Take off with the market leader

The no.1 in people flow monitoring

www.xovis.com
Passenger Tracking System (PTS)

Xovis PTS is the most complete solution on the market, measuring all relevant KPIs along the entire passenger journey and enabling airports to optimize customer satisfaction.

Xovis PTS measures crucial KPIs such as:
- Passenger counts
- Queue length
- Dwell time
- Waiting time
- Passenger journey (curb to gate)
- Process time
- Desk/lane activity
- Passenger outflow rate

Continuous coverage is guaranteed in:
- Buildings with ceilings up to 30 m
- Areas up to 100 m² per sensor
- Large areas, where an unlimited number of sensors are combined in a multisensor
One system for all purposes

Xovis PTS combines the Xovis 3D sensors with the Xovis Suite (XS) software. Based on the 3D images computed on the sensors, the Windows server-client software Xovis Suite (XS) calculates and visualizes KPIs such as waiting times and passenger throughput in real time. Web and mobile clients are also available.

UNMATCHED ACCURACY

The 3D stereo vision technology does not depend on signal-emitting devices and is highly robust, handling external influences such as fluctuating light and heat conditions without wavering from its task. Passengers are recognized as distinct from one another even if they are only 20 cm away from each other. Xovis PTS guarantees constant sample rates up to 98%, meaning that 98% of passengers in the covered area are registered by the system.

GUARANTEED DATA PRIVACY

Due to the Xovis PTS unique 3D Stereo Vision Sensor with a powerful on-sensor person tracking engine, data privacy is always guaranteed. No video stream leaves the sensor. The only data sent out by the sensor is a constant stream of moving dots, each dot representing a passenger.

LOW TOTAL COST OF OPERATION

Xovis PTS is a thoroughly industrialized and operations-proven system that is easy to use. Thanks to the direct image processing on the sensors, only one server is needed to run the Xovis Suite (XS) software. Xovis PTS has a mean time between failures (MTBF) of 25 years and does not rely on signal-emitting devices, making it a future-proof investment in Swiss quality.

AUTOMATED QUEUE DETECTION

In unstructured multi-queue areas, passengers mix with other groups. As shown on the next double page, Xovis PTS measures waiting times only for passengers, as the system detects queues automatically and excludes staff, meeters and greeters. Even layout changes are detected automatically.

UNLIMITED COVERAGE

The broad portfolio of Xovis 3D sensors with their wide angle of view accommodates the specific architectural conditions of any airport. An unlimited number of sensors can be combined in a multisensor for large areas.
Why airports count on Xovis

HIGHER PASSENGER SATISFACTION

Airports face fierce competition. Xovis PTS paves the way to standing out active passenger flow management, optimized passenger experience and ultimately increased passenger satisfaction. The gathered data lays the foundation for a streamlined planning of both staff and facilities in every part of any airport.

EXPECTATION MANAGEMENT

Passengers are much more likely to put up with waiting times when they know what they have to expect. Therefore, consistent expectation management is the key to passenger satisfaction. Airports that use digital signage to display accurate waiting times guide passengers more smoothly through their facilities. The unmatched accuracy of Xovis PTS enables airport operators to measure and predict waiting times.

OPERATION OPTIMIZATION

Based on the real-time passenger flow data gathered with Xovis PTS, airports also have a powerful tool at hand to optimize the use of assets and the planning of resources including:

- Right number of staff on duty
- Dynamic allocation of check-in facilities
- Smart, demand-driven cleaning frequency

ACTIONABLE INSIGHTS

The real-time data is conveyed on dashboards with multiple types of live views tailored to the needs of the stakeholders. The awareness and understanding of the situation in real time empowers them to act immediately.

BEYOND THE AIRPORT BUSINESS

The measured KPIs are of great value not only for airport operators, but also for many of their partners and suppliers. For instance, ground service providers are often interested in buying check-in data for their planning. Xovis can help increase efficiency in non-aviation related sections of airports. In retail areas, the system measures KPIs such as the number of customers and dwell times.
Exemplary use cases

OSAKA KANSAI (KIX), JAPAN

From 2009 to 2019, Kansai International Airport saw yearly double-digit growth – going from 13.5 million to over 30 million passengers. The airport met this change with digital transformation and people flow management. The Xovis installation at KIX includes over 500 Xovis 3D stereo vision sensors. Over 360 sensors are combined into one multisensor covering the entire 4th floor of KIX Terminal 1. The Xovis hardware and software package allows for anonymous, real-time tracking of passengers – without facial recognition tools. Xovis software calculates and visualizes critical areas for operations staff.

The real-time info on passenger flow empowered operations staff to take the measures needed to reduce peak wait times from 45 to just 15 minutes. Thanks to digitally informing passengers of current wait times at various sites, passenger flow became more balanced. Ultimately, by granting airport stakeholders access to Xovis data, KIX provides a tool that further optimizes coordination, capacity utilization and passenger satisfaction.

HELSINKI (HEL), FINLAND

Due to its geographical location, Helsinki Airport has evolved to one of Europe’s largest gateways to Asia and vice versa. In 2019, around 20% of all passengers between Europe and Asia were traveling through Helsinki Airport. With a minimum connecting time of as little as 40 minutes, HEL is among the airports with the shortest transfer times in Europe. Enabling passengers to master all touchpoints within that time poses a significant logistical challenge for airport operator Finavia.

Finavia started collecting as much data as possible to address this challenge, but touchpoints proved difficult until they met Xovis. Now thanks to Xovis technology, the operations controllers at Helsinki Airport can continuously monitor how the passenger volume evolves at each of the relevant touchpoints and make ad hoc decisions accordingly. With its data-driven understanding of the whole airport, Finavia can implement its resources optimally, improving the overall satisfaction of the passengers and employees at the airport.
A BROAD PORTFOLIO
The PC2/PC2R/PC2S, PC3 and PC4 with the numerous product variants, cover installation heights from 2.2 m to 30 m, allowing up to 100 m² of effective tracking area to be monitored with a single sensor. The coverage capabilities of the full portfolio are described in the Xovis Selection Guide.

MULTISENSOR
The Xovis multisensor combines an unlimited number of sensors with varying mounting heights and angles; it acts as one overall sensor and tracks passengers continuously through large areas. Xovis has successfully implemented numerous demanding multi-sensor solutions in many airports around the globe.

WIDE RANGE OF ACCESSORIES
The robust 3D sensors of the PC-Series can be mounted directly onto the ceiling. Also, Xovis offers a wide range of accessories to meet every possible installation requirement. Please ask for the Accessories brochure.

TECHNICAL DATA
- Working principle: 3D stereo vision distance measurement
- Installation angle: +/- 15° in x-axis  
  +/- 5° in y-axis
- Operation temperature: 0°C...45°C
- With outdoor housing: -25°C...40°C
- Storage temperature: -20°C...70°C
- Air humidity: 20...80%
- IP protection: IP40 / IP65 (outdoor)
- Connection: RJ45 Ethernet, cat.5e
- Power supply: PoE Class 0  
  (IEEE 802.3af)
- Power consumption: < 5W
- Required illumination: 2 lux / 9 lux (outdoor)
- Size [LxWxH]: PC2 / PC2R / PC2S: 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  
  PC4: 57.5 x 7.2 x 4.0 cm
- Weight: PC2: 350 g  
  PC2R & PC2S: 250 g  
  PC3: 600 g / PC3-O: 1700 g  
  PC4: 1245 g
- Mounting height: PC2 / PC2R / PC2S: up to 6 m  
  PC3 / PC3-O: up to 20 m  
  PC4: up to 30 m
The Xovis Suite (XS) is a Windows server-client software, which receives data streams from all installed sensors to calculate the needed KPIs and visualize them in the user interface, the XS client. The software is installed on a server at the customer’s premises. Remote access is needed for maintenance and support. One standard server can handle up to 600 sensors.

**FUNCTIONALITIES**

Based on the data from the sensors, the Xovis Suite (XS) includes the following functionalities:

- Calculation of KPIs
- Alerts based on customized thresholds
- Reports [Microsoft Excel]
- Interfacing with other software
- Sensor management
- System management and monitoring

As mentioned previously, the gathered data can also be displayed via web and mobile clients.

**WEB CLIENT**

The available web client features real-time dashboards and also works on mobile devices. As shown in the picture below, the user can switch between the various covered areas and display several KPIs.

**INTEGRATION**

The Xovis Suite (XS) 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.
These customers count on Xovis: