

> VDG Sense & Siquira Integrated Video Surveillance



Teamwork in Video Surveillance

Our video surveillance solutions consist of VDG Sense, an open platform video management system with unlimited possibilities and Siqua, a carefully balanced portfolio of surveillance cameras and complementary products, such as fiber optic components and encoders. A perfect combination for a wide range of solutions.





A highly intelligent video surveillance solution with limitless potential.





VDG Sense

Unlimited scalability and easy integration makes VDG Sense the ideal video management system for any security solution, regardless of size, location or complexity. The user-friendly interface provides full control of all live camera streams and stored video data. It is scalable from a few cameras up to thousands of cameras and other devices, such as encoders, decoders and I/O interfaces. VDG Sense integrates seamlessly with our security management, parking, and access control solutions. A well-documented API and ONVIF support enables integration with third-party software such as intrusion and intercom systems. VDG Sense will automatically analyze and filter images, discover new devices, create events, and alert you when needed. No matter how large the setup, user-specific settings can be configured to ensure VDG Sense works the way each user prefers.



Trusted



Safe



Secure



Reliable



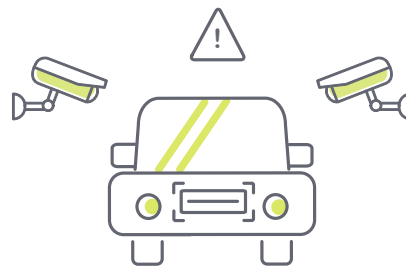


Key Features



Fully Customizable Layouts

V DG Sense layouts can be configured to fit your exact needs. Each layout can be easily created using a wide array of approximately 20 available panel types, such as: live video, playback, floorplan, action buttons, counter, bookmark, html page, clock, and so on. Layouts can be user specific and selected both manually as well as event driven.



Event-driven macros

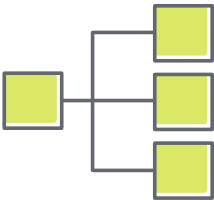
By creating rules with our unique macro engine, you can define system behavior and trigger actions when pre-defined events occur. Set-up is easy and macros can be assigned for server actions, as well as client actions.





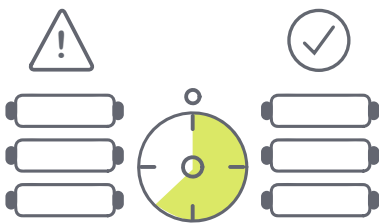
Smart Search motion detection

Motion based recording optimizes storage efficiently; only recording data when movement is detected in a camera stream. Parts of the scene can be masked to avoid irrelevant recordings. Motion data are stored in a database, enabling effective playback search in selectable areas of the video stream.



Dual streaming and multicasting

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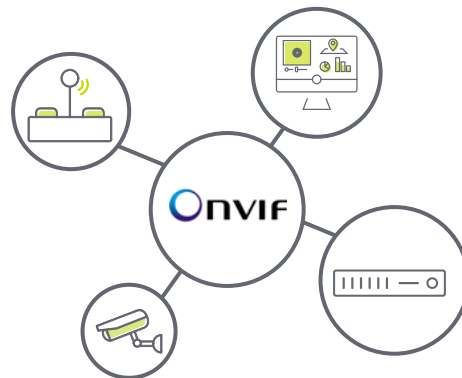
Failover protection

VDG Sense monitors more than 100 different points in the system, including network connectivity and hardware-related functions. In any failover situation, all clients and servers automatically reconnect to the hot stand-by server.



Edger server and camera storage

The VDG Sense Edge Server functionality was developed to 'repair' data loss of a VDG Sense cloud server in case of a Wide Area Network connection loss. The missing data will be downloaded from the edge server(s) on location to the centrally hosted cloud server and re-indexed, creating a seamless recording on the cloud server. The operator is informed of missing data in main storage and can then choose to sync the missing data into the main storage.



ONVIF Device Support

TKH Security is a full member of ONVIF, an open industry forum that provides and promotes standardized interfaces for effective interoperability of IP-based physical security products. Supporting standard features, like streaming video and PTZ controls (Profile S and Profile T), ONVIF also supports frequently used functionalities such as receiving event information from 'intelligent cameras' and downloading video information from the internal camera storage (Profile G), also known as 'edge recording' support, primarily used in Local Area Networks.





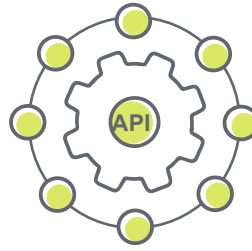
Active Directory

Authentication and authorization to VDG Sense can be managed and controlled via Active Directory, a directory service developed by Microsoft for Windows domain networks. The end-user's domain controller authenticates and authorizes the VDG Sense users, assigning and enforcing security policies for all VDG Sense clients and servers and installing or updating software updates. Active Directory uses the Lightweight Directory Access Protocol (LDAP). When a VDG Sense user logs into a client computer that is part of the Windows domain, Active Directory checks the submitted password and determines what rights the user has.



Virtual Machine solutions

A Virtual Machine (VM) solution is a compute resource that uses software instead of a physical computer to run VDG Sense. One or more virtual "guest" machines run on a physical "host" machine. Each virtual machine runs its own operating system and functions separately from the other VMs. Virtual machine technology is used for many use cases across on-premises and cloud environments.



API Connectivity

VDG Sense uses an HTTP/XML protocol for communication of third-party software. This interface is a set of http and xml-messages that are sent over a socket interface to and from one or more client applications. These messages can be instructions to obtain data like camera names, layout settings, record data, and a list of connected subsystems. These messages can also obtain instructions to be executed, like layout switching and alarm activation. Live and recorded images can also be retrieved.



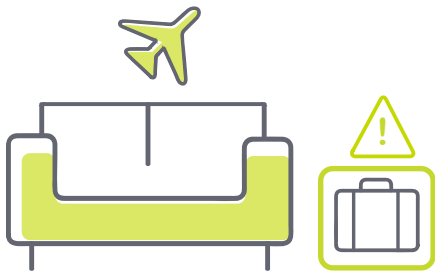
Video Content Analytics

In addition to receiving camera-based video analytics, VDG Sense offers server-based intelligent video content analysis (VCA), adding huge value to the collected video data. These algorithms constantly analyze the video streams and pre-defined rules can trigger actions and alerts. The key advantages of server based VCA are camera brand independence and superior calculating power compared to camera-based VCA. The available server-based algorithms are:

- > CarR - license plate recognition
- > ObjectR - object detection
- > ObjectC - object classification
- > ColorD *- color detection
- > FaceD *- face detection
- > SceneR *- scene change detection



VDG Sense | Server-Based Algorithms

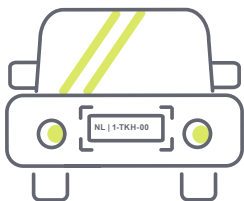


ObjectR- object detection

ObjectR is an optimized intrusion detection algorithm that extracts moving object from the background. These 'blobs' are tested against a predefined set of rules, but also stored along with the video for forensic search purposes. Siquira cameras fitted with the same algorithm are automatically recognized and "assimilated" in ObjectR. The following rules can be programmed:

- > Entering or exiting a specific area
- > Crossing a virtual line
- > Leave behind
- > Take away (vanishing) items
- > Dwell time in area (loitering)

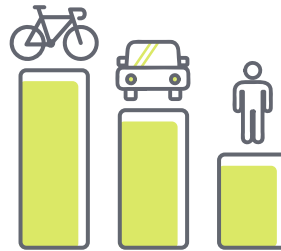
The events are used to trigger macros. Multiple rules can be set per camera, and, together with the event/macro feature, the applications are virtually unlimited.



CarR License Plate Recognition

A highly intelligent feature developed to scan license plates in a live-video stream. Example use cases:

- > Classify the license plate to the country of origin
- > Compare the identified license plate to black or white lists
- > Count vehicles to detect when a parking lot is full
- > Detect vehicles returning within a pre-defined period



ObjectC - Object Classification

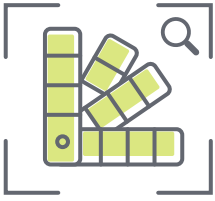
This algorithm classifies objects in a video stream using Deep Learning technology. The following eight object types that can be detected and classified: Person, Car, Bicycle, Motorbike, Bus, Train, Truck, and Boat. Using detection zones it is possible to trigger alarms if more than a number of these objects are in a zone for a certain amount of time. Practical examples:

- > **Crowd Management applications**
Example: Trigger an alarm if more than 10 people are in a zone for more than 10 seconds.
- > **Vehicle type detection**
Example: Trigger an alarm if a single bicycle is detected in a zone.
- > **Stop and Go applications**
Example: Trigger an alarm if a car is in a zone for more than 30 seconds

The algorithm works best in light-controlled environments where the objects to be detected are clearly visible, in the vicinity of the camera (20-30m), and tilted towards the object(s) at an angle of around 45 degrees.



VDG Sense | Server-Based Algorithms



ColorD* - Color detection

When triggered by an event, ObjectC will determine the dominant color in a predefined area of the video frame. Live alerts and forensic searches can be conducted based on the 'Color Detected' event of one of the 11 default colors.



FaceD* - Face Detection

Based on the presence of eyes, eyebrows, nose and lips, the algorithm creates a 'Face Found' event. This enables both macro actions as well as forensic research. It does not produce metadata to compare faces, making it a perfect solution for event-based actions without violating privacy regulations.



SceneR* - scene change detection

SceneR detects camera tampering and analyzes video images based on angle changes and/or loss of detail. If a camera is focused on a building entrance and the view of the door is blocked, it can detect this change of view and signal the security officer on duty to see if it is innocent or if further action is required. With the predefined angle-of-view and observed scene, the camera notices even the slightest change in view or perspective. This feature can also be found in Siqura cameras and edge devices.

**marked algorithms are standard inclusions in VDG Sense Pro*





Included Options

There are many features and options included in VDG Sense (*some of them exclusively in VDG Sense Pro) at no extra cost. Some of these key features are:

- > Client software
- > Mobile and web access
- > Video wall software
- > Multi-site architecture



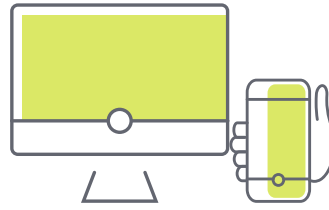


Client software

Our client software is built on two major principles:

- > Ease to use
- > Pleasant and clear design

There is no license charge for the client software and it can be installed on an unlimited number of PC's.



Mobile and web access

If required, VDG Sense servers can be monitored using a standard web browser and no plug-ins of any kind are required. Our mobile apps enable you to view and control your VDG Sense system from anywhere. Simply download and install the app on your mobile device (iOS/Android), connect it to your VDG server and you are in control.



Video wall software

Our video wall software offers the same flexibility as the client software and can be controlled manually or event-based. Similar to the client software, there is no license fee for the video wall functionality.



Multi-site architecture

The architecture supports installations with multiple locations. In these kinds of systems, it is most common that local clients are limited to the local VDG Sense system and central-based clients must have the right to connect to multiple (or all) the local installations.





Hardware & Architecture

TKH Security offers a wide range of server and client hardware, combined with a fully open architecture.





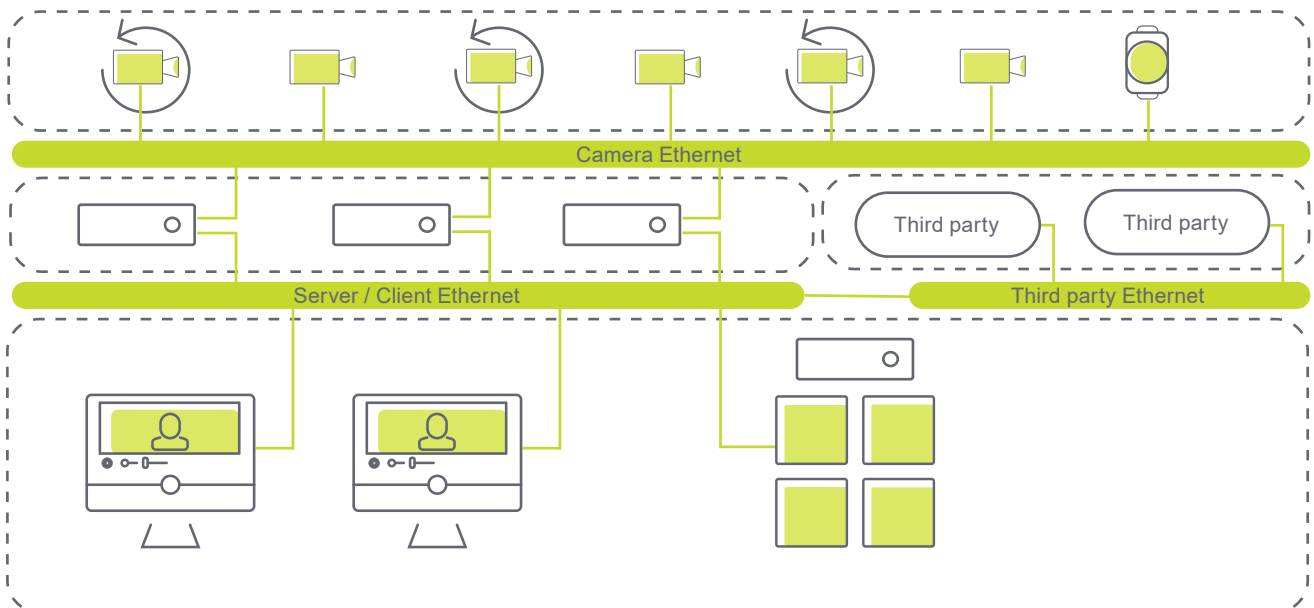
Server and client hardware

TKH Security offers a wide range of server and client hardware with directly attached storage capacity of up to 500TB per server as well as accessories like I/O modules and video encoders. The servers are built to project specifications, installed with operating software, VDG Sense software, Hardware & Architecture and extensively tested.



System architecture

VDG Sense is based on a server-client architecture with Direct Attached Storage (DAS) servers. The advantage of DAS against SAN or NAS solutions is that the relatively large amount of data are directly stored on the first device where it arrives and analyzed when it enters the video management architecture of servers. But VDG Sense also supports virtual hosting solutions, such as VMware® and HyperV® if so preferred by the end-user. The operating software, VDG Sense software, and all settings and database information are stored on solid state devices (SSD) and all recordings of video and audio data are stored on hard drives, built to customer specifications in Raid volumes.



License Model

VDG Sense is offered in different licenses and with various add-ons. The available add-ons are license dependent: VDG Sense Basic or VDG Sense Pro. In the schematic overview that follows you can see which add-ons are available with each license, such as video channels, analytics and third-party integrations.

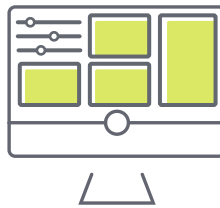


VDG Sense Start



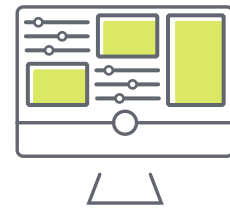
Free of charge and developed to discover our software.

VDG Sense Basic









Suitable for small businesses that require an easy to use and effective video security system, mainly for continuous capturing of images for research or evidence.

VDG Sense Pro



For large organizations and integration within complex video security environments. The PRO license includes all innovative functionalities and has virtually no limit on the number of servers and video channels.



	License		
	VDG Sense Start	VDG Sense Basic	VDG Sense Pro
 Video Channel(s)	4	32	Un
 I/O	2	2	Un
 Client	1	3	256
 Web	✓	✓	✓
 Mobile	✓	✓	✓
 Analytics			✓
 Plug-Ins			✓
 API			✓
 Video Wall			✓

VDG Sense Software Upgrade Plan

TKH Security offers a Software Upgrade Plan (SUP) for all VDG Sense software products and many of the add-on products. It can be purchased for a coverage period of one to five years. It is optional for all VDG Sense software products.

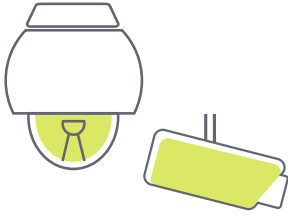




Siqura Cameras

The Siqura product range is the result of many years of experience in a vast variety of vertical markets, from retail to off-shore and everything in between. It covers the specific needs of these different users. From economic IP cameras with standard features all the way up to explosion proof stainless steel cameras with the highest grade certificates. Our cameras are ONVIF compliant, assuring seamless integration with all major video management systems, but the deepest integration possible is guaranteed using our VDG Sense video management software. In addition to the cameras, the Siqura range includes video encoders and decoders, fiber transmission modules, and network equipment. Many cameras have onboard video intelligence, that integrates seamlessly with the video management software. Examples are: facial recognition, loitering, left luggage, intrusion detection, license plate recognition. With Siqura we turn products into solutions.





Surveillance Cameras

Straight forward, off-the-shelf CCTV cameras with a twist. The Siquira cameras distinguish themselves by the set of high standards these cameras must meet, such as:

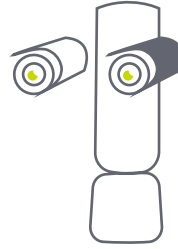
- > High quality and light sensitive CMOS megapixel sensors
- > Metal lenses that guarantee long lasting optical quality
- > ONVIF compliancy
- > Seamless integration with VDG Sense, iProtect and FlinQ
- > Built-in video content analytics (model depending)
- > License plate recognition or facial recognition with internal blacklist/ whitelist database



Mobility Cameras

Siquira mobility cameras are designed with the specific requirements of the traffic market in mind. Special corrosion proof, high resolution cameras for in tunnels, 36 times zoom PTZ cameras for incident detection along the motorways. The Siquira mobility cameras are made and tested for the optimal availability and maintainability.

- > Variable and zoom related pan and tilt speed
- > Continuous rotation, tilt angle from -90° to +40°
- > Wind load up to 200 km/h
- > Preset accuracy of 0.02°
- > Powder-coated stainless-steel (316L)
- > Hermetically sealed housings against water and dust

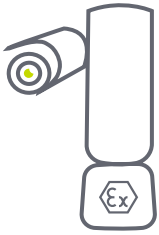


Marine and Industrial Cameras

Solutions in this segment must be fit for challenging environmental conditions. Environments like the chemical industry, offshore, and marine environments. Our cameras are designed, manufactured and tested to operate reliable and corrosion free in aggressive, salty and sulfur-rich environments like the chemical industry, offshore, and marine environments. We offer cameras and pan & tilt units for these demanding situations with specifications, such as:

- > Powder-coated or electro-polished 316L stainless-steel
- > IP66/67/68 dust and water proof protection
- > IK10 vandal resistance
- > Wiper and washer units
- > Side-mount pan & tilt units
- > Visible and thermal imaging cameras
- > Active air-cooled housings

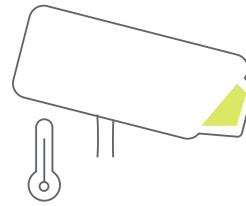




Explosion proof cameras

The life-saving effects that a reliable perimeter surveillance system offers cannot be overemphasized, especially in the Marine, Oil & Gas (MOG) industry. Here, a dependable explosion-proof video surveillance system can be extremely useful to help cover critical areas. Additionally, these cameras help ensure a new level of safety for this industry. As “eyes on the ground” the cameras provide 24/7 monitoring of valves, flares, pump areas, etc., in hazardous environments. A quick and simple solution to avoid major and costly incidents before they escalate or even begin. Typical features are:

- > Corrosion protected 316L stainless-steel
- > ATEX and IECEx certified for gas and dust
- > IP66 / IP67
- > Integrated power supply (24, 115 or 230 Vac)
- > Integrated heater
- > Electro-polished 316L sun-shield
- > Direct to fiber connection
- > Low maintenance
- > Thermal cameras with grid protected germanium window

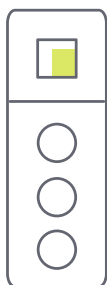


Thermal cameras

Thermal cameras can be used 24/7 for a variety of monitoring and detection purposes. Most cameras have video analytics to actively help with perimeter surveillance (ObjectR), fire detection, flare monitoring, and hotspot detection. Typical applications are harsh environments like traffic, tunnels, marine, offshore, heavy industry, waste management, etc. The direct-to-fiber connection makes it suitable to cover long distances and less susceptible to lightning. Below we have outlined a selection of typical features of our thermal cameras:

- > Dual imager: 10x zoom Full-HD + Uncooled thermal imager
- > Compact, robust, and corrosion free powder-coated 316L stainless steel housing
- > Plug & Play
- > Nano glass optical window
- > Water and dust tight: IP66 & IP67
- > ONVIF Profile S
- > 100Mb/s duplex single mode fiber connection

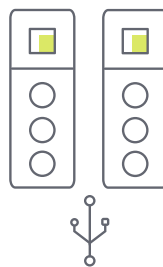




Video encoders

Our video encoders make the migration to IP affordable by converting the existing analogue camera signal to an IP video stream. By combining advanced picture enhancement and efficient video encoding our EVE series encoders deliver the highest detail, clarity, and brilliance at the lowest bit rates. Nowadays encoders are mostly used to integrate existing analogue cameras into a new IP based camera architecture. Our product range offers high-quality video streaming performance. Depending on the model the encoders can have the following features:

- > Support of high resolution analogue video
- > 4 x 4 - channel blades fitted into a single 1HU 19-inch rack
- > Two internally switched GBE ports for flexibility
- > Dual streaming per camera in full frame rate at best-quality H.264 high profile
- > 16 channel version in a rack-mountable 19"-1HU form factor
- > Modular compact DIN-rail mount
- > Highest port density at this quality of video
- > Onvif profile S
- > Tamper detection
- > Edge storage
- > DIN-rail mount

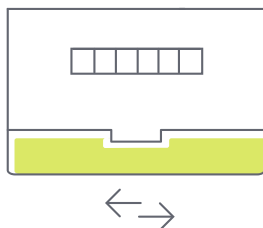


Video over fiber

The general purpose of fiber transmission is to convert analogue or digital video, audio and data information into optical signals and transport it over relatively long distances without delay or latency. The optical signals are not affected by electro-magnetic disturbance or lightning surges and therefore commonly used in industrial environments, infra and mobility projects and many other situations where disturbance free and long distance performance is of vital importance. Some of the key features of our product range are:

- > Single optical fiber for simultaneous transmission of multiple camera and data signals
- > 10-bit video sampling for extremely high video quality over long distances
- > HighSpeed (HS) expansion ports
- > No latency or delays
- > Very high quality video $\geq 67\text{dBw}$ SNR
- > Network Management System (NMS) compatible
- > DIN rail support via 9995 mounting kit
- > Adjustment-free operation
- > Compact stand-alone and rack-mount versions

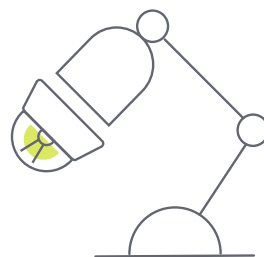




Network equipment

Our range of network equipment fulfills all the requirements of reliable video streaming over IP networks, from standard usage to trouble-free operation in harsh environments. The range includes products to connect cameras directly to ethernet, coax and fiber networks. Main features (type and model depending) of our network products are:

- > Power over Ethernet Plus (PoE+)
- > Auto-negotiation and automatic MDI/MDI-X detection
- > High EMI immunity
- > NEMA TS 2 certified
- > Non-blocking store-and-forward switching
- > Password-protected web interface
- > SNMP, with dying gasp feature
- > IGMP multicast and Rapid Spanning Tree
- > VLAN tagging (802.1Q)
- > IQ-ring and IQ-chain quick fault recovery



Camera Accessories

The Siquira portfolio offers a wide range of mounting accessories to support a variety of camera installation requirements, including wall-, ceiling-, and pole- mounting brackets for all our fixed and PTZ cameras. It also includes washer and wiper units for use in onshore, offshore, marine, and heavy industrial environments. We also offer a wide choice of P-iris, DC-iris and manual iris lenses up to 8MP resolution, for the Siquira body cameras.





About TKH Security

With over 25 years of experience and by listening to customer needs, we offer complete innovative solutions for security management, video surveillance, parking facility management, parking guidance and asset & site management. We have offices worldwide at 17 locations and are a member of [TKH Group N.V.](#)

For more information about the specific product detailed in this brochure, contact us at tkhsecurity.com.





tkhsecurity.com

Our Brands:



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