Vienna International Airport

Serving almost 25 million passengers per year and located in the centre of Europe, Vienna Airport (VIE) is becoming one of the most important hubs for the growing demand for flights to destinations in Asia and the Middle East.

CASE STUDY

Retail optimization at Vienna Airport

VIE COUNTS ON XOVIS TO TAKE PASSENGER EXPERIENCE TO THE NEXT LEVEL

CHALLENGE

Aiming at increasing passenger satisfaction, Vienna International Airport (VIE) wants to optimize the passenger experience within the airport's retail area. In order to do so, the deployed system is expected to deliver accurate real-time data by measuring the number of people in a large area instead of only estimating it. There are challenging circumstances to achieve this goal:

- Setup in retail areas continually changes
- Objects around restaurants/ shops vary
- Objects at display shift regularly
- Customers behave unpredictably

SOLUTION

With the Xovis Multisensor a person can be counted and tracked continuously in large areas. Combining an unlimited number of Xovis 3D Sensors, the devices virtually act as one sensor providing a database with unmatched accuracy. 140 sensors at thirteen stores empower VIE to let the passengers enjoy an outstanding retail experience. The system delivers data such as:

- Dwell times and customer hot spots
- Wait time at cash registers
- Various live view modes
- Dedicated reports and dashboards

"The Xovis System has way more functionalities than counting in and out. The full coverage of the retail facilities allows us to determine the exact number of people at any time at any place. It is the data being measured, not estimated and based on assumptions, giving us real-time insights on what is going on in an area."

Martin Weghofer,
System Engineer at VIE

BENEFITS

- Improved customer experience in retail areas
- Optimized opening hours of cash registers and reduced queuing time
- Increasing retails transaction based on streamlined queuing management
- Improved store settings based on measured data rather than assumptions
- Stronger focus on customer needs based on enhanced product placement

XOVIS

CASE STUDY

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 130 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.

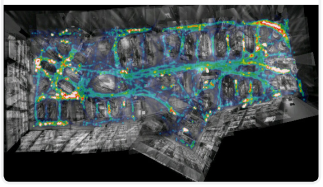
Based on the 3D images computed on the sensor, the software receives data streams from all the installed sensors, calculates and visualizes KPIs such as waiting times and passenger throughput on real-time dashboards. An unlimited number of sensors can be connected into a Multisensor to continuously track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

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.

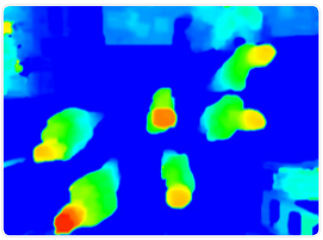
Power over Ethernet (PoE), combining data connection with power in one cable, and a Mean Time Between Failure (MTBF) of 25 years simplify installation/ maintenance and keep total cost of operation low. Implementing FPGA technology, the image processing is performed on the sensor. No video stream leaves 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.

PC2R with WiFi-Module



Xovis Multisensor technology

Web and mobile clients of the software are also available

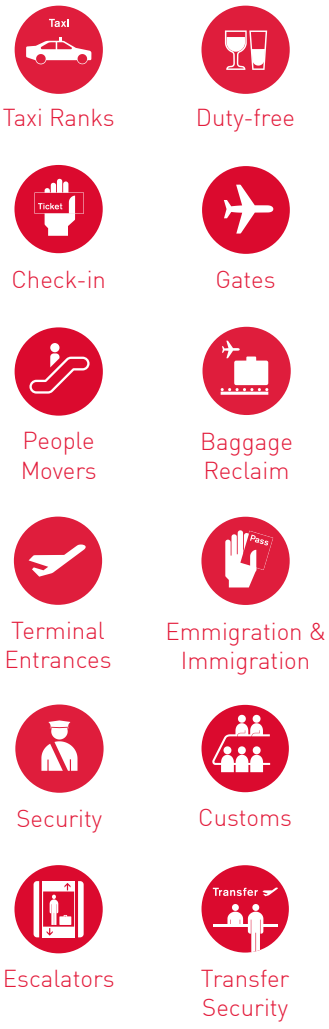


3D image computed by Xovis sensor indicating heights and distances by different colors

CASE STUDY

Technical Data

WORKING PRINCIPLE:	3D stereo vision / distance measurement
INSTALLATION ANGLE:	+/-15° in x-axis +/- 5° in y-axis
OPERATION TEMPERATURE:	0°... 50 °C
WITH OUTDOOR HOUSING:	-20°... 50 °C
STORAGE TEMPERATURE:	-20°... 70 °C
AIR HUMIDITY:	20 ... 80%
CONNECTION:	RJ-45 Ethernet
POWER SUPPLY:	PoE Class 0 / (IEEE 802.3af)
POWER CONSUMPTION:	< 5W
REQUIRED ILLUMINATION:	min. 2 lux
SIZE (LxWxH):	PC2/ PC2R: 13.0 x 9.4 x 3.0 cm PC3: 33.0 x 6.1 x 4.0 cm PC3-O: 38.5 x 9.0 x 8.6 cm
WEIGHT:	PC2: 350 g/ PC2R: 250 g PC3: 600 g/ PC3-O: 1700g
MOUNTING HEIGHT:	PC2/ PC2R: up to 6 m PC3/ PC3-O: up to 20 m



ABOUT XOVIS

Swiss-based Xovis is the market leader in people flow monitoring. More than 65 international airports count on Xovis to measure numerous KPIs such as waiting times, process times and passenger throughput. Based on the gathered data airports optimize the planning of resources and the use of infrastructure. The combination of 3D sensors and software solutions stands out with unmatched accuracy, reliability and ease of use. The system includes a sophisticated data privacy concept and does not depend on signal emitting devices. Founded in 2008, Xovis has evolved from a three-man start-up to a high-tech company with more than 80 employees.