, runway and taxiway lighting, to tower-based traffic control systems and intelligent gate and docking automation.

ADB SAFEGATE has 900+ employees in more than 20 countries and serves some 2,000+ airports in more than 175 countries.

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