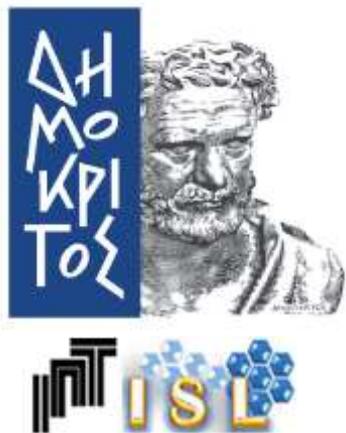




FLYSEC System Overview and Implementation Highlights



Dr. Dimitris Kyriazanos, Research Assistant Professor,
FLYSEC Technical Coordinator

Integrated Systems Laboratory, Institute of Informatics and
Telecommunications
National Center for Scientific Research "Demokritos"

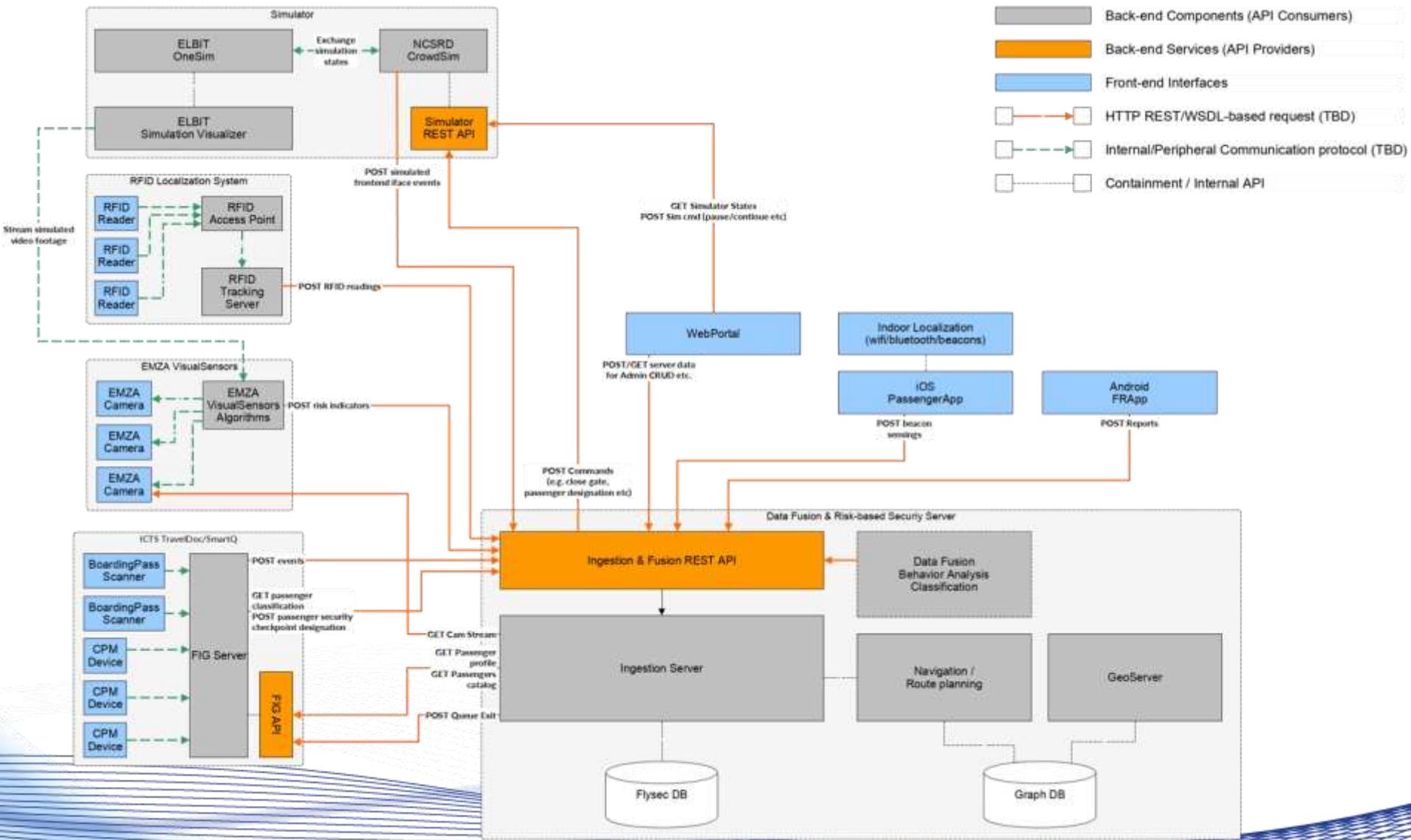


This work was performed within the FLYSEC Project (Optimizing time-to-FLY and enhancing airport SEcurity), with the support of the European Commission and the Horizon 2020 Programme, under Grant Agreement No. 653879



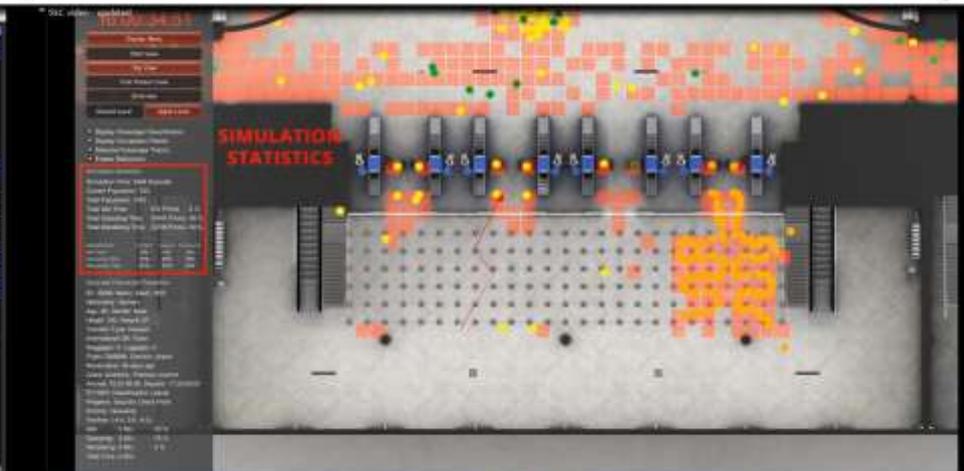
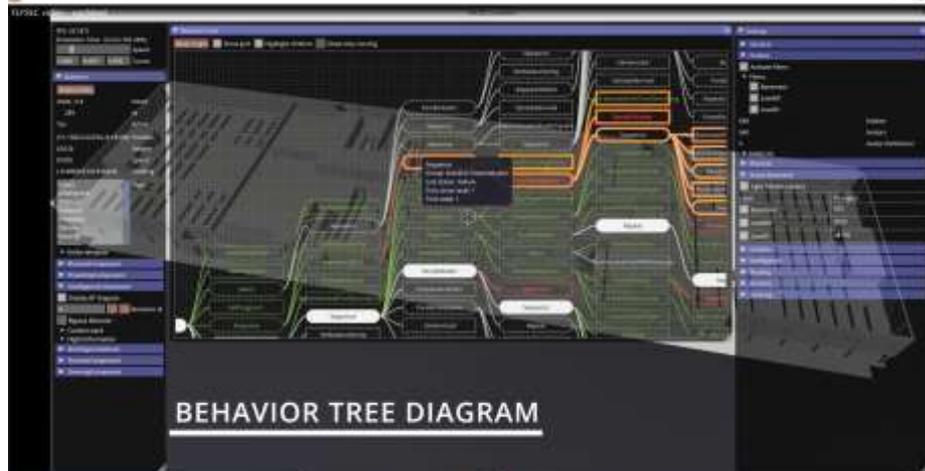


FLYSEC System Architecture





FLYSEC Integrated Simulation





FLYSEC Highlights: Integrated Simulation





FLYSEC Highlights: Integrated Simulation





FLYSEC Web Portal Integration Simulation

FlySec Home - FLYSEC
143.233.226.56:8000/#/private/airport/simulator

Alerts 20 Hi, admin

Level 0 -1

AIRPORT

- Dashboard
- Queues Overview
- Notifications
- Alerts
- Reports
- Passengers
- Sysusers
- Flights
- Simulator

DATA MANAGEMENT AREA

- Personnel
- AREAS
 - Map View
 - List View
 - Area Types

Simulator Status

Total number of agents:	49
Agents in clusters:	33

▶ || ◀ ↻

5 agents
15 agents
3 agents
4 agents

Boarding Gates

Boarding Gates



FLYSEC Highlights: C2 Portal

FLY SEC Alerts 1 HI, Dionysis -

AIRPORT

- Dashboard
- Queues Overview
- Profile
- Communication
- Alerts
- Passengers
- Sysusers
- Flights

DATA MANAGEMENT AREA

- Personnel
- AREAS
 - Map View
 - List View
 - Area Types
 - Area Actions
- INTERFACES
 - Beacons
 - RFID Readers
 - Boarding Pass Scanners
 - CPM Scanners
 - Statuses

Queues Overview

Queue Name: Security Queue 2	CLEAR
Queue Name: Security Queue 3	CLEAR
Queue Name: Security Queue 1	CLEAR

Security Queue 2 : Queue Clear!

Average Delay: **2 minutes** People at Queue: **6** Show queue status at: # of People who exited:

People at Queue

#1	Age: 52 ID: 123ABCD45	CASUAL	Feb 14, 2017 at 12:49:14	
#2	Age: 52 ID: 123ABCD45	ENHANCED	Feb 14, 2017 at 12:49:14	
#3	Age: 28 ID: 123ABCD45	ENHANCED	Feb 14, 2017 at 12:49:14	

People Recently Cleared Queue

Age: 52 ID: 123ABCD45	CASUAL	Feb 13, 2017 at 15:16:22	
Age: 52 ID: 123ABCD45	CASUAL	Feb 13, 2017 at 15:16:22	
Age: 52 ID: 123ABCD45	TRUSTED	Feb 13, 2017 at 15:16:22	



FLYSEC Highlights: Fusion & Risk Based Alerting

FLY SEC Alerts 20

- AIRPORT
- Dashboard
 - Queues Overview
 - Notifications
 - Alerts

Alerts

Filter Alerts by Area ID

Filter Alerts by type

Filter Alerts by Severity

Fetch all Alerts

Clear Filters

Description	Area Name	Alert Code	Severity Level	Evaluation Timestamp
loitering at area of camera ID: 23	Passenger area	406	Critical	Feb 21, 2018 at 16:39:07
congestion incident: SMALL	Passenger area	408	Information	Feb 21, 2018 at 16:24:36
Classified enhanced: Suspicious destination	Passenger controls/ Access to gates	300	Critical	Feb 21, 2018 at 14:23:27
loitering at area of camera ID: 23	Passenger area	406	Critical	Feb 21, 2018 at 14:20:4



Passenger controls/ Access to gates

Airport ID: 802

Area Type: SECURITY CONTROL

Hierarchy Level:

Level: 0

Capacity: 1094

People present: 0

Congested: 0%

Alerts: 2

Area Actions: 0

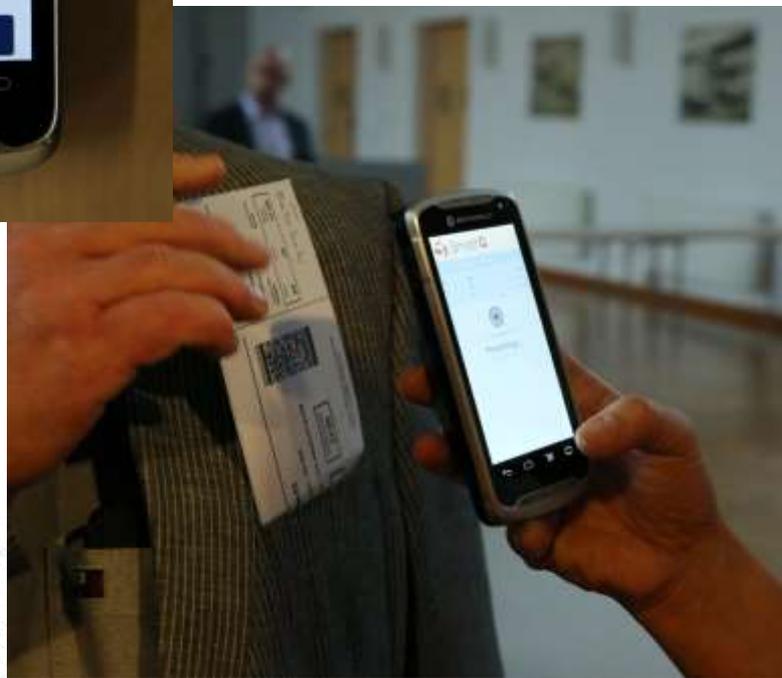
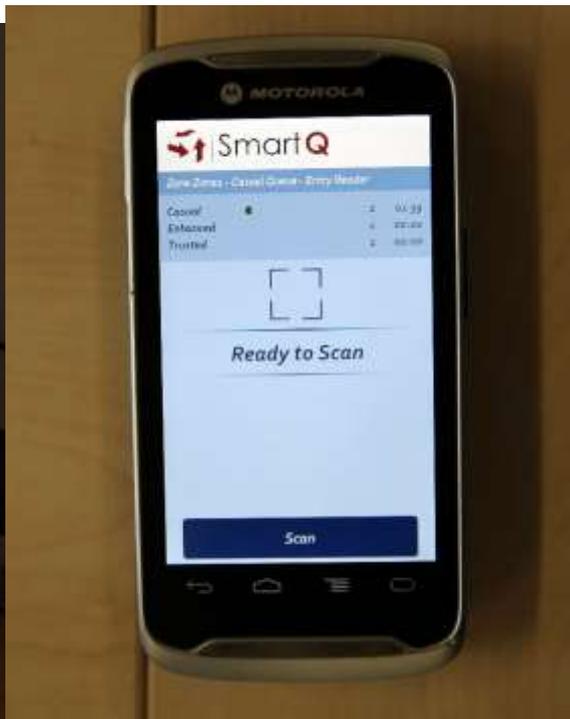
Action Descriptions:

Labels:

NOTIFY USERS IN THIS AREA

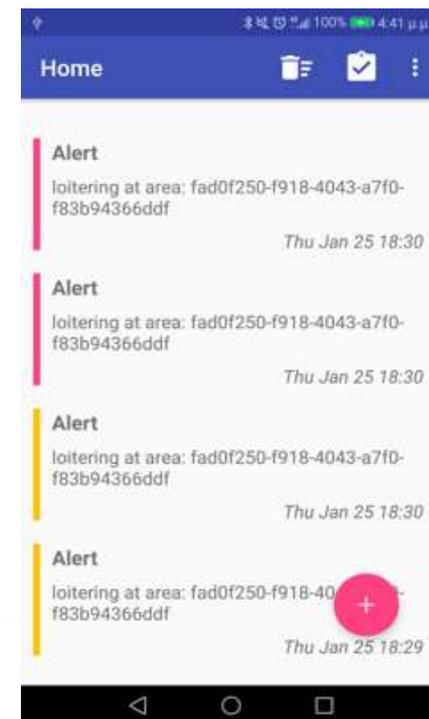
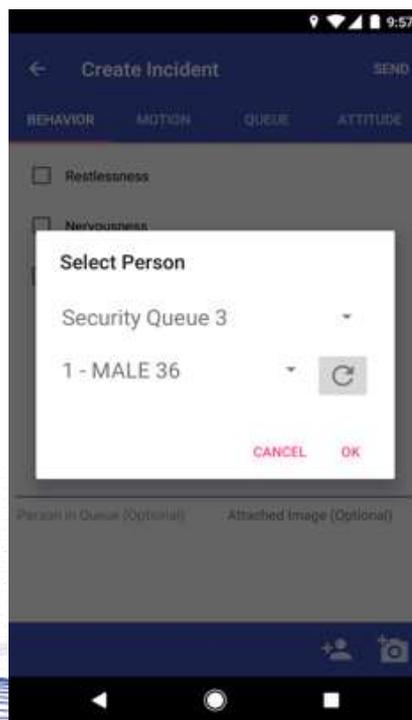
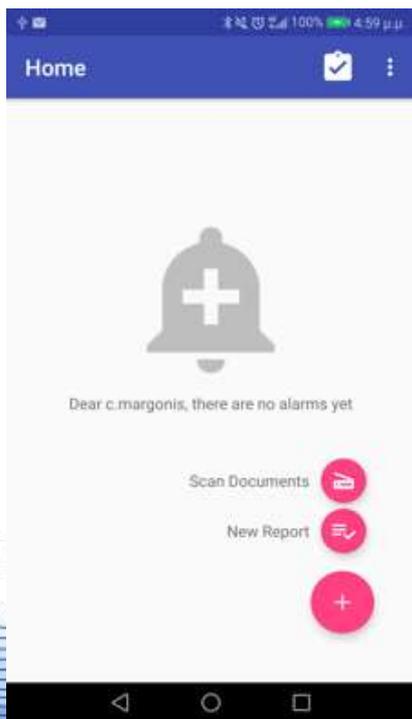
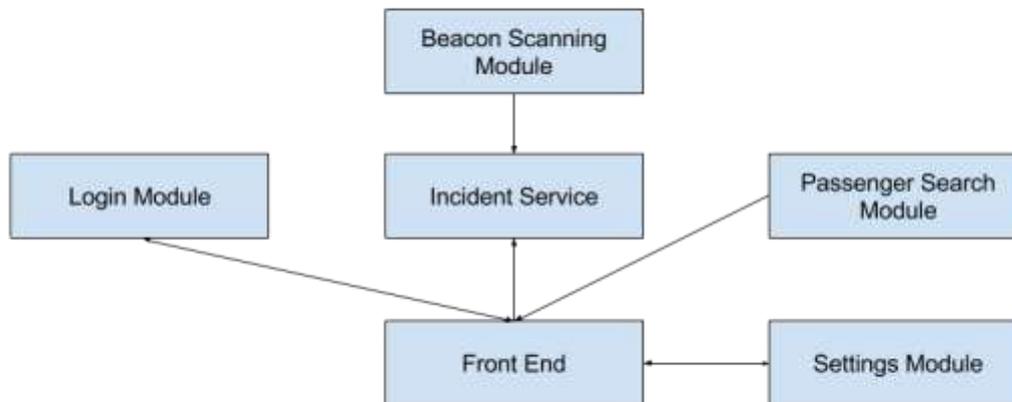


FLYSEC Highlights: TravelDoc - SmartQ



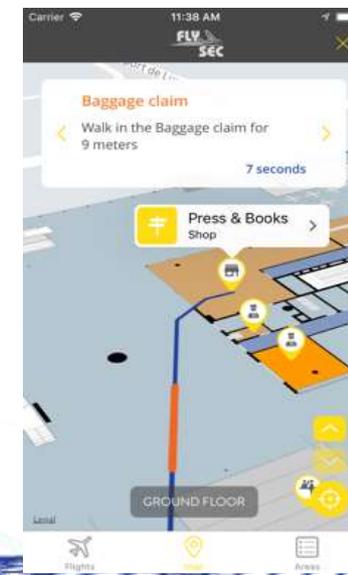
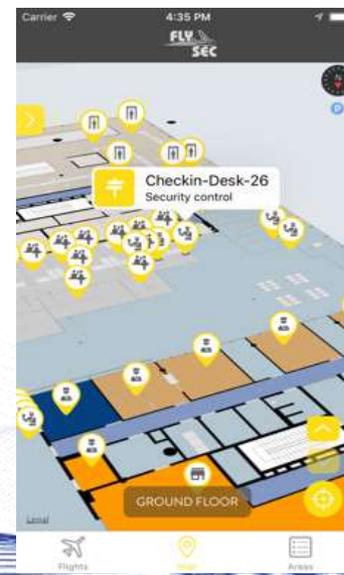
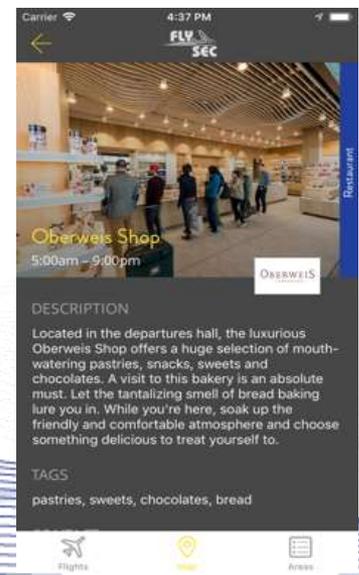
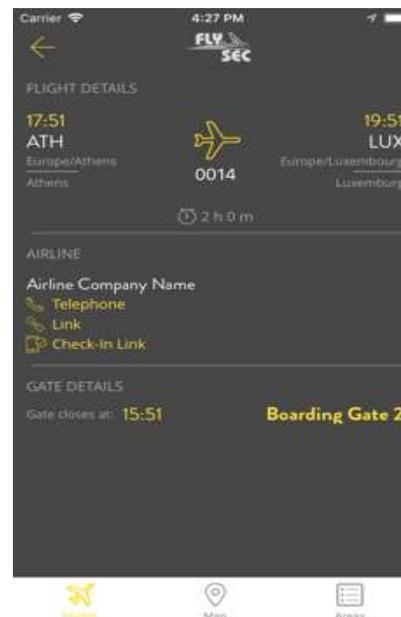
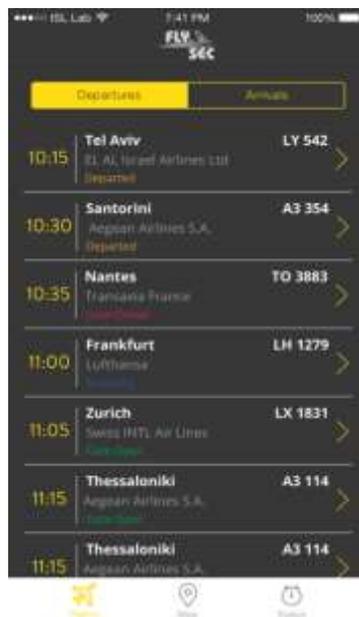
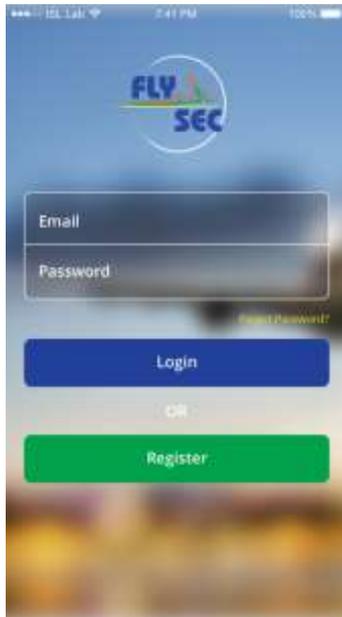


FLYSEC Highlights: Mobile App for Security personnel



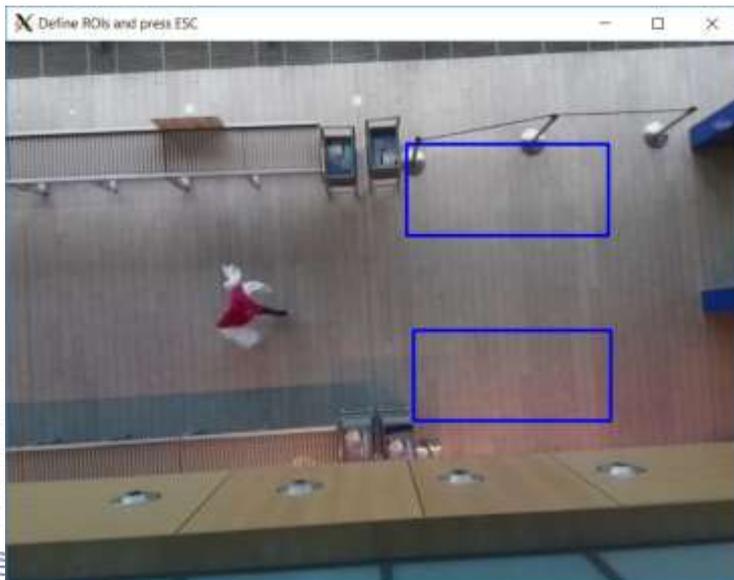


FLYSEC Highlights: Mobile App for Passengers





FLYSEC Highlights: Front end technologies





FLYSEC Highlights: Field Test



Installations and FLYSEC System deployment at an international operational airport terminal.

From the airport entrance...



FLYSEC Highlights: Field Test

...through Security, operated and staffed by actual LuxAirport Security Personnel...





FLYSEC Highlights: Field Test

...to the Gates



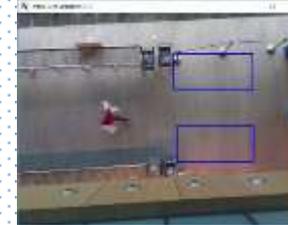


FLYSEC Back End Intelligence...

- The **risk classification service** that assigns the passengers in the FLYSEC categories according to specific behavior indicators
 - behavioral indicators
- An enhanced **situational awareness** fusion service which correlates indicators and generate alerts to the admin portal for the passengers and specific airport areas
- Support of **notification messages** – by taking into consideration user group and/or individuals, location/area type
- **Routing**
- **Web admin portal** (Command and Control)
 - Used by the security personnel of the airport
 - System administrators to manage and monitor all airport-related data
 - Ability to send push notifications to all the other FLYSEC system users
 - Security personnel with different access levels



..and Data Fusion...



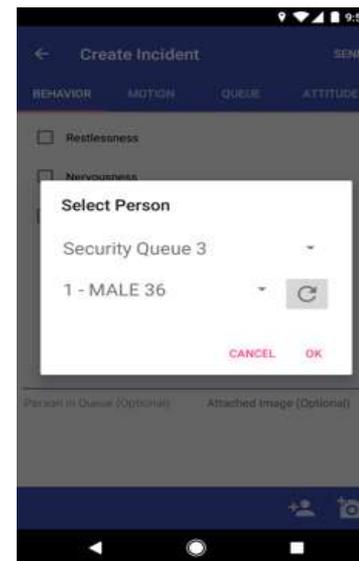
Data Fusion





..with Privacy and Ethics By Design

- When to access: Personal Data accessed only when necessary
- What to access: Only necessary data accessed
- Who? Data Access Plan as per GDPR
- Security up to Aviation standard and regulations
 - Security up to the level of Risk – Proportionate Security, Risk Based Security, a more ethical security
- Differentiation based on how you behave and act, non-discrimination
- Bias and Fairness Detection in Fusion Algorithms



People at Queue

Queue Number	Age	ID	Category	Time	Icons
#1	Age: 52	ID: 123ABCD45	CASUAL	Feb 14, 2017 at 12:49:14	Person icon
#2	Age: 52	ID: 123ABCD45	ENHANCED	Feb 14, 2017 at 12:49:14	Person icon, Wheelchair icon
#3	Age: 28	ID: 123ABCD45	ENHANCED	Feb 14, 2017 at 12:49:14	Person icon
				Feb 14, 2017 at 12:49:14	



Thank you



- ✓ Optimising processes
- ✓ Smarter security
- ✓ Ethical by design

