HIGH DEFINITION SYSTEMS

MOLEKULA

Timeless Solutions for Professional Monitoring Systems

A unified environment for video monitoring, intelligent analytics, event response and custom applications.

- Scalable system architecture
- Professional operator workflows



HIGH DEFINITION SYSTEMS

SOLUTION OVERVIEW

One platform across the complete video workflow

Molekula combines recording, monitoring, analytics, search, maps and external system integration.

- Live and playback
- Events and alarm handling
- Analytics and reporting
- Open integration

01 **CAPTURE**
Cameras, encoders and streams

02 **RECORD**
Resilient video storage

03 **ANALYZE**
Rules, objects and attributes

04 **RESPOND**
Operator actions and notifications

05 **INTEGRATE**
Maps, I/O, databases and APIs

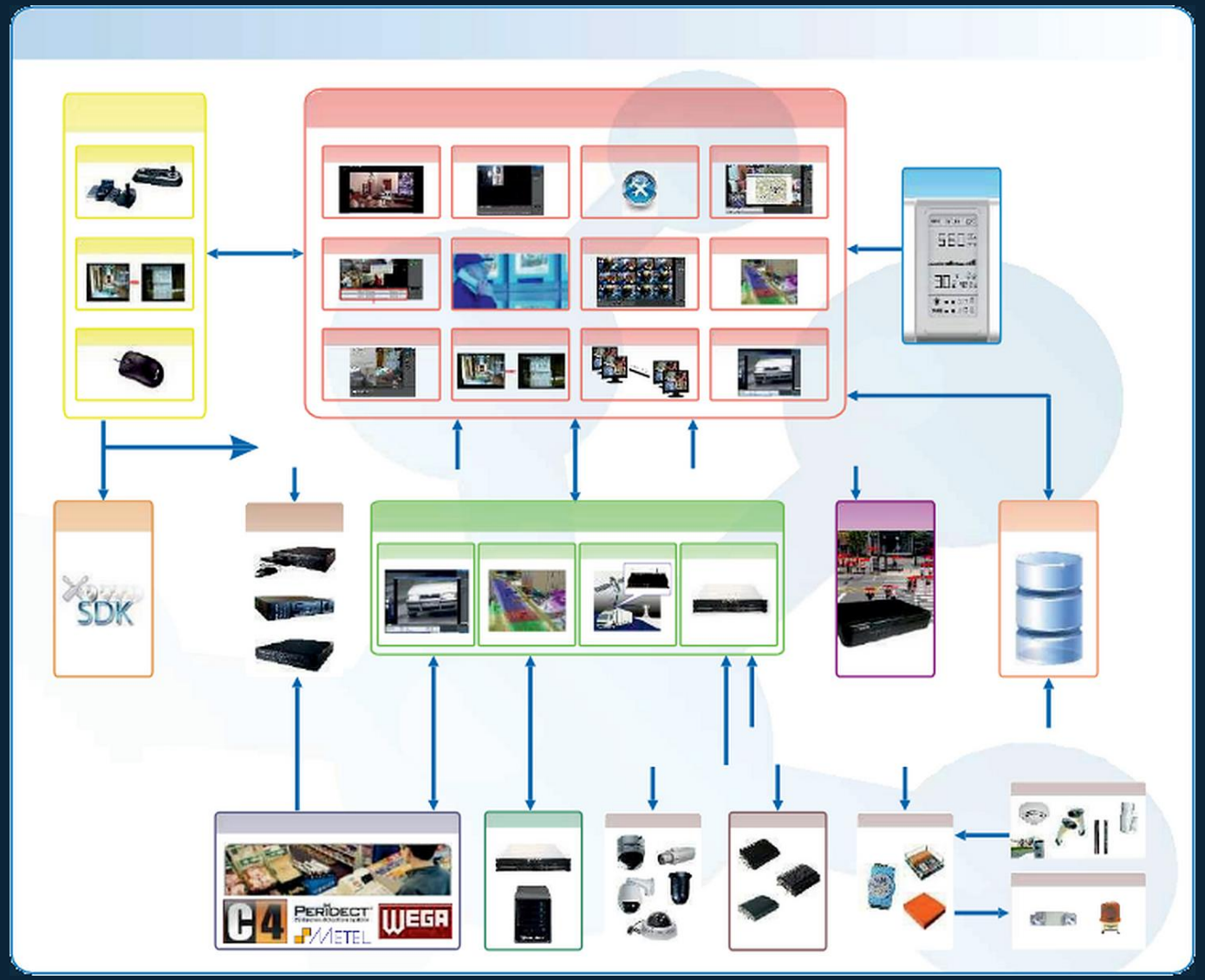
HIGH DEFINITION SYSTEMS

MOLEKULA SOFTWARE

Complete Block Diagram

The original system architecture from the supplied presentation is preserved as a complete visual reference.

- Central CMS software
- Hybrid recording sources
- Analytics and license plates
- Storage, I/O and databases



HIGH DEFINITION SYSTEMS

PLATFORM + SPECIFICATIONS

Professional Server and System Performance

The product overview and technical specification are combined into one concise solution page.

- Up to 36 video streams
- RAID storage options
- Dual network interfaces
- Expandable analytics licensing



VIDEO

H.265 / H.264 / MPEG-4 / MJPEG

STORAGE

8 hot-swap HDD positions; RAID options

NETWORK

Dual GbE or optional 10GbE

CONTROL

PTZ, touch screen, keyboard and mouse

CLIENTS

Up to 20 simultaneous monitoring clients

SECURITY

User authentication and programmable rights

HIGH DEFINITION SYSTEMS

MLK SOLUTION • 1/3

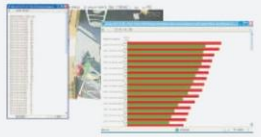
Solution overview

Architecture, system concept and the first solution modules.

Molekula basic advantages and functions

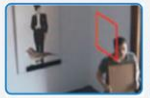
VCA module functions

Real-time video analysis engine utilizes advanced image processing algorithms to turn video into actionable intelligence. Digital signal processing circuises allow high sensitivity of detection keeping excellent protection against false alarms.
Suitable applications: marketing tool for counting people and behavior in shops, security system for coal mining, forest fire protection, coastal defense, perimeter protection and security system for the police.





Tamper detection
Alarm alert because of camera work breaking e.g. video loss, lens covering, camera scene change, camera defocusin, light change.



Object appear/ disappear
VCA detects disappeared objects, moving persons are ignored.



Object classification
Objects (person, car, animal, etc.) can be classified on the basis of area and speed of the movement.



Object counting
Any combination of detection zones or lines can be assigned to a counter It is advanced about shadow filter.



VCA versus MD
VCA detects object moving at the areas where standard Motion detection does not work properly.



Object loitering
Objects that dwell inside a zone for longer than a defined amount of time will trigger the rule and raisean alarm.



Object direction
Failure to comply with the allowable distance between vehicles.
Access systems (2 people per card).



Perimetry visualization
VCA sends any object presence at zones at perimetry guiding places to PCO. It is also possible to use PTZ camera autotracking function and send to predefined Setup.



Object colour filter
VCA detects object according to defined percentage chosen colour presence.



Suspected person detection
VCA identifies a person staying at a car except for its owner and could be suspected.



Auto tracking
Automatic moving object tracking. Tag the monitored object manually. Tracking is based on VCA events.



Smoke detection
VCA detects smoke. It differs the smoke and a concrete source of light. Manufacturer does not guarantee 100% success of smoke detection!



Fire detection
VCA detects fire. It differs the fire and a concrete source of light. Manufacturer does not guarantee 100% success of smoke detection!

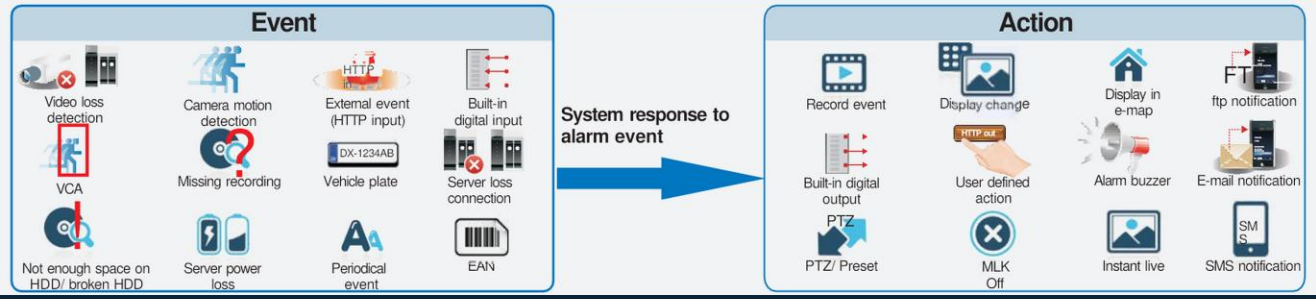


Stopped vehicle detection
VCA detects vehicles stopping at checked areas. Immediate or delayed alerts.



VCA of thermal camera
Perimetry support especially at night (wide range up to 500m without IR illumination).

Event Action



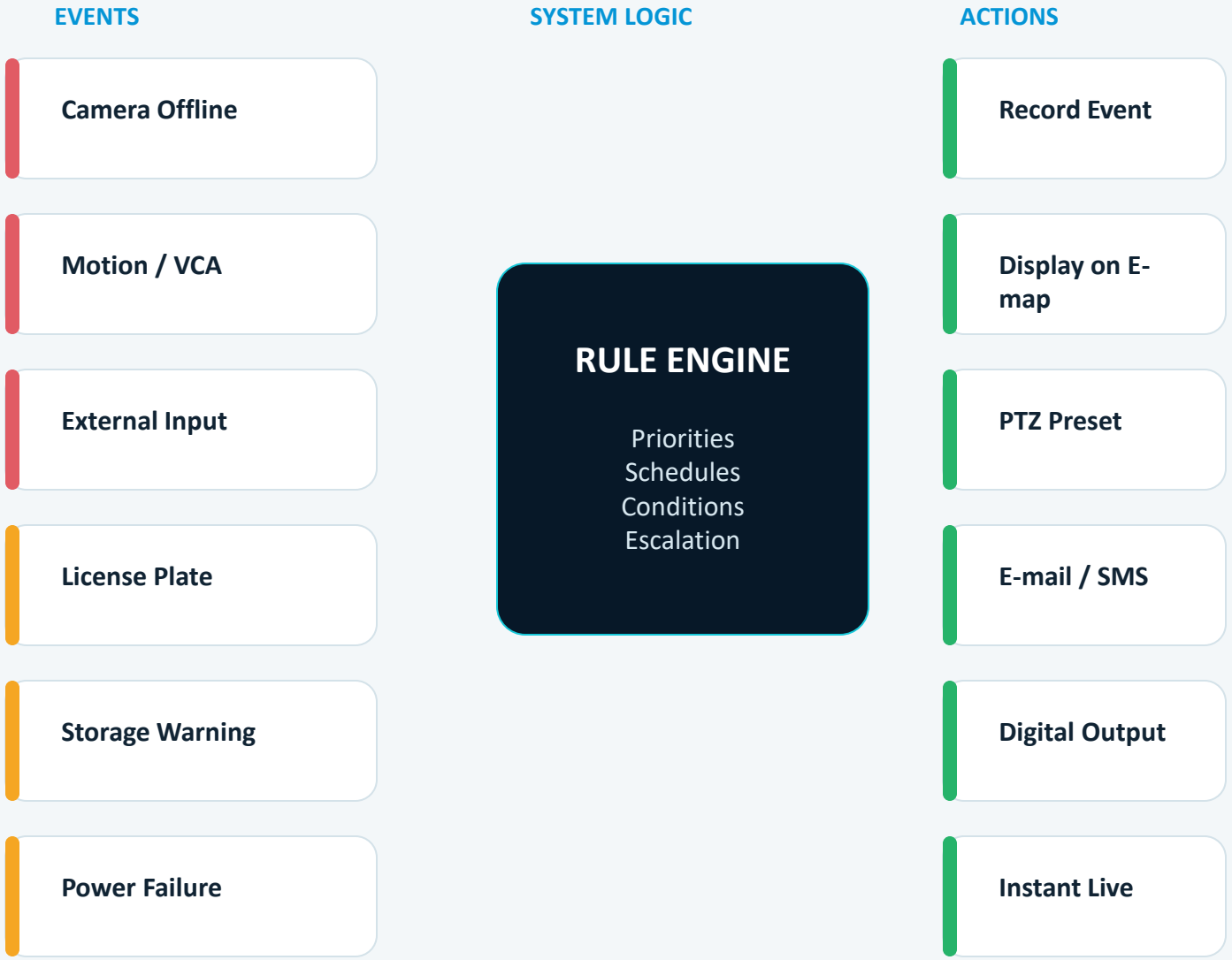
HIGH DEFINITION SYSTEMS

PROFESSIONAL ALARM MANAGEMENT

Convert Events into Defined Actions

Molekula links camera, system, analytics and external events to recording, notification and operator actions.

- Configurable event rules
- Immediate verification
- Automated notifications
- Audit-ready event workflow



HIGH DEFINITION SYSTEMS

OPERATOR CONTROL

Operate Locally, Centrally or Through the Web

Multiple control modes allow operators, administrators and mobile users to work in the environment best suited to their role.

- CMS and professional CMS
- Web and mobile access
- Hierarchical E-map
- Touch, keyboard and joystick

CMS / PCMS

Up to 64 streams with optional analytics modules

WEB CLIENT

Live and playback from supported browsers and devices

E-MAP

City, site, building and room hierarchy

LOCAL CONTROL

Touch screen, PC, mouse and professional keyboard

HIGH DEFINITION SYSTEMS

REFERENCES & ECOSYSTEM

From Small Sites to Critical Infrastructure

The same software architecture can scale from compact deployments to large professional monitoring systems.

- Homes and retail
- Industry and utilities
- Transport and airports
- Police, defence and critical sites

01
SMART CITY

02
RETAIL

03
INDUSTRY

04
TRANSPORT

05
CRITICAL INFRASTRUCTURE

06
LARGE CAMPUS

Hybrid support for IP, analog, HD-SDI, recorders, cameras and third-party systems

VIDEO ANALYTICS DATA PROCESSING

Automated Supervision of Critical Events

Video content analytics adds intelligent detection rules that improve operator awareness while reducing unnecessary alarms.

- Object and behavior rules
- Statistics from VCA events
- Perimeter applications
- Safety and operational insight



VCA RULE LIBRARY

Detect Objects, Movement and Perimeter Events

Configurable analytical rules support automated detection across diverse scenes and operational requirements.

- Camera tampering
- Abandoned or missing objects
- Object classification and counting
- Auto tracking and perimeter visualization

TAMPERING

Signal loss, obstruction, scene and focus change

OBJECT EVENTS

Abandoned, removed or stationary objects

CLASSIFICATION

Person, vehicle, animal and other classes

COUNTING

Zones and directional line crossing

PERIMETER

Protected zones and PTZ response

THERMAL VCA

Wide-area night perimeter support

HIGH DEFINITION SYSTEMS

VEHICLE & LICENSE PLATE ANALYTICS

Manage Access, Parking and Traffic Movement

License plate recognition and vehicle analytics connect identification with access rules, event search and occupancy insight.

- White and black lists
- Last occurrence search
- Entry / exit logic
- Traffic and parking reports

Static transport - parking, illegal standing

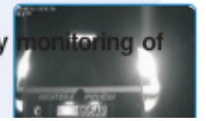
- Management of parking in Underground parking houses
- Access control (based on the read EVN)
- Black list (EVN with prohibited entry)
- White letter (EVN with entry allowed)
- Alarm Management of read EVN
- EVN search in logos (filter)
- Last occurrence of read EVN
- Current status (number) cars in a defined parking zone
- Parking detection outside parking zones

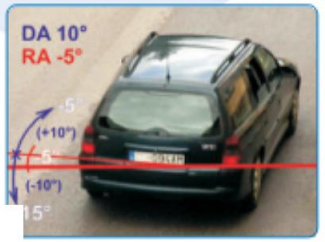




Vehicle plate recognition

- Parking management in combination with VCA Access cntrol system
- (combination with VCA) Border control system
- Black list White list
- Weigh-in-motion system
- Inventory management of traffic movement in the area Security monitoring of
- roads, check points
- Law enforcement





HIGH DEFINITION SYSTEMS

SCALABLE DEPLOYMENT

Build the Solution in Clear Stages

A structured design process connects operational needs to the right recording, analytics and response capabilities.

- Start with use cases
- Select cameras and streams
- Define analytics and actions
- Integrate and scale

01 **ASSESS**
Sites, risks and operator goals

02 **DESIGN**
Architecture, storage and network

03 **CONFIGURE**
Analytics, maps, users and rules

04 **INTEGRATE**
I/O, databases and third parties

05 **OPERATE**
Monitor, verify, report and improve

HIGH DEFINITION SYSTEMS

MLK SOLUTION • FUNCTIONS

Functions, Applications & Integration

Core functions, workflows, platform capabilities and integrations in one view.

Software and services



POST analysis
Video recording analysis. The occurrence of events in the defined zones in the record (you can add events, respectively playback).



SMART vision
Interface to third-party software (access systems, C4, IQ Home, ...).



FTP backup space
Send pictures to ftp server when the event occurs or firmly planned intervals.



DVR mode
Compact mode. Molekula acts as a compact recorder (can not get into windows environment).



Watch dog
HW designed watch dog for the case of "freezing" applications or services, impose HW reset.



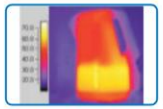
Data stream limit
The application which restricts the data stream used in the network. Network data stream limitting.



CTI and CEI
System according to the requirements of the operation CTI (Car Technical Inspections - periodical) and CEI (Car Emission Inspections).



Process
Process control, quality monitoring and detection of produced (shipped) products.



Thermo control
Control based on temperature of thermal camera.

More Molekula functions



Search engines by Time and Events
To search of the record, we can use the scroll bar (slider) or a sophisticated filter logs.



Panorama search
The distribution of the daily / hourly record a selected number of time intervals depending on the selected multiscreen.



Playback clip maker
Playback from predefined camera by pressing a predefined key (quick record view of the e.g. the football and hockey stadiums).



Total hybrid system
The ability to combine any system - analog, HD-SDI, IP.



Matrix function
Monitor wall and control cameras
display on individual monitors and cameras management with control keypads.



Alarm management
Defining system response based on different alarm event.



Instant playback
Instant playback the selected event.



Instant live
Instant live view from the defined
cameras.



IQ search
Intelligent video recording search in a defined zone.



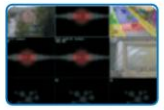
64-bit platform support
32 and 64 bit Windows platform support.



DXVA
Hardware decoding for live view.



Quick export
Export to AVI is much faster than
the length of the exported record.



Reconnect
Automatic connection after video loss.



Watermark checker
Authenticity checking of exported data.



Access control
Add to access system the image
of the entering person.

HDS + MOLEKULA

Professional Monitoring Without Compromise

Combine video management, analytics, alarm workflows and custom applications in one coherent solution.

- info@hdsas.eu
- www.hdsas.eu

LET'S DESIGN YOUR SYSTEM

Recording • Analytics • Alarms • Integration

CONTACT HDS

European producer • developer • distributor