



CHECK-IN

21 Airports

36 Touchpoints

A smooth check-in experience helps make a good first impression

HOW AIRPORTS USE XOVIS DATA TO MEET SLA OBLIGATIONS

CHALLENGE

As starting point of the customer journey, a smooth check-in experience is a key determinant of passenger satisfaction. Check-in is a highly dynamic and unstructured area. Various stakeholders (airlines, ground handlers etc.) have a stake in check-in procedures. Typically, they have to meet obligations according to a Service Level Agreement (SLA) and face various challenges such as:

- How to expedite check-in procedures?
- How to gauge performance of queues, lanes, sites and different stakeholders?
- How to improve cooperation of airlines, ground handlers and other parties?
- How to live up to expectations of various stakeholders in a dynamic setup?
- How to optimize the utilization of existing capacities?

SOLUTION

Combining Xovis 3D Sensors and software solutions, the Xovis Passenger Tracking System (PTS) is the only queue measurement system on the market to gauge waiting times accurately in dynamic, unstructured check-in situations. The ceiling-mounted sensors count and track all passengers at check-in area. Based on the data from the sensors, the software calculates KPIs such as:

- Queue length/ waiting time per queue (static/ dynamic automated queue detection, see page 2)
- Process time for queues and/ or single check-in desk
- Passenger outflow rates
- Passenger throughput
- Passenger arrival patterns

BENEFITS

By accurately measuring waiting times for dynamic queues in unstructured check-in situations (per flight/ airline/ sector), the Xovis system paves the way for reducing total cost of operation and streamlining check-in procedures:

- Waiting time-related performance integrated with other KPIs
- Optimized number of open check-in counters
- Optimized opening hours of check-in counters
- Optimized desk allocation
- Reduction of purchased counter hours for airlines
- Optimized staff planning and management for ground handlers
- Comparison of common use set-up and self-service bag drop

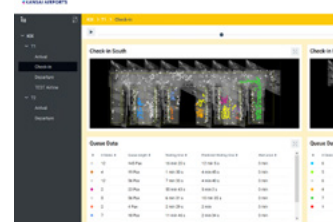
The gathered real-time data is a powerful tool for various stakeholders to monitor the fulfilment of SLAs while increasing the passenger satisfaction.

REFERENCES

ARN	AUH	BMA	CDG	CGN
CPH	DOH	DXB	GOT	HEL
KIX	LGW	MEL	MLA	OOL
ORY	PER	SIN	TFN	VIE
ZRH				



Numerous ceiling-mounted Xovis 3D Sensors can be combined to cover large areas



Xovis' automated queue detection allocates queues dynamically



The broad portfolio of Xovis 3D Sensors meets the architectural requirements of any airport

XOVIS

AIRPORTS SOLUTION SHEET

How does it work?

Long queues make airports look bad and frustrate passengers. Xovis provides airports with a powerful tool to move passengers more smoothly through their facilities, optimize staff and infrastructure planning and ultimately increase customer satisfaction. The combination of Xovis 3D Sensors and software solutions helps improve efficiency all over the airport and prepares the ground for innovative business models.

Counting and tracking passengers anonymously, the Xovis system combines 3D sensors with software solutions to measure the targeted KPIs in real-time. A broad portfolio of Xovis 3D Sensors with ultra-wide viewing angle accommodates the specific architectural conditions of any airport. Mounted on the ceiling, one sensor covers up to 100 m² or 1100 sq.ft. and can be mounted from 2.2 to 30 m or 7.5 to 98 ft. high. A high-resolution 3D image, often also referred to as a stereo image, of the covered/ recorded area is calculated up to 30 times per second, providing the basis on which every person that is entering the covered area is counted and tracked anonymously.

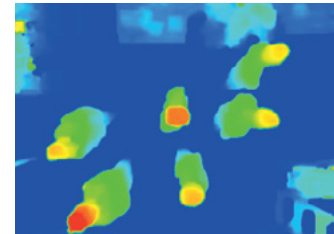
Based on the 3D images computed on the sensor, the software receives data streams from all the installed sensors, calculates and visualizes KPIs such as waiting times and passenger throughput on real-time dashboards. An unlimited number of sensors can be connected into a Multisensor

to track passengers through large areas anonymously continuously. The system also features an automated queue detection that measures waiting times only for passengers excluding staff, meeters and greeters even in unstructured, dynamic multi-queue areas.

Passengers are recognized individually even if they are standing shoulder to shoulder. Constant sample rates of 98% are guaranteed, meaning that 98% of passengers in the covered area are registered. The 3D stereo vision technology does not depend on signal-emitting devices and is highly robust against all kinds of external influences such as shadows, light changes, and heat emissions.

Power over Ethernet (PoE), combining data connection with power in one cable, and a Mean Time Between Failure (MTBF) of 25 years simplify installation/maintenance and keep the total cost of operation low. Implementing FPGA technology, the image processing is performed on the sensor. No video stream leaves the sensors and data privacy is guaranteed. Only a constant stream of moving dots, representing the counted passengers, is sent out. Only one server is needed to run the system with up to 600 sensors. The Xovis system can easily be integrated with other software solutions. For example, waiting times can be exported automatically from the system and displayed on screens at the airport or on the airport's mobile app.

According to the study "Rise to Challenge – The Risks and Opportunities of Digitization for Airports," from Roland Berger, a five-minute delay for 25 percent of passengers at the security checkpoint could induce a drop in retail sales of 2 to 3 percent. People that wait more, spend less.



3D image computed by Xovis 3D Sensor indicating heights and distances by different colors



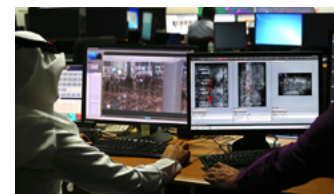
Xovis 3D Sensor, PC2



The Xovis software receives data streams from the sensors, calculates and visualizes the KPIs



Web and mobile clients of the software are also available



The data paves the way to streamline processes such as staffing