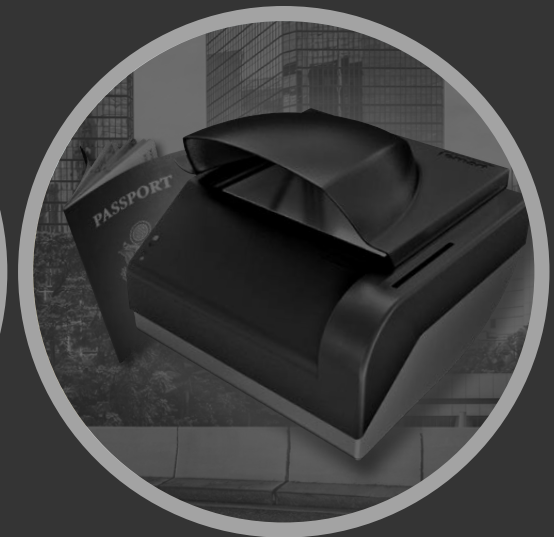# ADAPTIVE RECOGNITION

Image Recognition Products for Traffic, Security, ID Data Entry Automation and Biometric Identification
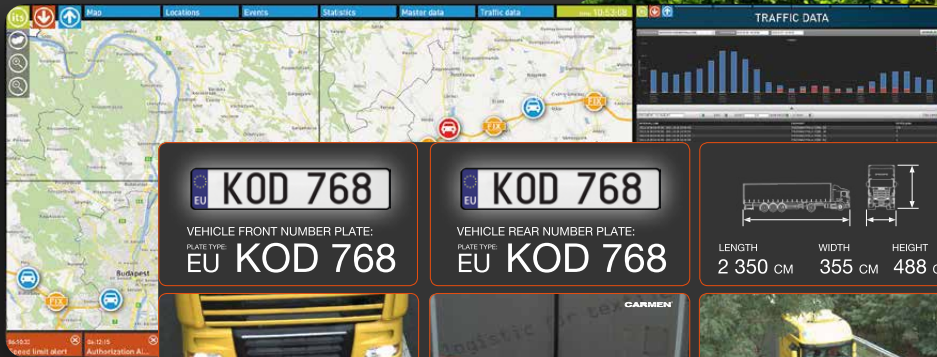

INTELLIGENT TRANSPORTATION SYSTEMS

RECOGNITION SOFTWARE & CAMERAS

IDENTITY DOCUMENT READERS & BIOMETRICS

ARH

TRAFFIC DATA

VEHICLE FRONT NUMBER PLATE:
PLATE TYPE:
EU KOD 768

VEHICLE REAR NUMBER PLATE:
PLATE TYPE:
EU KOD 768

LENGTH
2 350 CM

WIDTH
355 CM

HEIGHT
488 CM

NUMBER OF AXLES: 5

FRONT ANPR CAMERA

REAR ANPR CAMERA

OVERVIEW CAMERA IMAGE

SHAPE
CATEGORY: (J2, J3, J4)

DATA OBTAINED FROM THE INSTALLED OBU OF A VEHICLE

VEHICLE LICENCE PLATE NUMBER, VEHICLE AXLES, VEHICLE CLASS,
VEHICLE WEIGHT LIMITS, EQUIPMENT OBU IDENTIFIER

SIDE SCANNING CAMERA

CERTIFIED SPEED DATA
82 KM/H

TYPICAL APPLICATIONS

Where do you need traffic data? License plates, vehicle speed, dimensions, number of axles, weight, journey time and more? ARH's multi-sensor traffic data collection point is designed to monitor a wide range of vehicle attributes. The massive amount of traffic data is expertly handled by ARH's combined data server and backend software – connected to one or multiple endpoints. The following examples include typical application areas where ARH's Intelligent Transportation System solutions offer unique benefits.

WEIGH-IN-MOTION **Waiting time detection (ELI)**

Bus lane enforcement **TRAFFIC ENFORCEMENT**

TRAFFIC SECURITY MONITORING **Red light enforcement**

Level crossing monitoring 100% Video based detection

LAW ENFORCEMENT **TOLL COLLECTION**

AUTOMATED BORDER CONTROL

PARKING MANAGEMENT Journey time monitoring

SMART CITY SPEED ENFORCEMENT

Stolen vehicle recovery **CONGESTION CHARGING**

VEHICLE CATEGORISATION

AVERAGE SPEED MEASUREMENT

ARH

SMART CITY /
SAFE CITY SOLUTIONS

VIDEO ANALYTICS BASED TRAFFIC MONITORING
COMBINED WITH ANPR

OUR VISION OF SUSTAINABLE, SECURE AND AGILE METROPOLITAN MOBILITY

A key area in every smart city concept is efficient traffic management. If done right, it can have a great positive impact on urban growth, safety and environment. ARH's non-intrusive intelligent traffic monitoring devices with on-board video analytics can build up an entire smart city system. You will get real-time, accurate information on the level of service, the ability to predict traffic trends, identify potential threats or know immediately when an incident has occurred.

BENEFITS OF ARH'S INTEGRATED SMART CITY SOLUTION

1. Vehicle identification, traffic count and prediction of trends
ARH offers both fixed and portable sensors that detect and count each and every vehicle, read their license plate, identify their nationality, speed and category.

2. Proactive traffic management
ARH provides the data to make smart decisions, show real-time traffic data as a heat map, predict congestion and warn of potential traffic incidents.

3. On-street parking enforcement
Parking enforcement on busy city roads requires tremendous effort when done manually. ARH's solution collects evidence and provides an automated way of reading plates on the move.
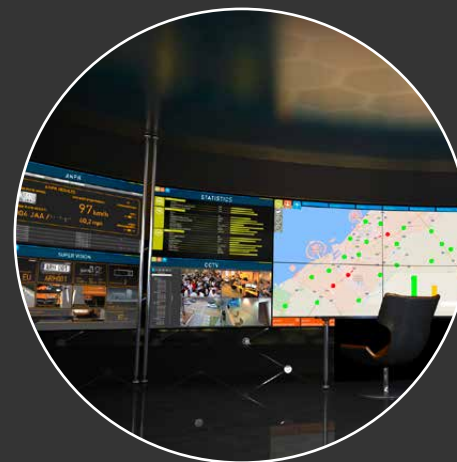
4. Vehicle fingerprinting
Tampering with a license plate is a common offence that was once hard to detect. ARH's system successfully addresses this problem by creating a fingerprint based on the physical characteristics of a vehicle and assigning

license plate data to it. If the same LP appears on a different type of vehicle, the system will immediately spot the non-matching plate.

5. Safe roads thanks to average speed measurement
Local drivers tend to remember where to push the brake when they reach fixed speed radars. However, average speed measurement cannot be deluded as it calculates the vehicle's speed from journey time and distance between checkpoints.

On the following pages you will find further information on ARH's intelligent traffic solutions that provide prosperity, safety and a more liveable urban environment.

PARKIT SYSTEM®

APPLICATION WITH ANPR CAMERAS
AND GRAPHICAL INTERFACE FOR PARKING AND ACCESS CONTROL

AUTOMATED, EXPANDABLE VEHICLE ACCESS CONTROL SYSTEM FOR ANY SIZE OF INSTALLATION

ParkIT SYSTEM® **=** PARKIT CAMERA OR FREEWAYCAM OPTION **+** PARKIT APPLICATION

ParkIT System® is a complete end user system specifically developed for vehicle access control that is highly flexible and customizable for use from a small residential to an industrial, commercial or government installation of any size. The system can even be installed at multiple sites at once. The system components are designed and built together to achieve simple and easy integration into any access control environment without the need for programming or other specialized skills. ParkIT System® is easy to set up, simple to operate, and it permits separate user access and administration levels for straightforward operation and data management.

Components of the system are comprised of one or more ParkIT camera(s), the industry-leading CARMEN® ANPR/LPR engine, ParkIT® Application software and customizable graphical management and user interface (GMI/GUI) for all levels. The entire secure system is accessible through thin client or other (even mobile) IP-based connections.

Note: that ParkIT System cooperates with 3rd-party cameras.

MAIN BENEFITS

• Fast automated or predetermined vehicle access – with a powerful reporting module
• Simple ANPR/LPR-based access permission without key, card or code
• Easy installation, straightforward IP connection
• Uncomplicated graphical management and user interface

KEY FEATURES

• Unlimited expandability from 1 to even 1000 access points
• Customizable roles at 3 levels (user, admin, developer)
• License plate-based security and surveillance functions
• Black- and whitelist management, statistical functions
• Multi-language GMI / GUI
• Easy setup and operation – even with 3rd-party cameras

COMPANY EMPLOYEE PARKING LOCATIONS   PUBLIC PARKING LOTS   HOTELS, RESORTS, PUBS   RESIDENTIAL AREAS   SHOPPING CENTER TRUCK LOADING AND PARKING AREAS   COMMERCIAL LOCATIONS   MILITARY LOCATIONS

ParkIT SYSTEM®

ARH

TRAFFICSPOT®

MULTI-LANE FIXED TRAFFIC MONITORING
AND DATA PROCESSING

SINGLE-GANTRY LANE CONTROLLER SOLUTION

KOD 768
VEHICLE FRONT NUMBER PLATE:
PLATE TYPE: EU **KOD 768**

KOD 768
VEHICLE REAR NUMBER PLATE:
PLATE TYPE: EU **KOD 768**

LENGTH 2 350 CM   WIDTH 355 CM   HEIGHT 488 CM

NUMBER OF AXLES: 5

FRONT ANPR CAMERA

REAR ANPR CAMERA

OVERVIEW CAMERA IMAGE

SHAPE
CATEGORY: (J2, J3, J4)

DATA OBTAINED FROM THE INSTALLED OBU OF A VEHICLE
VEHICLE LICENCE PLATE NUMBER, VEHICLE AXLES, VEHICLE CLASS,
VEHICLE WEIGHT LIMITS, EQUIPMENT OBU IDENTIFIER

SIDE SCANNING CAMERA

CERTIFIED SPEED DATA
82 KM/H

TrafficSpot® is a variable sensing and monitoring system installed on a single, fixed detection point (i.e.: traffic gantry or pole) for accurate surveillance and data gathering. The standard list of components includes: trigger or speed measurement radar, 2D or 3D vehicle classificator laser scanner, overview camera, ANPR camera and industry-leading CARMEN® ANPR/LPR software.

The additional integrated processing unit intelligently computes all measured and detected data; marks each vehicle-related event with a timestamp, location and lane identification; bundles the gathered data in an encrypted package and sends it to a pre-designated central location. In addition to toll collection and traffic monitoring, the added modules and detection systems enable TrafficSpot® to calculate journey time measurement by measuring the time interval between 2 checkpoints (gantries) as well as perform traffic light and lane enforcements and weigh-in-motion functions.

MAIN BENEFITS

- All the necessary traffic information gathered and processed in a single location
- Ideal for toll collection; speed, lane and traffic light enforcement; weigh-in-motion
- Quick ROI
- Simple maintenance
- Scalability; cost effective installation and deployment

KEY FEATURES

- 100% TÜV certified vehicle detection via multiple detectors including radar trigger, virtual loop and laser trigger
- Purpose-built to gather valuable traffic data by way of a multi-sensor traffic monitoring gantry
- Secure data retention; continued functioning offline for at least five days
- IP-based communication
- Efficient data compression and upload
- Each necessary data set bundled in a single "event" package for ARH GLOBESSEY® Data Server (GDS)
- Modular scalability for individual needs – you pay only for what you need
- Monitoring and management of each components through ARH GLOBESSEY® Data Server
- Comprehensive data gathering regarding each passing vehicle (front/rear/overview/side images, ANPR results, vehicle dimensions, category, axle numbers, weight, speed, possible traffic violations, location/date/time information)

TOLL

TOLL
COLLECTION

TRAFFIC
SECURITY
MONITORING

JOURNEY TIME
MEASUREMENT

SPEED
ENFORCEMENT

CONGESTION
CHARGING

BUS LANE
AND RED LIGHT
ENFORCEMENT

GLOBESSEY® DATA SERVER (GDS)

DATA SERVER + MIDDLEWARE
FOR ITS SOLUTIONS AND MASS DATA PROCESSING

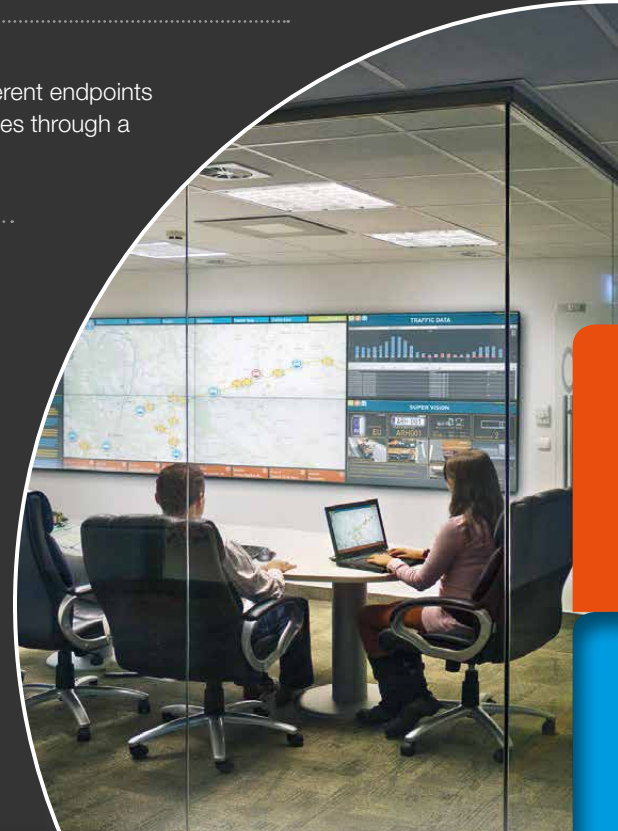## ROBUST AND FAST ITS DATA STORAGE MIDDLEWARE

Globessey® Data Server (GDS), is a combined data server and middleware, gathers information from different endpoints to make them available for various end user applications. The operators of GDS can manage the processes through a dedicated graphical interface, which is supplied along with the system, running in a web browser.

MAIN BENEFITS

- Optimized traffic speed, easier toll collection, safer roads
- Support of other traffic-related agencies (parking, law enforcement, national police, border control, tariff, tax and statistics)
- User and developer friendly; fast ROI
- Useful outside traffic-related applications where complex image- and text-based data is mass processed (international borders, shipping ports, logistics, airports, etc.)
- Needs only a thin client at end user side

KEY FEATURES

- **SUPPORTS ANY NUMBER OF ENDPOINTS**
- Standard, customizable independent data packages from endpoints
- Central server connected via secure SSL
- Fast IP traffic in- and outflow with xml or binary communication

- **HIGH AVAILABILITY: SUPER FAST AND SECURE DATA STORING**
- Data redundancy through high-availability replication and clustered storage
- Highly efficient image storage
- Dynamic hardware scalability without maximum limits

- **BUSINESS DOMAIN EXPERTISE**
- Multiple business applications made possible by a single central backend, effectively and reliably
- Each data record is searchable, with custom-tailored access
- Wide selection of premade modules available (e.g.: stolen vehicle search, blacklist/whitelist functions)

- **BUSINESS LOGIC WITH ITS OWN DATABASE**
- Highly effective remote operation, reflects detailed conditions in real-time
- User-friendly display; maps and statistics
- Search; fast and flexible with preset automation, export functions
- Customizable GUI and search functions

TOLL COLLECTION

TRAFFIC SECURITY MONITORING

JOURNEY TIME MEASUREMENT

SPEED ENFORCEMENT

CONGESTION CHARGING

BUS LANE AND RED LIGHT ENFORCEMENT

ARH

COMPARISON CHART

TRAFFICSPOT® LIGHT
(WITH SMARTCAM OR SPEEDCAM)

TRAFFICSPOT®
(WITH 2D SCANNER)

TRAFFICSPOT® PRO
(WITH 3D SCANNER)

	TRAFFICSPOT® LIGHT (WITH SMARTCAM OR SPEEDCAM)
Non-intrusive	yes
Mounting options	single gantry or pole
Traffic situation	free-flow
Multi-lane management	yes
Detection rate	over 80 %
Front and rear ANPR	–
ANPR accuracy	up to 98.5 %
Overview imaging	optional
Side-view imaging	–
Speed measurement	optional (radar based)
Traffic enforcement (red-light-, emergency/bus lane-, forbidden zone-, solid line crossing-, wrong way/turn detectors)	yes
Vehicle categorization	optional (5 categories)
Vehicle categorization accuracy	approx. 80 %
Vehicle dimension measurement	–
Dimension measurement accuracy	–
Axle counting	–
WIM – Weigh-In-Motion (integrated into road pavement)	–
WIM accuracy	–
DSRC	–
Onsite processing	yes
Encrypted data storing at the site	–
Encrypted data forwarding	–
3rd party support / backend system support	yes
GDS compatibility	Scheduled for Q2 2019
Device health monitoring	–
24/7 operation	yes

yes : included
– : not included

TRAFFICSPOT®

	TRAFFICSPOT® (WITH 2D SCANNER)	TRAFFICSPOT® PRO (WITH 3D SCANNER)
Non-intrusive	yes	
Mounting options	single gantry	
Traffic situation	free-flow	free-flow and stop-n-go
Multi-lane management	yes	
Detection rate	over 95%	100%, TÜV certified
Front and rear ANPR	yes	
ANPR accuracy	up to 98,5%	
Overview imaging	yes	
Side-view imaging	optional	
Speed measurement	optional (radar based)	
Traffic enforcement (red-light-, emergency/bus lane-, forbidden zone-, white line crossing-, wrong way/turn detectors)	optional	
Vehicle categorization	8+1 categories	28+1 categories
Vehicle categorization accuracy	approx. 96%	approx. 98%
Vehicle dimension measurement	width and height	width, height and length
Dimension measurement accuracy	approx. 10 cm	approx. 10 cm
Axle counting	optional (indirect or direct)	
WIM – Weigh-In-Motion (integrated into road pavement)	optional	
WIM accuracy	15 to 5 %	
DSRC	optional	
Onsite processing	yes	
Encrypted data storing at the site	yes	
Encrypted data forwarding	yes	
3rd party support / backend system support	yes	
GDS compatibility	yes	
Device health monitoring	yes	
24/7 operation	yes	

yes : included
– : not included

intellicity

intellishop

intellisport

ARH'S INTELLIO VIDEO SURVEILLANCE SYSTEM

Video analytics is a power tool in the age of Big Data. ARH's Intellio brand uses a combination of server-side intelligence and camera-side intelligence to ideally assist surveillance personnel in their daily work. The following examples include typical application areas where ARH Intellio brand smart surveillance solutions offer unique benefits.

intellilogistic

PUBLIC TRANSPORT: PASSENGER SAFETY

Logistics park track-and-trace   INDUSTRIAL PLANT SURVEILLANCE

PROPERTY PROTECTION   VANDALISM DETERRENCE

Sports event safety   Visitor age / gender data for marketing

SHOPPING MALL SECURITY   PARKING LOT SECURITY

TRAFFIC MONITORING   **Train/bus surveillance: mobile security**

Internet security camera systems   **THEFT PREVENTION**

PUBLIC SAFETY   License plate recognition (LPR) compatibility

Remote & mobile monitoring   FACILITY PROTECTION

TRAFFIC MONITORING

intellimotion

ARH

SMARTEN UP YOUR CCTV SYSTEM
– WITH INTELLIO IVS4

Intellio Video System 4, the highly intelligent video management software by Intellio, supports any up-to-date standard surveillance camera. IVS4 is capable of turning your existing CCTV system into a smart surveillance system. It is flexible, scalable, robust and error resistant. IVS4 has several intelligent functions for every CCTV system that makes surveillance, event query, storage, settings, operation and documentation easy and intuitive – even if the system has multiple cameras and a vast amount of recorded video footage.

FOCUS ON WHAT MATTERS

People's ability to concentrate significantly decreases after 20 minutes. Intelligent live view automatically displays the blown-up view of a detected event, thereby supporting to parry emergencies instantly.

FAST AND EFFICIENT SEARCH

Spot when an object was moved in or out of a place – or any other event: Quick event browser will display it for you, even in a time interval spanning several weeks.

EASY CAMERA NAVIGATION

Watching large areas is a complicated task. Navigate between cameras by simply clicking the on-screen arrows on the live or recorded video stream and patrol easily from the monitor room.

SMART PTZ CONTROL

View a recorded video footage as if it was recorded by a single fixed camera – with Intelligent PTZ preset based search.

ADVANCED GRAPHICS DISPLAY

View events on a 3D map / 3D floor plan of the building – and coordinate security guards effectively from the monitor room.

HIGH FUNCTIONALITY ON MOBILE DEVICE

Never miss an event: check live view remotely and immediately via a mobile application on Android and iOS platforms. Thanks to push notifications about events, security personnel can immediately react to detected events.

CONTINUOUS PERFORMANCE MONITORING

Run your system effectively with built-in performance monitor, status monitor and documentation module.

ARH

INTELLIO INITIO
– COMPACT CAMERA FOR SMART SURVEILLANCE

The brand new Intellio Initio camera series is sturdy and sleek. The compact housing encompasses the latest in smart surveillance technology – in a stylish design. Initio cameras guarantee long-term and flawless operation in every surveillance area, supported by 3 years of warranty. Initio cameras with outstanding image quality and IR illumination up to 30-50 meters are versatile and can be used indoors as well as outdoors, day and night.

MAIN BENEFITS

- Compact, cost-efficient surveillance cameras
- Solid protective housing for indoor and outdoor operation
- Intelligent video, built in line crossing and intrusion detection
- 3 years' warranty

KEY FEATURES

- New camera generation – introduced in September 2018
- Bullet and dome cameras
- 4 MP resolution
- 1/3" progressive scan CMOS
- 2.8 mm fixed or varifocal lens*
- IR illumination up to 30 or 50 meters*
- H.265+, H.265, H.264+, H.264
- Built in Micro SD/SDHC/SDXC card slot up to 128 GB
- IP67 and IK10* certification

*depending on the model

INITIO

INTELLIO VISUS – SMART SURVEILLANCE TOOL FOR VARIOUS PROJECTS

Intellio's Visus camera models come equipped with built-in 8-core ARM processor and a remotely controlled lens. Visus cameras offer the competitive edge of on-board detectors and an image enhancement technology more sophisticated than those found in most security cameras, like advanced motion detection (iTracking).
Intellio's smart camera generation provides reliable hardware tools for every industrial security solution from city surveillance through logistics to shopping malls and public transport. Onboard intelligence can support effectively the business processes in addition to security.

MAIN BENEFITS

- Smart surveillance cameras
- Great capabilities with onboard detectors
- Efficient operation with camera-side bandwidth management
- Wide product range for every mission

KEY FEATURES

- Box, bullet and dome cameras
- 3-12 MP resolution
- Aptina 1/3" CMOS, true WDR
- Varifocal lenses*
- IR illumination range up to 35 or 60 meters*
- H.264 SVC
- MicroSD card data storage
- IP67   *depending on the model

EXTENDED INTELLIGENCE

- Covering detection
- Rotation detection
- Intelligent motion detection (iTracking)
- Tripwire detection
- Entry detection
- Direction detection
- Object removal / theft detection
- Pattern-based auto-exposure (iShot)
- Intelligent aperture control (iWDR)

VISUS

ARH

INTELLIO SOLUTIONS

Intellio has always been a tech pioneer in smart surveillance. Intellio's camera-side intelligence – created as the first such technology in the World back in 2005 – combined with the video management system developed in-house, offers you unique benefits in multiple application areas.

INTELLICITY – Urban surveillance is a key element of all Smart City concepts. With complex Intellio CCTV systems you can monitor events real-time even in an entire municipality. In addition to safety functions, IntelliCity improves the day-to-day operational efficiency of public services and local governments.

KEY FEATURES

- Access the central surveillance of an entire city, displayed on a map
- Prevent vandalism and improve public safety
- Detect traffic offenses, potentially with instant revenue generation
- Benefit from the economical and sustainable system operation

REFERENCES

- City of Miskolc, Hungary (710 cameras) • City of Székesfehérvár, Hungary (200 cameras)

INTELLISPORT – It is definitely a challenging task to maintain security efficiently at major sports and cultural events attracting massive crowds. The complex system called IntelliSport meets all the challenges, besides, it is also a profitable sales and marketing tool.
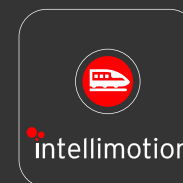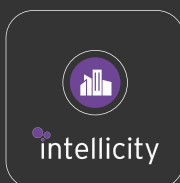
KEY FEATURES

- Get the panorama live view showing the entire stand area of the stadium or zoom in to get an ID photo quality image of a person's face.
- Take ID face photo quality images of visitors from a distance up to 100 meters.
- Boost sales and marketing by exploiting visitor demography data with our Visiscanner® video analytics software.
- Manage parking and site surveillance easily, based on automatic License Plate Recognition (LPR).

REFERENCES

- Nagyerdei Stadium, Debrecen, Hungary (20 000 spectators) • Haladás Sports Complex, Szombathely, Hungary (9 750 spectators) • ETO Park, Győr, Hungary (15 600 spectators) • Javni zavod Šport Ljubljana (16 000 spectators) • Ness Ziona Stadium, Ness Ziona, Israel (4 000 spectators)

intellio™

intellicity   intellisport   intellishop   intellilogistic   intellimotion

INTELLISHOP – A combination of excellent image quality, intelligent video functions and smart video analytics tools offers unparalleled advantages for retailers and shopping property management firms in security as well as sales and marketing.

KEY FEATURES

- Detects objects removed from a monitored area
- Supports the efficient allocation of workforce in time and space
- Visiscanner® – intelligent video analytics tool that estimates visitor age and gender
- Supports digital content provider systems and gives instant empirical feedback on promotions

REFERENCES

- KöKI Terminal shopping mall, Budapest (70 000 m²) • Lurdy Ház shopping mall, Budapest (70 000 m²)
- Hugo Boss stores

INTELLILOGISTIC – Intelligent camera systems make complex processes easy to track and trail. IntelliLogistic is a simple way to make sure that large volumes of valuable transported goods are delivered to their destination with no fail, delay and damage.

KEY FEATURES

- Central surveillance of multiple zones (parking facilities, buildings, staff etc.)
- Detection of damage via monitoring the entire movement of goods via barcode and QR code reading
- In case of customer complaint, footage can be used as evidence to clarify actual responsibility
- Automatic vehicle access control based on vehicle license plate – prevent unauthorized entries at the gates
- Supports digital content provider systems and gives instant empirical feedback on promotions

REFERENCES

- TESCO warehouse logistics • PennyMarket warehouse logistics • SPAR warehouse logistic

INTELLIMOTION – Even if the entire fleet is continuously on the move, Intellio's surveillance solution – specifically developed for use aboard public transportation vehicles – guarantees the full functionality of the latest camera systems.

KEY FEATURES

- Monitors the entire fleet of public transportation centrally with remote live view
- Records video footage aboard moving vehicles and transfers data automatically to the central server at predefined stations/stops
- Allows viewable and searchable footage; guarantees steady operation
- Stable and sharp video streams in all ambient light conditions

REFERENCES

- Stadler Rail AG • GySEV Raaberbahn railway company • Hungarian State Railways MÁV

ARH

COMPARISON CHART

PRODUCTION CODE	Initio Bullet 4MP		Initio Dome 4MP		Visus Bullet 3MP
	ILB-340-BL-F	ILB-340-BL-V	ILB-340-VD-F	ILB-340-VD-V	ILD-420E-BL-IRW-POE / ILD-420E-BL-IRT-POE
Image Sensor	1/3" Progressive Scan CMOS				Aptina 3 MP 1/3" , WDR
Sensitivity	Day / Night / LED: 0.01 lux / 0.018 lux / 0 lux				Day / Night / LED: 0.65 lux / 0.01 lux / 0 lux
Day-night mode / WDR	True / WDR > 100 dB				
Lenses	2.8 mm	2.8 – 12 mm, motorized focus / zoom	2.8 mm	2.8 – 12 mm, motorized focus / zoom	3–10.5 mm or 7–22 mm, motorized focus / zoom
Angle of view	Horizontal 98° Vertical 55°	Horizontal 98°–28° Vertical 51°–16°	Horizontal 98° Vertical 55°	Horizontal 98°–28° Vertical 51°–16°	IV-BL-W model: Horizontal 73–24°, Vertical 58–18°; IV-BL-T model: Horizontal 35–11°, Vertical 27–8°
Resolution / bitrate	2560 × 1440 / 32 Kbps to 16 Mbps				4:3: 2048 × 1536, 1920 × 1440, 1280 × 960; 640 × 480 / 500 Kbps – 18 Mbps 16:9: 2048 × 1152, 1920 × 1080, 1280 × 720, 640 × 360 / 500 Kbps – 18 Mbps
Frame Rate	50 Hz:25 fps (2560 × 1440, 2304 × 1296, 1920 × 1080) 60 Hz: 30 fps (2560 × 1440, 2304 × 1296, 1920 × 1080)				H.264 4:3: 25 fps (2048 × 1536), 30 fps (1920 × 1440), 40 fps (1280 × 960), 55 fps (640 × 480)	H.264 16:9: 25 fps (2048 × 1152), 40 fps (1920 × 1080), 45 fps (1280 × 720), 65 fps (640 × 360)
Video Compression	H.265 / H.264 / H.265+ / H.264+ / MJPEG				H.264 SVC – Hierarchical P encoding
Ethernet	1× RJ45 10M/100M self-adaptive Ethernet port				10BaseT / 100BaseTX, RJ–45
I/O Ports	–	Audio I/O; Alarm I/O	–	Audio I/O; Alarm I/O	–
Edge-storage	–				Storage to shared network folder via SMB protocol
Protocols	TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP™, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6, Bonjour				NTP, TCP/IPv4, DHCP, DNS, HTTP, RTSP
Environmental Protection	IP67; TVS 2000 V Lightning Protection, Surge Protection and Voltage Transient Protection				IP67; TVS 1000 V Lightning Protection, Surge Protection and Voltage Transient Protection
Operating Conditions	-30 °C to +60 °C (-22 °F to +140 °F), humidity 95% or less (non-condensing)				IR LED on: -40 – +40 °C; IR LED off: -30 – +55 °C
Power Supply / Consumption	12 VDC ± 25% / max. 6 W PoE (802.3af, class 3) / max. 7.5 W	12 VDC ± 25% / max. 14,5 W PoE (802.3at, class 4) / max. 18 W	12 VDC ± 25%, max. 6 W PoE (802.3af, class 3) / max. 7.5 W	12 VDC ± 25% / max. 10 W, PoE (802.3af, class 3) / max. 12 W	PoE+ 802.3at / max. 20 W
Weight	420 g	1740 g	610 g	1330 g	1380 g
Compatibility	ONVIF (PROFILE S, PROFILE G), ISAPI				Open API, Onvif Profile S
IR LED / illumination distance / angle	yes / up to 30 m	yes / up to 50 m	yes / up to 30 m	yes / up to 30 m	3 pcs IR LED / 20 m	60 m / 50°	20°
Intelligent video	Line crossing detection, intrusion detection, face detection				Motion detector for live view and shooting, extended intelligence with onboard detectors

INTELLIO CAMERAS & SENSORS

Visus Dome 3MP	Visus Box 3MP	Visus Box 5MP	VISUS Box 12MP
LD-420E-VD-IRW	ILD-420E	ILD-510E	ILD-810E set
Aptina 3 MP 1/3" , WDR		Aptina 5 MP 1/2.5" CMOS	Aptina 14 MP 1/2.3" CMOS
Day / Night / LED: 0.65 lux / 0.01 lux / 0 lux			
True / WDR > 100 dB			
3 – 10.5 mm, motorized focus/zoom	1/3" format, C/CS mount, DC iris, megapixel resolution		
Horizontal: 73 – 24°, Vertical: 58 – 18°	Evetar M125VD922IRCS lens: H: 28–11°, V: 21–8° Evetar M125VD3410IRCS lens: H: 67–25°, V: 52–19° Fujinon YV2.8x2.8SR4A–SA2 lens: H: 77–31°, V: 62–23° Evetar M123VD4510IR lens: H: 53–25°, V: 41–19° Fujinon DV4x12.5SR4A–SA1L lens: H: 20–5°, V: 15–4°	Evetar M125VD922IRCS lens: H: 35–14°, V: 26–11° Evetar M125VD3410IRCS lens: H: 80–31°, V: 64–24° Fujinon YV2.8x2.8SR4A–SA2 lens: H: 91–32°, V: 74–30° Evetar M123VD4510IR lens: H: 64–31°, V: 50–24° Fujinon DV4x12.5SR4A–SA1L lens: H: 25–6°, V: 19–5°	Fujinon DV4x12.5SR4A–SA1L lens: Horizontal: 25–7°, Vertical: 19–5°
4:3: 2048 × 1536, 1920 × 1440, 1280 × 960; 640 × 480 / 500 Kbps – 18 Mbps 16:9: 2048 × 1152, 1920 × 1080, 1280 × 720, 640 × 360 / 500 Kbps – 18 Mbps		4:3: 2560 × 1920, 1920 × 1440, 1280 × 960; 640 × 480 / 500 Kbps – 18 Mbps 16:9: 2560 × 1440, 1920 × 1080, 1280 × 720, 640 × 360 / 500 Kbps – 18 Mbps	4:3: 4096 × 3072, 3840 × 2880, 3200 × 2400, 3072 × 2304, 2560 × 1920, 1920 × 1440, 1280 × 960, 640 × 480 / 500 Kbps – 32 Mbps 16:9: 4096 × 2304, 3840 × 2160, 3200 × 1800, 3072 × 1728, 2560 × 1440, 1920 × 1080, 1280 × 720, 640 × 360 / 500 Kbps – 32 Mbps
H.264 4:3: 25 fps (2048 × 1536), 30 fps (1920 × 1440), 40 fps (1280 × 960), 55 fps (640 × 480)	H.264 16:9: 25 fps (2048 × 1152), 40 fps (1920 × 1080), 45 fps (1280 × 720), 65 fps (640 × 360)		H.264 4:3: 14 fps (2560 × 1920), 21 fps (2048 × 1536), 23 fps (1920 × 1440), 40 fps (1280 × 960), 36 fps (640 × 480)	H.264 16:9: 16 fps (2560 × 1440), 27 fps (2048 × 1152), 30 fps (1920 × 1080), 45 fps (1280 × 720), 44 fps (640 × 360)	H.264 4:3: 8 fps (4096 × 3072), 14 fps (2560 × 1920), 20 fps (2048 × 1536), 22 fps (1920 × 1440), 40 fps (1280 × 960), 50 fps (640 × 480) H.264 16:9: 10 fps (4096 × 2304), 16 fps (2560 × 1440), 25 fps (2048 × 1152), 30 fps (1920 × 1080), 45 fps (1280 × 720), 60 fps (640 × 360)
H.264 SVC – Hierarchical P encoding			
10BaseT/100BaseTX, RJ–45			
–	6-pin I/O Connector: 1 Output (2 pins), 1 Input (2 pins), GND, AUX Voltage		
Yes			
NTP, TCP/IPv4, DHCP, DNS, HTTP, RTSP			
IP67; TVS 1000 V Lightning Protection, Surge Protection and Voltage Transient Protection	–		
-30 °C – +50 °C	Normal mode: 0 °C – 45 °C, ECO mode: 0 °C – 50 °C		
POE: 802.3af, Class0	DC: 24–50V / Max. 13 W	Screw Fixable Terminal Blocks. Accessory: Power connector (DC jack 5.5 mm / 2.1 mm) / 12 V DC (+2 V, -3 V), 625 mA / PoE Support (IEEE 802.3af – PoE Class 3) / Max. 7.5 W		
900 g	385 g (without lens)		
Open API, Onvif Profile S			
35 pcs of IR LEDs / max. 30 m / 50°	–		
Motion detector for live view and shooting, extended intelligence with onboard detectors			