SOFTWARE

ELENIUM
PASSENGER EXPERIENCE SOLUTIONS
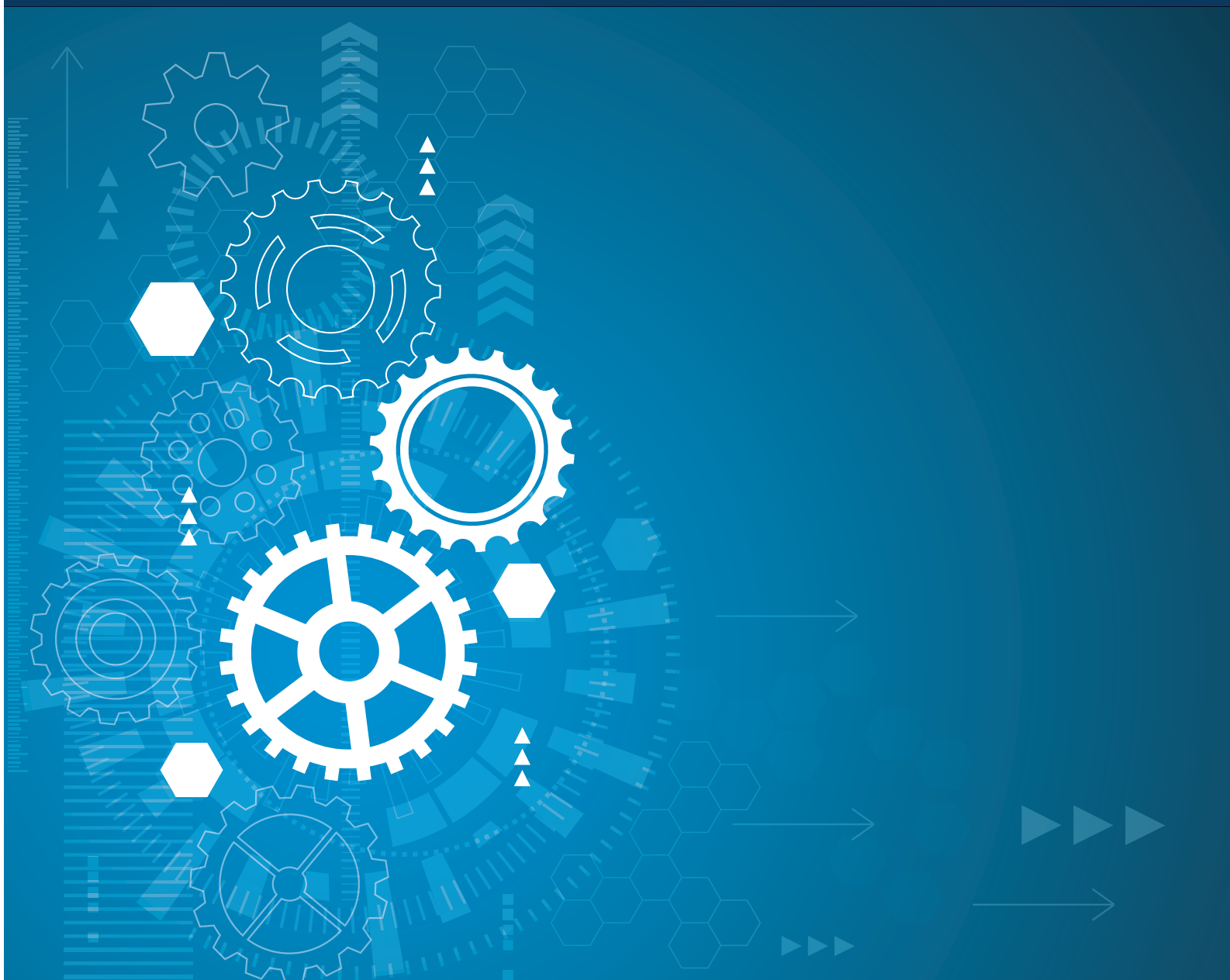
'Technology that moves you faster'

ELENIUM
AUTOMATION

FOUNDED **2015**

OUR **VISION**

Check-In Anywhere

3 sec **Bag Drop**

5 sec **Boarding**

OUR **HIGHLY SKILLED PEOPLE**

Industrial Designers

Data Scientists

Electronics Engineers

UX Designers

Software Developers

Project & Service Delivery Managers

Mechatronics Engineers

Solution Consultants

Production Engineers

Quality Assurance Engineers
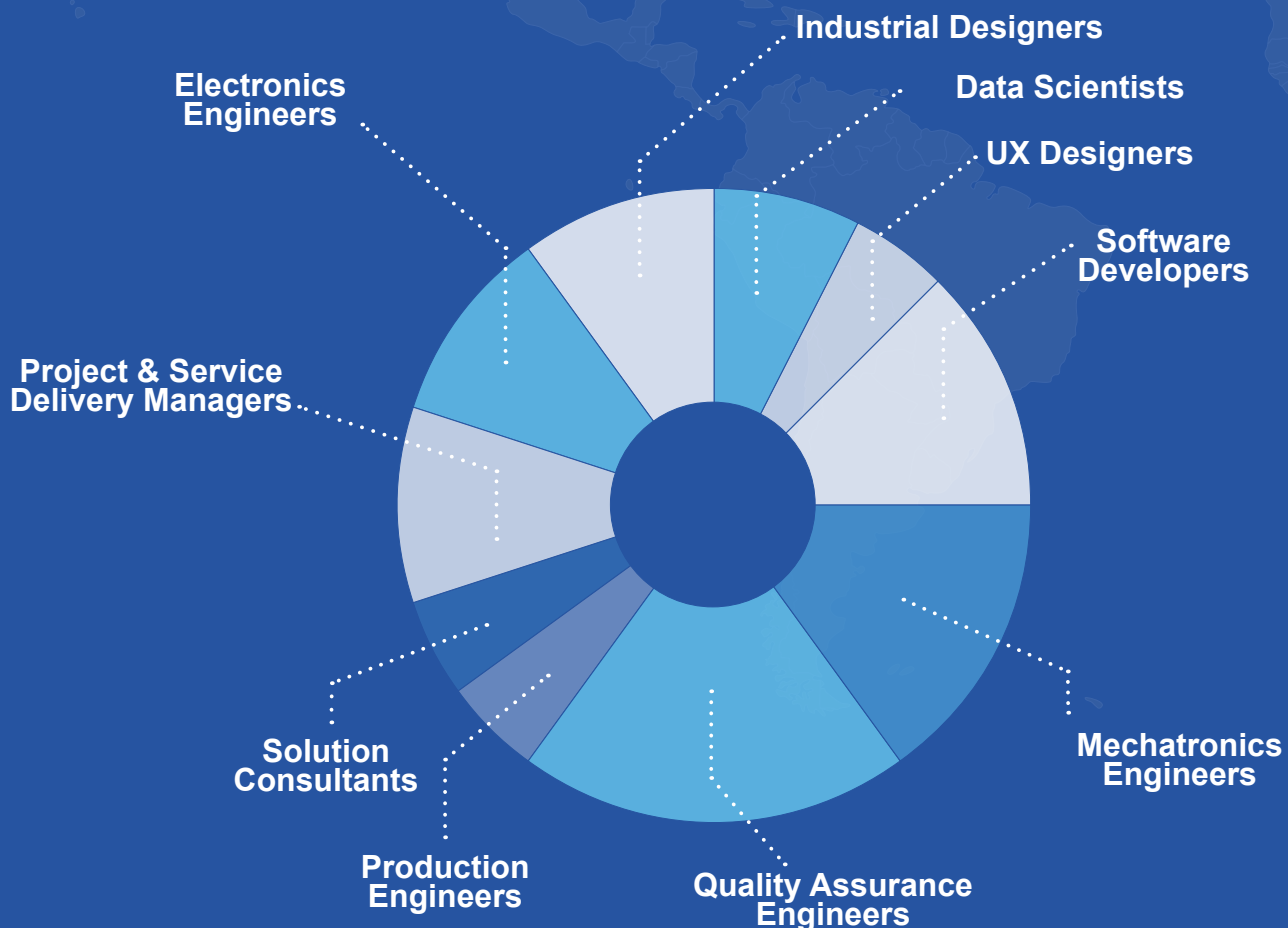
OUR SEAMLESS PRODUCTS

Mobile

Kiosk
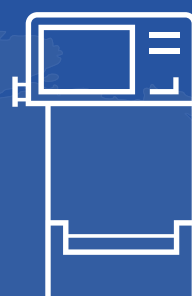
Bag Drop

Airport Gates

Voyager

CUSS

Self-Service Apps

Flight Deck

OUR GROWING NUMBERS

30+ AIRLINES

600+ DEVICES

GLOBAL REACH

ELENIUM
AUTOMATION

REAL TIME MONITORING	ANALYTICS & REPORTING	CENTRALISED MANAGEMENT	POWERED BY THE CLOUD
Real time device monitoring for your self-service fleet.	Pre-built dynamic drilldown filters and reporting templates.	Manage and control all devices and user access control via a web-based console.	No software installation required, accessible from a wide range of devices, highly available, scalable and secure.

Overview

Flight Deck provides full monitoring and management capabilities for your self-service fleet of devices, including kiosks, bag drops and boarding gates. It is delivered as a web portal over a HTTPS connection providing remote monitoring capability. It also provides text message and email alerts to users enabling prompt attention to customer queries, replenishment of consumables and on-going maintenance. This reduces device down-time and improves airport passenger processing efficiency.

Flight Deck's architecture has been designed to automatically scale as more devices are added without impacting performance and provides users ease of management by enabling multiple views and permissions.

Designed and developed using microservice architecture, Flight Deck works with Elenium and third-party self-service products and a range of automation applications providing users with a single interface to manage their airport automation devices.

Flight Deck provides the capability to undertake a wide range of tasks. Including:

- Summary of all devices and their current status (battery power, components, network status and etc.);
- Real time monitoring of devices both in group view and single device view;
- Filter devices to easily identify devices by characteristic;
- Open, close, power cycle and test devices and their components (including printers) by individual device or groups of devices;
- Generating reports for analytics and billing purposes;

Dashboard View

Dashboard information illustrates current status of devices and alerts administrators of any devices that are in need of attention. Real-time analytics enables active monitoring of performance to quickly troubleshoot any issues before they become problems.
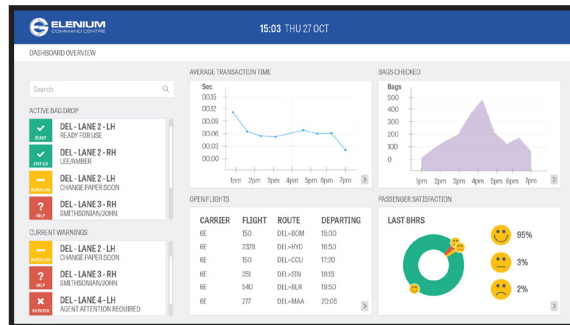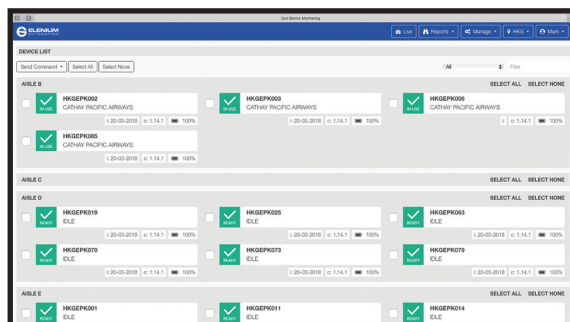

Passenger-Flow View

Passenger movement can be analysed between multiple self-service touch points.
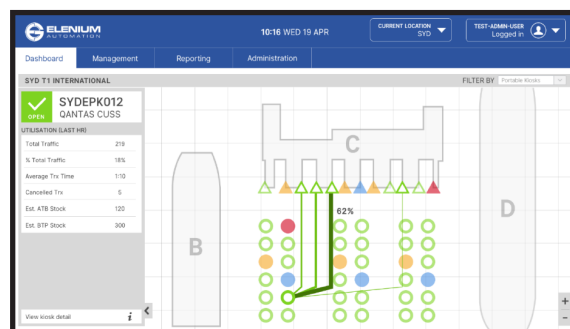

Fleet View

Flight Deck provides real time device monitoring for a fleet of devices and individual devices. In this screenshot, devices in defined groups are displayed with visual alerts to indicate the status of each individual device.

Device View

Real-time view of individual devices can also be displayed. This screenshot illustrates information provided to users, including battery, printer and network status, any live passenger transactions occurring, and recently logged events.

Flight Deck logs all device usage and presents it to administrators or assigned users in an easy to read format.
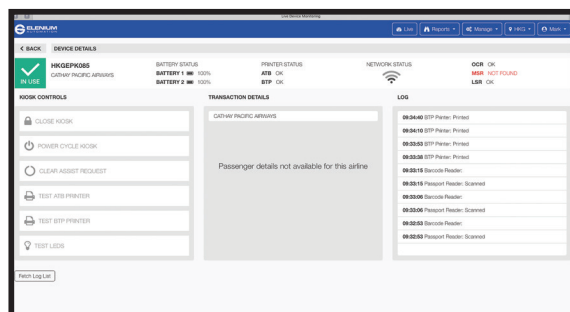
Usage Details

Individual transactions are logged enabling airport staff to quickly understand the passenger usage process and are able to quickly address any passenger requests.

To meet airport and airline privacy requirements and GDPR (General Data Protection Regulation) compliance, all personal information is scrubbed from the device and logs to eliminate the risk of any privacy breaches.

ELENIUM
AUTOMATION
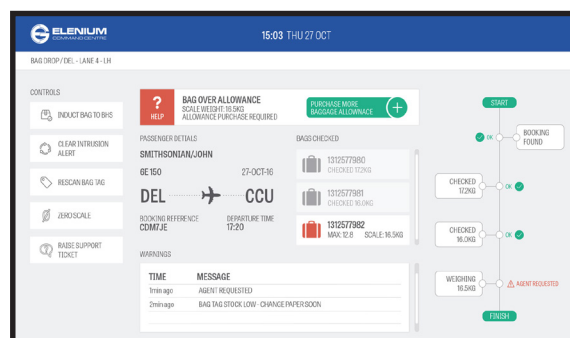
ON-BOARDED 80+ AIRLINES GLOBALLY

We have on-boarded more than 80 airlines globally.

ZERO COST TO ONBOARD NEW AIRLINES

There's no charge to on-board new airlines onto our CUSS platform.

BUILT-IN BIOMETRICS ENROLMENT MODULE

A built-in advanced module without requiring airlines to make changes to their application.
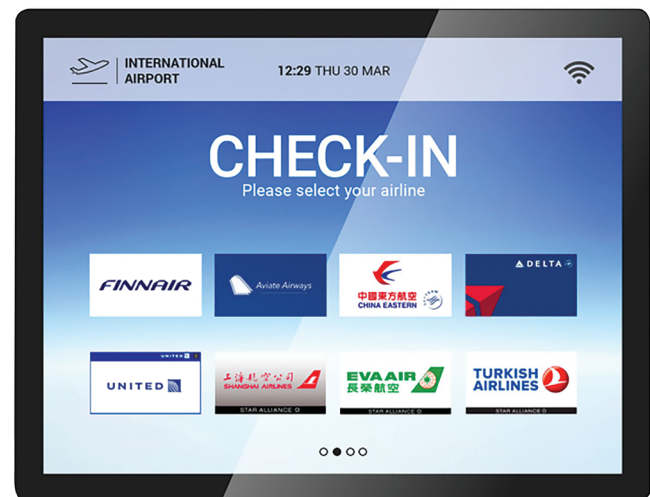
INTEGRATED TO ELENIUM FLIGHT DECK

Authorised users can monitor, manage and administer all devices remotely via Elenium Flight Deck.

Overview

The Elenium CUSS Platform supports airline CUSS applications on both Elenium and 3rd Party self-service devices. The platform is designed with a modern technology stack making it highly reliable, remotely manageable and customisable with integration to third-party systems such as biometrics, payment gateways and AODB.

The platform is resilient, running each airline application in a sandbox ensuring legacy and modern CUSS apps can operate in harmony. This design ensures optimised performance and when combined with Elenium Flight Deck delivers real operational advantages. The Elenium CUSS Platform is compliant with IATA CUSS standards, it is able to support CUSS 1.3, 1.4 and 1.5 applications.

Key Features

- Supports Elenium Hardware

- Supports 3rd Party Hardware

- Cuss Check In and Bag Drop

- Cuss and Cute Switching

- Flight Deck Integration

- Dynamic Attract Screen

- Common Launch Screen

- Supports Ethernet, Wifi And Cellular Networks

- Cloud-Based Technology

- (No Local Server)

- Support for 3rd Party Services

- Biometrics Enrolment Built-In

- Remote Update & Configuration

Biometrics Enrolment Module

The Elenium CUSS platform has a vendor-agnostic biometrics enrolment module. It allows airlines to utilise biometrics verification function without the needs of modifying their applications.

Biometrics Passenger Life Cycle

Overview of Process Flow

• Passenger selects airline via common launch screen

• Passenger is asked via UI if they would like to use biometric enrolment

• Airline CUSS application is launched by Elenium CUSS platform

• Passenger completed check in process using airline CUSS application

• Boarding pass and bag tag prints are captured via Elenium CUSS Platform and held in memory

• Biometric enrolment UI presented to passenger

• Passenger facial biometrics captured and submitted to FRS* along with passport and boarding pass details

• Passenger boarding pass and bag tag printed

• Transaction complete

* FRS refers to facial recognition system

ELENIUM AUTOMATION

CUSS COMPLIANT 1.3, 1.4 & 1.5

CUSS compliant and suitable for a wide range of hardware devices.

POWERED BY THE CLOUD

Quick deployment, highly available, scalable and secure infrastructure.

BUILT-IN BIOMETRICS ENROLMENT MODULE

A built-in advanced module without requiring airlines to make changes to their application.

WHITE LABEL SOLUTION

Customisable to meet client specific branding requirements.

Overview

Elenium Applications are CUSS compliant, designed with a focus on delivering great user experience and reduced complexity with an easy-to-use user interface. We frequently collaborate with passengers, airlines, airports and agents along with insight data collected from Elenium Fight Deck to improve our designs.

We strive to reduce project implementation complexity and time frames by leveraging Elenium Switch Board, which is engineered, pre-integrated and tested with a wide range of DCS and third-party services such as payment gateways, biometrics and TIMATIC services. These applications operate on Elenium Nexus, a modern cloud-based network solution which is highly available, scalable, multi-layer security and has a lower operating cost.

Application business rules and graphics are fully customisable, so that passenger experience can be effectively aligned with branding requirements.

Key Features - Check-In

- Complete Passenger Check-In
- Capability
- Boarding Pass and Bag Tag Printing
- Seat Assignment and Changes
- Wayfinding Map

- Integrated with Payment Gateway
- IATA TIMATIC Visa Check
- Biometrics Ready
- Integrated with Flight Deck

- Data Analytics and Reporting
- Multi-lingual Support
- Dangerous Goods Screen
- Content Management System
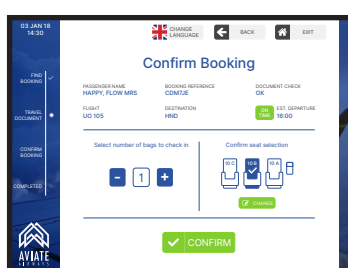
Easy to View Booking Display
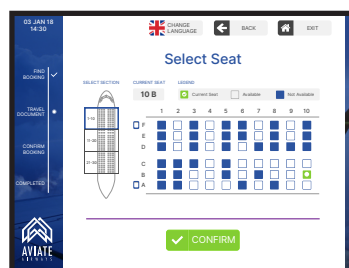
Seat Map for Seat Selection
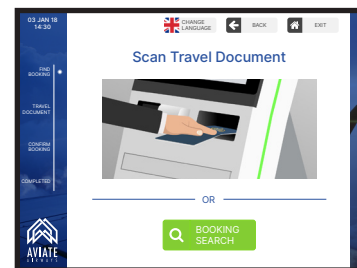
Instruction to Scan Travel Document
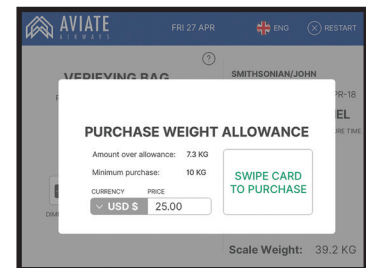
Key Features - Bag Drop

- Support BHS Integration
- Fully Compliant with Baggage Messages
- Support Multiple Passenger Workflows
- Biometrics Ready

- Supports One-Step and Two Step Bag Drop Processes
- Wayfinding Map
- Integrated with Flight Deck
- Data Analytics and Reporting

- Multi-lingual Support
- Dangerous Goods Screen
- Content Management System
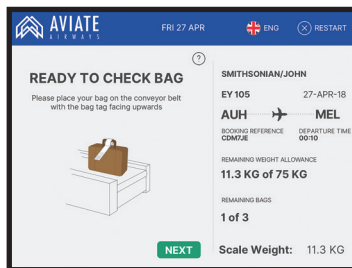

Instructions for Bag Drop
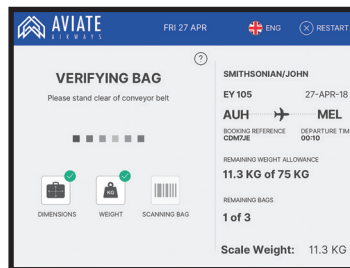
**Validating Bag's Dimensions, Weight and Bag Tag**

Excess Baggage Fee as Ancillary Revenue

## Key Features - Transfer Application

- Boarding Pass Printing
- Flight Rebooking
- Ancillary Revenue Generation
- Disruption Management

- Vouchers Issuance
- Biometrics Ready
- Wayfinding Map
- Integrated with Flight Deck

- Data Analytics and Reporting
- Multi-lingual Support
- Dangerous Goods Screen
- Content Management System
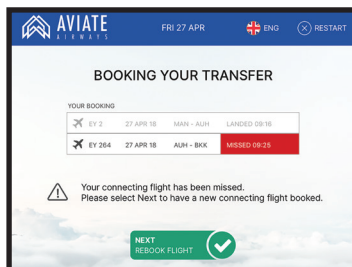
Missing Flight Connections
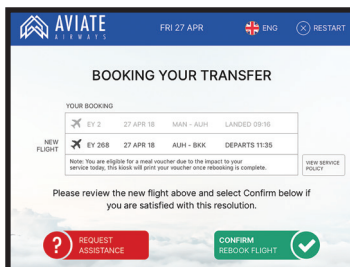
Next Available Flight and Eligibility for Meal Vouchers
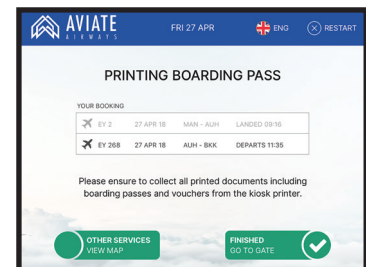
Printing Boarding Pass and Vouchers

ELENIUM
AUTOMATION

FAST BOARDING

<100ms

Passenger validating against manifest in less than 100ms.

POWERED BY THE CLOUD

Quick deployment, highly available, scalable and secure infrastructure.

SUPPORT A WIDE RANGE OF DCS

Pre-integrated with major DCS solutions.

WHITE LABEL SOLUTION

Customisable to meet client specific branding requirements.

Overview

Passengers expect a swift and seamless boarding experience at the gate; Elenium Boarding Application is capable of validating a passenger in less than 1 00ms against the passenger manifest, due to its modern architecture and technology.

The application is designed with a focus on delivering great user experience and reduced complexity with an easy-to-use user interface. We frequently collaborate with passengers, airlines, airports and agents along with insight data collected from Elenium Fight Deck to improve our designs.

We strive to reduce project implementation complexity and time frames by leveraging Elenium Switch Board, which is engineered, pre-integrated and tested with a wide range of DCS and third-party services such as AODB, FIDS and biometrics. This application operates on Elenium Nexus, a modern cloud-based network solution which is highly available, scalable, multilayer security and has a lower operating cost. Application business rules and graphics are fully customisable, so that passenger experience can be effectively aligned with branding requirements.

Key Features - Check-In

- No-Show and De-boarding Management
- Flight-Closed Reporting
- Load and Balance Reporting

- Off-line Mode
- Boarding Data Synchronisation to DSC
- Support Multi-lane configuration

- Biometrics Ready
- Integrated with Flight Deck
- Data Analytics and Reporting
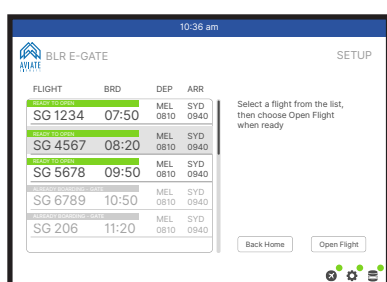
Flight is Selected, Opened and Ready for Passenger Boarding

Gate and Passenger Boarding Administration

Printing Flight Boarding Report After Gate Closed

ELENIUM
AUTOMATION
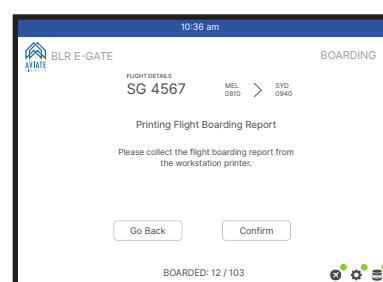
iOS & ANDROID

Passenger validating against manifest in less than 100ms.

POWERED BY THE CLOUD

Quick deployment, highly available, scalable and secure infrastructure.

SUPPORT A WIDE RANGE OF DCS

Pre-integrated with major DCS solutions.

WHITE LABEL SOLUTION

Customisable to meet client specific branding requirements.

Overview

During peak traffic hours, customer service agents equipped with the Elenium Mobile Agent App can tackle long lines at check-in, bag drop and boarding. The same application also allows agents to assist passengers with missed connections, cancelled or delayed flights.

The application is designed with a focus on delivering great user experience and reduced complexity with an easy-to-use user interface. We frequently collaborate with airlines, airports and ground handlers along with insight data collected from Elenium Flight Deck to improve our deigns. Application business rules and graphics are fully customisable, so that passenger experience can be effectively aligned with branding requirements.

Key Features

- Passenger Bookings Management
- Full Passenger Check-In Capability
- Ancillary Revenue Generation
- Disruption Management

- Agent Closed Group Instant Messaging
- Biometrics Ready
- Integrated with Third-Party Services such as AODN, FIDS and Payment Gateways

- Wayfinding Map
- Integrated with Flight Deck
- Data Analytics and Reporting

Flight is Selected, Opened and Ready for Passenger Boarding
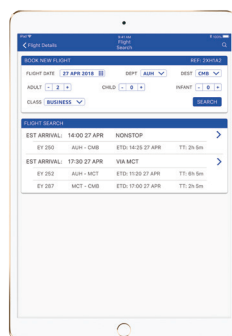
Gate and Passenger Boarding Administration
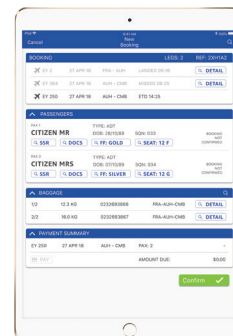
Printing Flight Boarding Report After Gate Closed

Elenium Cloud

The Elenium Cloud products are a suite of technology solutions which aim to enable a seamless experience for passengers, airlines and airport stakeholders alike. Our business-focussed Cloud offerings enable airlines and airports to deploy, manage and monitor their entire self-service footprint faster and easier.

Elenium Switchboard
Allows airports and airlines to easily deploy new services including: DCS, biometrics, payment gateways, ancillary services and more. These changes can often be made within days, rather than months, thereby rapidly improving time-to-market outcomes.

Elenium Nexus
Provides a global virtual network to radically simplify secure connectivity for users and back-end systems between airlines and airports, as well as offsite locations like train stations or hotels by using existing onsite internet connections. Reduces management overhead and operating costs while simultaneously improving service levels and availability.

All Elenium Cloud products are built upon these four pillars:

**Handle peak traffic periods with intelligent and automatic scaling to keep up when our users need it most.**

Scalability
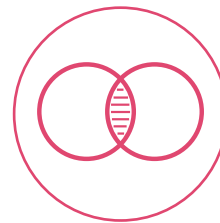
Services should be highly available, self-healing and gracefully handle outages or service issues without impact to the user.

Resilience

Security is a first consideration and not an afterthought. We ensure the privacy and security of our users, services and partners in every way.
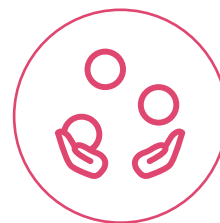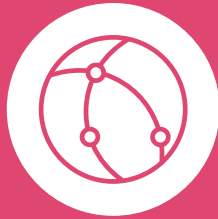
Security

Enable and empower our users (and ourselves) to effortlessly handle and exceed rapidly changing needs.
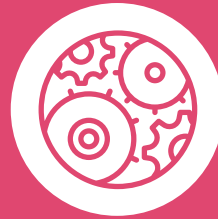
Agility

FASTER TIME TO MARKET

Add value for your passengers faster than ever before with the agility to deploy value add services within days, not months.

GLOBALLY SCALABLE

Automatically route traffic to the nearest data centre with no extra configuration required. Overcome peak periods with dynamically scaling services.

INTEGRATED AUTOMATION

Seamlessly link services together to orchestrate functionality across your own and third-party services without costly application changes.

POWERED BY THE CLOUD

Customisable to meet client specific branding requirements.

Overview

Modern airports and airlines face challenges to accommodate a rapidly expanding ecosystem of supporting third-party services. Switchboard simplifies these integrations by providing a single middleware automation layer with pre-existing integrations to a wide range of airline DCS as well as third-party services such as payment gateways, biometrics services and visa/document check services like IATA TIMATIC.

Users of Elenium Switchboard also benefit from community-driven feature development as new integrations are constantly added and become available to all. In addition to accessing integrated services via a globally-available integration gateway, Switchboard can also deliver automation and orchestration capabilities to further simplify operations that may touch multiple services by, for example, performing biometrics and visa validation followed by passenger check-in with only a single request from the application.

ELENIUM AUTOMATION
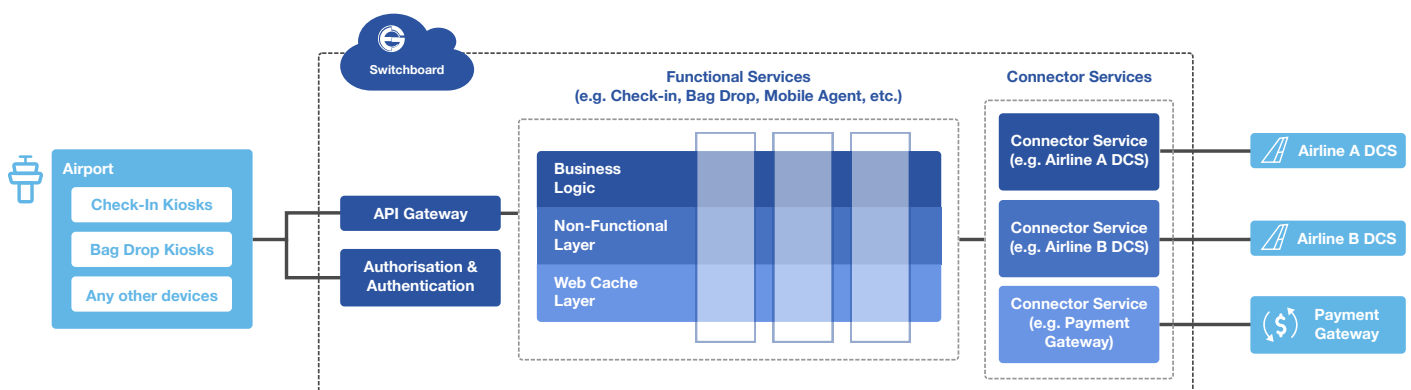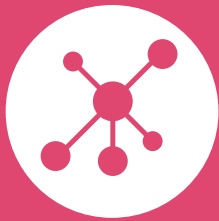
SIMPLE DEPLOYMENT

Use one internet link for access to any number of airlines and sites, then scale out effortlessly as you grow to service new locations and carriers.

SECURE

The ease and convenience of the cloud without sacrificing security. All data is encrypted in transport between airline and site, even enhancing legacy unencrypted applications to secure communications.

ZERO-COST INSTALLATION

Use existing internet infrastructure on site to reach Nexus and access any permitted airport or airline. No need for dedicated network hardware or expensive private links.

POWERED BY THE CLOUD

Quick deployment, highly available, scalable and secure information.

Overview

Nexus provides a cloud-based virtual network interconnect that unifies connectivity to and between airports, airlines and other integrated ancillary systems. The Nexus environment is a distributed private cloud network which allows an airline to connect once and immediately have that connectivity available at any site they choose in the world.
This eliminates the need for costly management of private network links from airline DC to each individual site and opens the door for effortless scale-out to offsite locations like train stations, hotels or airport carparks.

Airports benefit from this ease-of-use as well -with only an internet link the airport can allow any devices on their site (dedicated or shared} to reach any airline system that is integrated to the Nexus environment. Self-service CUSS kiosks and CUTE workstations alike can be instantly ready-for-use without traditional implementation delays usually caused by installation of airline-dedicated routers, private circuits and complex redesigns. Nexus offers multi-region latency-based routing to automatically send traffic to the nearest Nexus point-of-presence where it can transit the rest of the way to the airline over high-speed backhaul links. This feature additionally provides the advantage of self-healing services in case of an outage in a region, automatically rerouting traffic to the next best location without any service impact.

As airlines and airports look to extend the self-service experience outside the airport, Elenium Nexus provides the agility and freedom reach these new locations without the cost and headaches associated with traditional rollout methods.
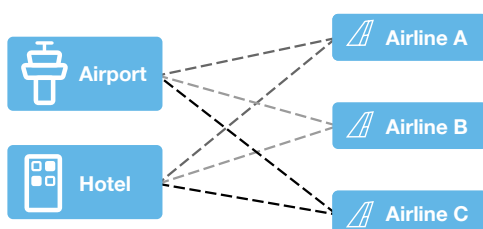
Traditional Deployment

Each airline manages a private link to every site, management overhead grows with every new deployment.
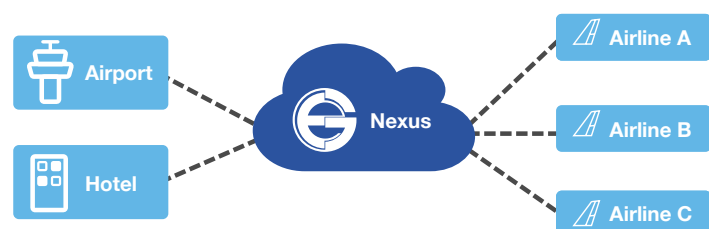
Elenium Nexus Deployment

Airlines and airports manage one internet link to Nexus, no impact to management overhead no matter how many new deployments.

ELENIUM
AUTOMATION

AUSTRALIA
36 Assembly Drive,
Tullamarine VIC 3043
T 1800 380 787
(+61 3 8658 1802)
E sales@elenium.com

INDIA
Mecheri Center #49
Eldams Road Chennai
600018
T +91 44 6609 7700
E sales@elenium.com

www.elenium.com

ACI
AIRPORTS COUNCIL
INTERNATIONAL