In-Store Analytics Operations Module

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BOSCH
Invented for life

▶ Intuitive dashboards with performance indicators and visualizations for operations managers

▶ Reliable and anonymized person-level traffic data through advanced camera-based people-tracking, and cloud-based path analytics

▶ Hosted In-Store Analytics platform, operated, secured and maintained by Bosch

▶ Scales to the even the largest retail stores, with high camera counts

▶ Remote device and data monitoring service to ensure data quality

In-Store Analytics from Bosch is a hosted service solution that provides retailers with actionable insights into store traffic, and so helps to optimize merchandising and store operations.

As part of the solution, Bosch IP panoramic cameras are installed to provide detailed coverage of the retail floor.

The cameras use on-board Intelligent Video Analytics to track shoppers' movements, and their position data, anonymized, is sent to the Cloud where the movements are analyzed.

Actionable dashboards for both merchandisers and operations managers are shared with the retailer through customized web interfaces.

Unlike many systems that need on-site PCs to pre-process the video streams (thus limiting their capacity to a few cameras per site), In-Store Analytics easily scales to cover even the largest retail stores and multi-store chains, with high camera-counts.

The Operations Module provides operations managers with insights into store and department level traffic to create more effective staff schedules, and measure the performance of customer service.

System overview

In-Store Analytics from Bosch enables Retailers to build up traffic intelligence across multiple stores, with the following components:

- **Site setup service**
  Creation of a camera plan and remote system calibration tailored to the individual site, for the highest data accuracy.
- **Monitoring and storage service**
  Cloud data storage and constant monitoring of device health and data quality.
- Operations Module
  Browser-based application for operations managers to gain actionable insights into store traffic.

Functions

Site setup service
- Creation of a camera plan with camera positioning and orientation tailored to the intelligence requirements of the individual site.
- Remote calibration of all devices, and cloud-based algorithms to achieve high data reliability.

Operations Module
- Browser-based application.
- Located at <base URL>/retail.

- To select store and department entrances via the **Organizer** menu, and understand store and department performance via the **Store Insights** menu.

Traffic meter

- Application:
  - Identify the busiest times, where more staff is needed to capitalize on high traffic influx.
  - Correlate traffic data with sales data to calculate browser/buyer conversion rates and assess the performance of customer service.
- Configuration:
  - Define entrances on the floorplan using a graphical marking tool.
  - Select dates and timeframes for analysis.
  - Select targets for analysis e.g. store, floor, door.
- Insight:
  - Visualize traffic in and out, in both graphical and tabular form. Change time scales as required, from an aggregated overview down to 15 min granularity.
  - Compare traffic across targets of analysis, for example, different stores.
  - Export CSV files of analyses at different granularities of area and time scale.

Queue Meter

- Application:
  - Monitor queue performance across multiple stores.
  - Quickly identify stores with declining queue performance.
  - Use multiple queue metrics to understand why queue performance is declining.
- Configuration:
  - Define waiting areas in front of counters or checkouts using a graphical marking tool.
  - View weekly or daily queue dashboards across one or all of the stores.
- Insight:
  - Access weekly or daily cross-store dashboards, highlighting low performers which need to be addressed.
  - Drill down into low-performing stores to analyze line length, waiting time and checkout time in detail across business hours and weekdays.
  - Export CSV files for further analysis.

Data Export and API

- Schedule regular CSV exports, for example daily, to specified secure S3 buckets of store-traffic statistics.
- Use the RESTful data API to retrieve In-Store Analytics data and use it within your business intelligence tools.

Monitoring and storage service
Monitoring

- Traffic data is constantly monitored for quality and completeness.
- We correct irregularities remotely whenever possible, and provide notification whenever local actions are required.

Cloud Storage

- Cloud storage of raw position-data, and processed Merchandising Module data, for 2 years.

- Storage of raw position data lets you compare current data with all the historical data for the same demarcated areas since the system was connected.

Technical specifications

Network
To connect the IP IVA Cameras to In-Store Analytics, an unrestricted connection from the store-network to the internet is needed. If firewall restrictions are in place, please refer to the In-Store Analytics Network Manual for further network specifications.

Bandwidth
Bandwidth depends on store traffic. Typical values per camera are:

Peak upstream in Mbit/s	0.22
Average upload in MB per day (24 hrs)	900
Average upload in GB per month	27
Additional upload capacity per site for configuration and maintenance purposes, in Mbit/s	2

ℹ️ Notice

Wireless internet connections are not recommended and may lead to loss of position data due to lower availability caused by uncontrollable factors, such as the weather or the number of GSM users in the area.

Camera compatibility and settings
Bosch In-Store Analytics is optimized to work with FLEXIDOME IP panoramic 7000 MP IVA (Intelligent Video Analytics) using firmware version 6.30 and later.

System Setup

- Setup for data availability:
  To enable recovery of position data, the system setup must allow for a minimum of 3 days' backup of local recording. This can be achieved through the following local recording solutions capable of recording position data:

Memory Cards	Verify which memory cards are supported on the respective camera's datasheet. For example the FLEXIDOME IP panoramic 7000 MP supports cards from 32GB SDHC to 2TB SDXC . An SD card of Class 6 or higher is recommended for HD recording.
Digital Video Recorders	DIVAR IP 2000/6000 DIVAR IP 5000 DIVAR IP 7000 (including Bosch VMS)

- Setup for data quality:
  In order to track persons accurately Bosch provides a setup service for each new site, creating a camera

plan which indicates all camera types and their positions. Only sites thus planned in partnership are supported. The cameras need to be installed exactly as per the camera plan, in accordance with In-Store Analytics Installer Manual.

Browsers
Compatibility of web applications has been tested with latest versions of the following browsers: Firefox, Firefox ESR (Extended Support Release), Internet Explorer, Chrome.

Ordering information

CBS-INSA-SETUPL One time Site Setup Fee
Site setup service for each new store.
Order number **CBS-INSA-SETUPL**

CBS-INSA-OPERAL Yearly Operations Module License
One year license including Monitoring and two year storage service and Operations Module.
Order number **CBS-INSA-OPERAL**

CBS-INSA-COMBOL Yearly License Combo for two Modules
One year license including Monitoring and two year storage service, as well as Merchandising and Operations Module.
Order number **CBS-INSA-COMBOL**