

retail Intellect

RETAIL INTELLECT: COMPREHENSIVE
VIDEO SOLUTION FOR RETAIL

- Monitor customer activity
- Track visitor traffic
- Improve operational efficiency
- Prevent theft and fraud
- Reliably protect property, staff and customers

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SAFETY AND MARKETING, IN A SINGLE PACKAGE

HOW RETAIL INTELLECT STREAMLINES OPERATIONS, MAXIMIZES PROFIT, AND REDUCES EXPENSES?

Retail Intellect is a comprehensive, flexible solution for retailers that matches technologies for ensuring point-of-sale safety and security with video analytics for gathering priceless marketing information.

Retail Intellect supports automatic reactions to different events as well as a range of forensic video analytic tools. You can add an unlimited number of servers and remote workstations to Retail Intellect

systems. The result? A protection system that is perfectly adapted to the needs of your point of sale or retail chain.

With Retail Intellect, retailers can: supplement strategic and short-term planning by capturing and cataloging real-world marketing information, reduce expenses, improve return on capital, gain a powerful system for managing company resources, and boost the bottom line.

What does Retail Intellect do?

- Monitoring of checkout transactions.
- Video surveillance combined with powerful, dynamic analysis, in both live and recorded video modes.
- Queue management.
- Visitor counting.
- Identification of store «hot spots» where visitors congregate.

The first two of these technologies help to ensure safety and security: video from a camera covering a checkout area can be synchronized with cash register information, which reduces the risk of theft and fraud by customers, employees, and vendors as well as human error.

The latter three technologies assist with a range of marketing tasks for retailers, including 1) efficient inventory management, 2) high-quality customer service via proper allocation of staff resources, and 3) space planning at stores and warehouses.

One of the most liberating features of Retail Intellect is centralized monitoring and analysis of all of a retailer's locations. This is implemented through **Web Reports**, which can be securely accessed from any ordinary web browser on any Internet-connected device, allowing you to:

- View reports on cash register events, with corresponding video and receipt text.
- Get information on visitor activity at a retail location as measured by the «hot spot» and «cold spot» detection tool.
- Get statistics on the number of visitors to a retail location or store department during a defined time interval.
- Get information about the number of customers in cash register lines.
- Print and e-mail reports.

WEB REPORTS CAN BE MADE AVAILABLE BOTH TO OPERATORS AT A CENTRAL MONITORING HUB AND TO MANAGERS, SECURITY STAFF, AND EXECUTIVES FOR REMOTE ACCESS TO NECESSARY STATISTICS.

Another benefit is that Retail Intellect can be deployed on existing surveillance equipment – CCTV, IP-based, or both – which is an enormous budget-saver for companies.

Results for security and business with Retail Intellect systems:

- Big gains in customer satisfaction
- More effective promotions, based on empirical knowledge of what has worked (or has not worked) in the past
- Reduction in theft and fraud
- Automated queue management and planning for peak purchase times
- Improvements in store layout
- More effective placement of merchandise

AND THE PAYOFF: IMPROVED STORE OPERATIONS AND A JUMP IN PROFIT!



VISITOR COUNTER

MORE EFFECTIVE PLANNING OF MARKETING PROMOTIONS AND STAFF ALLOCATIONS



- Do you regularly count the number of visitors to your store?
- Are you sure you know the peak hours when the most visitors come?
- Do you use visit statistics to plan staff workloads and schedule promotions?

The Visitor Counter in Retail Intellect uses video footage to count the number of people who have entered or exited a store, as well as those inside a designated area inside a store.

Why use the Visitor Counter?

- Know how many visitors there are. Accumulate and analyze data on how many people visit the store and when.
- Compare visit statistics on different days of the week, for improved planning and marketing.
- Improve customer service by smartly planning staff hours around peak times.
- Perform long-term and short-term strategy planning based on statistics about store visits.
- Compare performance between stores.
- Combine visitor data with transaction information in order to calculate the conversion rate at which visitors follow through on purchases.

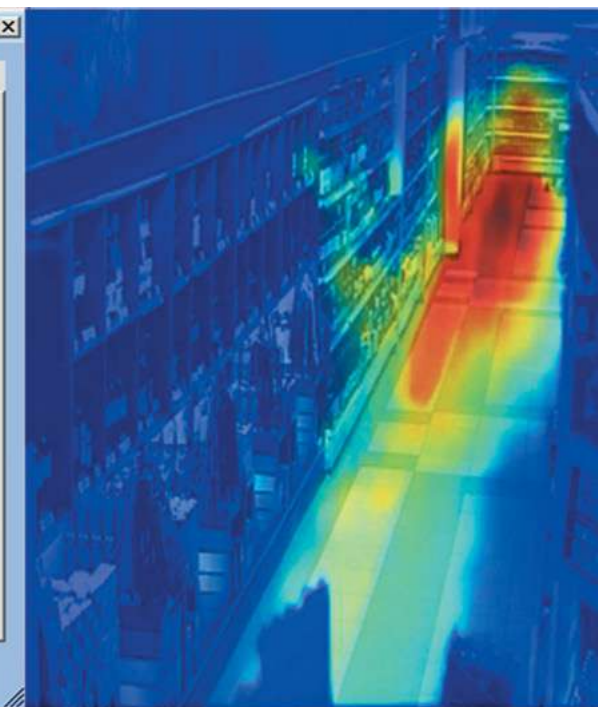
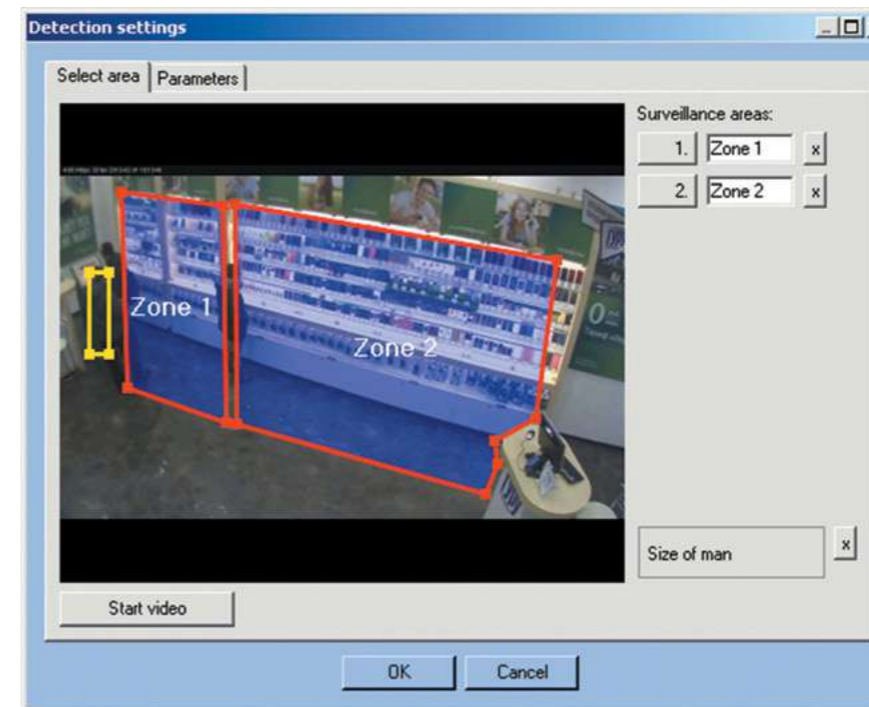
«HOT SPOT» & «COLD SPOT» DETECTION TOOL

A POTENT WAY TO UNDERSTAND CUSTOMER BEHAVIOR

- Do you know which areas of your store attract the most visitors?
- Would it help sales to know where in the store your customers linger longest?
- Do you plan promos and merchandise placement based on information about the most trafficked areas of your store?

The hot spot/cold spot detection tool in Retail Intellect is designed to gauge visitor interest in different areas of a store: stands, showcases, shelves, advertising areas, etc.

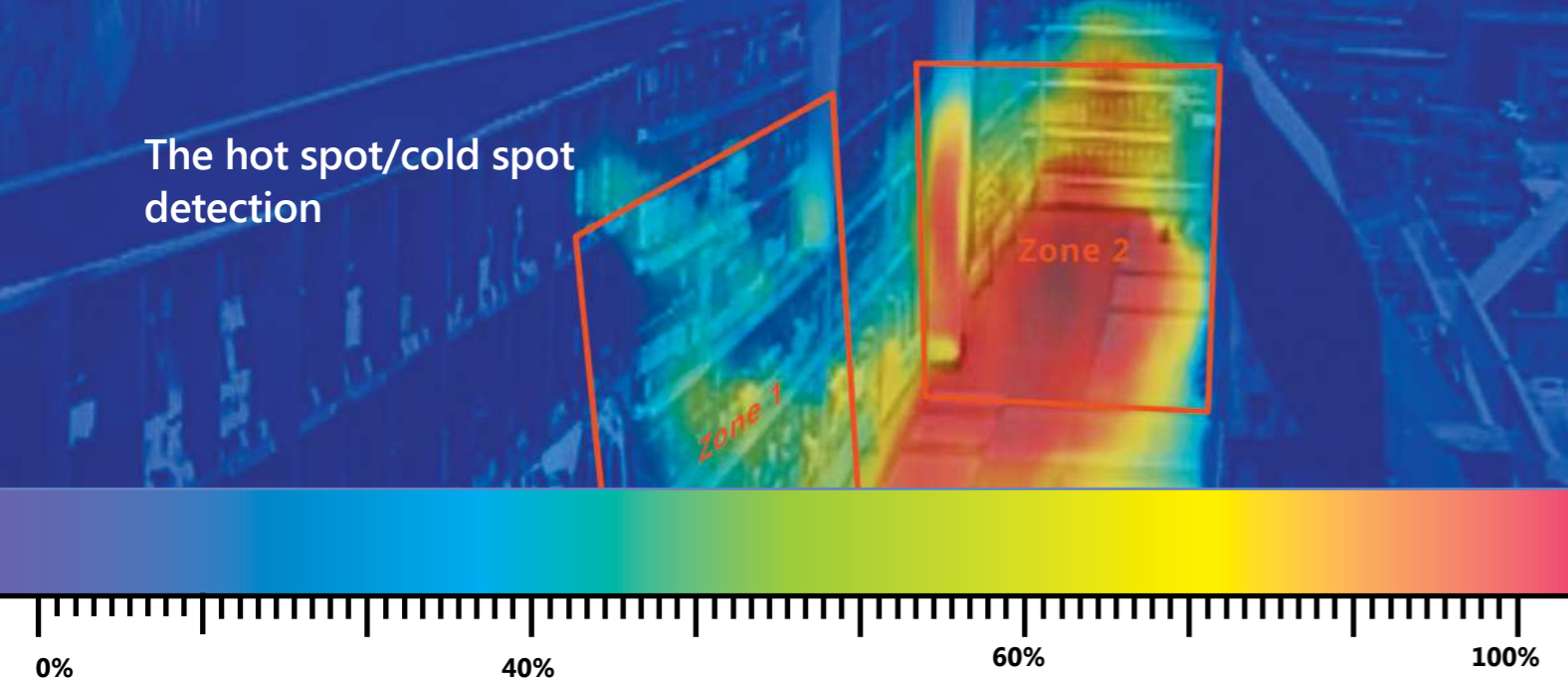
Based on the video received from cameras, the detection tool determines where visitors stop as well as how long they linger. The ratio of total stops at a place of interest to the total period observed is reflected in the visitor activity value for the place in question.



Why use the hot spot/cold spot detection tool?

- Evaluate the effectiveness of direct advertising (LCD advertising, booklets, advertising posters, banners, etc.) by measuring the duration of visitor presence and calculating the advertising ROI (return on investment).
- Measure how effective promotions are: 1) compare different promotions for a product held at different times and 2) identify the areas of the store best suited for events and promos.
- Based on information about the busiest store areas, optimize store layout by eliminating bottlenecks and less-trafficked areas.

The hot spot/cold spot detection



- Measure the effectiveness of product choice and placement, in order to find the best price proposition for manufacturers.
- Compare the results of placing a product in different areas of a store.
- Build on successful tweaks to store layout, product selection/placement, and promo events to replicate improvements at other stores.
- Allocate staff hours and locations efficiently.
- Gauge store efficiency and visitor load.

QUEUE LENGTH DETECTION TOOL

A BOOST IN OPERATIONAL EFFECTIVENESS

- *Do you monitor the lines at cash registers in your stores?*
- *Are you worried about losing sales due to customers giving up at the sight of too few open registers?*
- *Do you use line length information to improve business efficiency and customer satisfaction?*

The Queue Length Detection Tool in Retail Intellect is designed to measure the load on checkout registers. The detection tool derives data from video sent by a camera aimed at the checkout area.

Why use the Queue Length Detection Tool?

- Get real-time information on how busy cash registers are, allowing you to: **1)** optimize staff working schedules, **2)** redesign floor layouts if necessary, and **3)** calculate the necessary number of cash registers based on actual customer demand.
- Improve customer satisfaction by quickly reacting to changes in the checkout area and activating additional cash registers.
- Perform both short-term and long-term management of human resources based on historical data on cash register loads during certain time periods, seasons, days of the week, etc.



MONITORING OF CHECKOUT TRANSACTIONS

LOSS PREVENTION AND IMPROVED SERVICE

- *Do you receive automatic notifications of alarms or suspicious events at cash registers?*
- *Do you use tools to reduce theft and fraud at the time of purchase?*
- *Do you have an effective system for resolving disputes with customers?*

Thanks to monitoring of checkout transactions, Retail Intellect allows synchronizing information from a cash register with the video from a camera overhead.

The data from the cash register is analyzed to check for suspicious events, theft, fraud, etc. Any retailer knows about the kinds of events that can serve as «red flags» – here are some of the most common situations:

- Fraud with credit and discount cards.
- Theft of cash disguised as giving change.
- Failure to print a receipt or ring up part of a product.
- Change in receipt contents in favor of the cashier.
- Barcode swapping with a cheaper product.

- Unauthorized use of the discount option.
- Ruses that allow accomplices to carry goods out of the store without paying.
- Cancellation of a receipt (canceling a sale) after the customer pays, pocketing the money.
- Acceptance and pocketing of a returned product without ringing up the refund transaction.
- Use of fake credit card slips.
- Fake refunds / returns.

How does Retail Intellect help to stamp out fraud?

During surveillance in real time or when viewing previously recorded video, the operator sees video of the transaction on the screen, which shows the customer at the register and text information as captions. This information includes the text of the receipt and events at the cash register that are not displayed in the receipt, such as opening of the cash drawer or manual entry of a product code. This approach allows seeing the full picture of events occurring at the point of sale.

There are many reasons to trust Retail Intellect, but perhaps the biggest one is this: if left with just the naked eye for monitoring video feeds, even the most experienced and trustworthy operator runs the risk of human error and not noticing an important event! A solution to this problem is supplied by the robust system in Retail Intellect for automating system processes and writing scripts to react to defined events.

One automatic reaction, for example, could consist of generating an alarm about an important event that occurs at a cash register and displaying it on the operator's screen. As crooks cook up new fraudulent schemes, you can respond in record time, by entering potentially dangerous events in the system and programming automatic reactions to them. Now your security staff can stay a step ahead of the bad guys!

Checkout transactions monitoring

SEARCH OF CAPTIONS. Retail Intellect allows searching for recorded video based on caption contents. Searched text includes all text information contained in receipts. This means you can search by product name, discount code, cashier number, receipt amount, etc.

REPLAYS AND FREEZE-FRAMES. When viewing recorded video, you can adjust playback speed and view individual recorded frames – such as when a particular product is swiped – so you won't miss a single detail.

CUSTOMIZABLE SEARCH AND REPORT DISPLAY.

You can use standard queries or create your own when searching for previously recorded video. The query result will be displayed on the screen as a list of retrieved receipts. You can then view the video fragment corresponding to the selected receipt, together with captions, as well as print the receipt text or still frame for a selected receipt line or save it to a file.

The set of standard queries in the system includes searches by:

- Product list.
- Product returns/refunds.
- Receipt total.
- Number of receipt items.
- Discount amount.
- Product weight.
- Multiple item swiping.
- Discount information.



- Product code, list of all receipts during a specified time period.
- Total receipt amount within a selected range.
- Report on all products.
- Canceled sales.
- Cashier number/last name, or for all cash registers simultaneously.
- Receipt number and product name/code.
- Presence of multiple identical products in a receipt.
- Presence of certain products in a receipt.
- Product price.
- Canceled sales.
- All receipts for credit and discount cards.
- Canceled receipts (with negative amounts), canceled receipts (with receipt numbers), and double-swiped products.
- Ten most sold products.
- Sales per time period.
- Receipts with canceled items.
- Top products by sales amount.
- Top products by quantity sold.
- List of all postdated receipts.

AUTOMATIC HIGHLIGHTING. To make sure that operators don't miss any events, you can designate special text that, when found in the captions of a transaction, will be highlighted in a unique color. For example, such text could be the name of a certain product or the word "canceled". This function improves efficiency and reaction times for installations with real-time video surveillance.

Why monitor checkout transactions?

- Minimize losses by creating scripts for your security system to react instantly to potentially dangerous situations.
- React quickly to alarms in real time, preventing theft and fraud and reducing losses.
- Efficiently monitor staff and cash register actions.
- Improve customer service.
- Resolve disputes with customers in a more efficient way.

SMART SURVEILLANCE FOR RETAIL

VIDEO PROTECTION AND SECURITY 24 HOURS A DAY

- Do you use video surveillance to prevent theft, vandalism and other incidents?
- Do you monitor events in staff areas and on the store floor after working hours?
- Does your security system include tools for minimizing the room for human error?



Retail Intellect allows creating a video surveillance system with an unlimited number of cameras, servers, and operator and administrator workstations. Equipment can be connected to video servers via a LAN or over the Internet. Remote management and administration allow setting up a central monitoring hub for collecting information from all of your chain's stores.

Retail Intellect supports both CCTV and IP cameras and servers – over 1,500 models from various manufacturers can be plugged in without a hitch (and the list of integrated hardware is constantly growing). POS Intellect also incorporates support for the ONVIF industry standard and MJPEG, MPEG-4, and H.264 video codecs. Here is how standards compliance pays off for you: You can efficiently budget for diverse camera types based on the type best suited for the job, whether it's expensive IP hardware for resolution-intensive areas (such as cash registers) or CCTV cameras for elsewhere, and reduce security costs by smoothly integrating Retail Intellect with the cameras you already have installed.

Retail Intellect also allows to perform remote video surveillance and viewing of recorded video. You can even manage PTZ cameras through a web browser on your PC – or from your Android or iOS device.

VIDEO ANALYTICS

QUICK REACTIONS TO ALARMS AND EFFICIENT POST-ANALYSIS

Rich tools for video analytics in Retail Intellect automate video surveillance and reduce the room for human error inherent to less advanced methods. With over 10 forensic detection tools available, you can create a reaction script of any complexity to identify any future suspicious events at a point of sale. Meanwhile, the operating detection tools give a signal in case of anything that impairs operation of your cameras: anything from a camera going offline to excessive interference that prevents event logging. Retail Intellect also supports the on-board video analytics bundled with IP cameras by various manufacturers.

Intellect Search makes it possible to find video nearly instantly based on criteria that you set regarding object behavior in the field of view. If you have ever had to rewind hours of video to find an event of interest, this will be a massive timesaver – and like nothing you have ever seen before!

Why choose Retail Intellect for your video surveillance system with forensic video analysis?

- Identify visitors and employees who loiter by showcases, shelves or other store areas for a long time or without a valid need to do so. This is the first step for taking quick preventive measures to stop theft,

misbehavior, and inappropriate staff conduct.

- Pinpoint unusual activity in store departments and street/sidewalk areas, for timely reaction to attempted intrusion, burglary, and vandalism.
- Identify vehicles that loiter for suspiciously long periods in loading dock areas.
- Keep vigilant against terrorist threats by being notified of lost and abandoned items.
- Monitor when a camera goes offline, which may indicate a criminal threat.

INTEGRATION

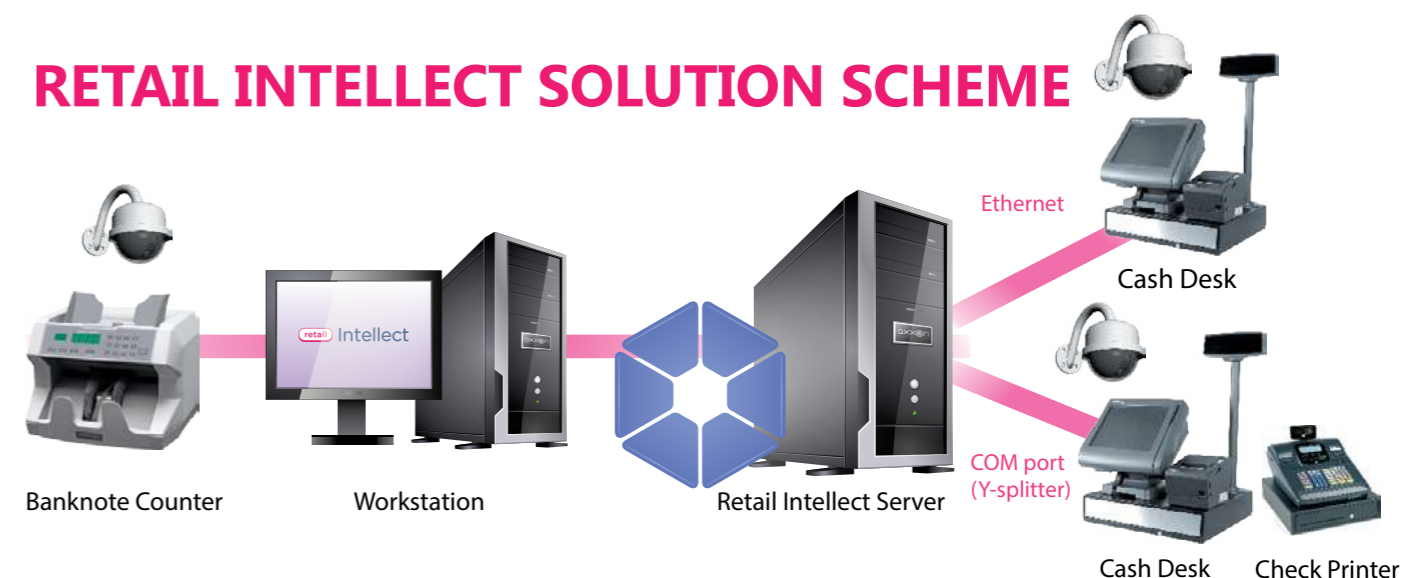
OPTIMIZE EXPENSES WITH A VAST RANGE OF SECURITY HARDWARE TO CHOOSE FROM

Retail Intellect allows integrating access control and security/fire alarm systems in a single system alongside video surveillance and transaction monitoring. If your company's current system is not in the list given below, AxxonSoft may be able to add support for it by special request.

MANUFACTURERS OF TRADE AUTOMATION SYSTEMS INTEGRATED WITH RETAIL INTELLECT SOFTWARE

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|---|--|--|
| Wincor Nixdorf <ul style="list-style-type: none"> ▪ Wincor Latvian ▪ Wincor Nixdorf BEETLE(Spanish) ▪ Wincor Nixdorf BEETLE MM(Spanish) ▪ Wincor Nixdorf BEETLE BD (Spanish) ▪ Wincor Nixdorf BEETLE (K) ▪ Wincor Nixdorf BA63 ▪ Wincor Nixdorf BEETLE/M2 - Posnet TH230+ FV EJ | Micros <ul style="list-style-type: none"> ▪ Micros ▪ Micros Subway ▪ Micros 9700 Casio <ul style="list-style-type: none"> ▪ POS Casio chinese ▪ Casio QT2100 SHARP <ul style="list-style-type: none"> ▪ SHARP UP-700 ▪ SHARP UP-700b HRK <ul style="list-style-type: none"> ▪ HRK ▪ HRK_printer | <ul style="list-style-type: none"> ▪ Posmaster ▪ Vectron ▪ POSWare ▪ PowerTill ▪ ALOHA ▪ CRS 3000 ▪ NCR ▪ Smartfuel ▪ TB-003/05-D ▪ INTEC TPV SQL ▪ Samsung SAM4S 7000 Series ▪ SP101FR-K ▪ Crystal UKM v3.2.3 ▪ E-LECLERC TACTIL ▪ TEC-1595 ▪ Maxishop10 ▪ DEBUG_POS ▪ D-Store ▪ SPSR Express ▪ BC4000 ▪ Arch Software |
| Siemens <ul style="list-style-type: none"> ▪ Siemens Nixdorf Beetle MF(RUS) ▪ Siemens-2 | IBM <ul style="list-style-type: none"> ▪ IBM ▪ IBM-2 ▪ IBM(Spanish) ▪ IBM Acmp | |
| | <ul style="list-style-type: none"> ▪ DOS -> WIN ▪ SuperMAG ▪ POSitouch ▪ FIT ▪ Marketer ISM-3000 ▪ Cash ▪ XML based protocol | |

RETAIL INTELLECT SOLUTION SCHEME



TECHNICAL SPECIFICATIONS «RETAIL INTELLECT»

Video cameras	<ul style="list-style-type: none"> Support for IP-cameras: more than 1, 500 devices are integrated. Support for ONVIF and PSIA. Support for analog cameras: hardware/software compression video capture cards. Support for analog and PTZ cameras. Support for codecs: MJPEG, MPEG-4, H.264 and Motion Wavelet. Several types of cameras can be combined in one system and even on one server.
Video archive size	Not limited
Recording rate	Analog cameras - up to 25 fps; IP-cameras - 30 fps
Display rate	Analog cameras - up to 25 fps; IP-cameras - 30 fps
Archiving (backup)	to NAS, SAN, DAS to the local or net drive, CD-RW, DVD-RW – manual and/or automatic
Data transfer protocol	TCP/IP, UDP, RS232
Types of remote access	LAN, Dialup, ISDN, Internet
Support for databases	MS SQL 2008R2, MS SQL 2012

Recording modes	<ul style="list-style-type: none"> Continuous recording. Recording triggered by the beginning/end of a receipt. Frame-by-frame recording. Interval recording. Recording triggered by the motion detection tool. Pre- and post-recording (up to 10 sec).
Query editor	<ul style="list-style-type: none"> Predefined series of actions. Select, ban, modify, or create customized SQL-queries.
Programming components	Capability to program additional automated «event-response» actions
Connecting to a POS terminal	<ul style="list-style-type: none"> Connecting a POS terminal to the COM port of a POS-Intellect server. Connecting a POS-Intellect server to a retail system's local network or to the software of a cashier's workstation over the network.
Queries	<ul style="list-style-type: none"> Quick search by titles Expanded, in-depth search (queries of any complexity) with AND, OR variables Search by predefined events

Extra features	<ul style="list-style-type: none"> Data printing. Exporting video fragments to avi and frames to jpg. Connecting microphones. Monitoring of the sales floor, stockroom and parking area. Fire/intrusion alarm. WEB reports system: centralized getting statistics from all chain stores. Time and attendance control. Heatmaps, store traffic management. Downtime, people counting. Queue management. V-dial – auto dialing various phone numbers and delivering ready messages when triggered by alarm events. E-mail Sender – sending e-mails containing frames and video fragments of alarms events.
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