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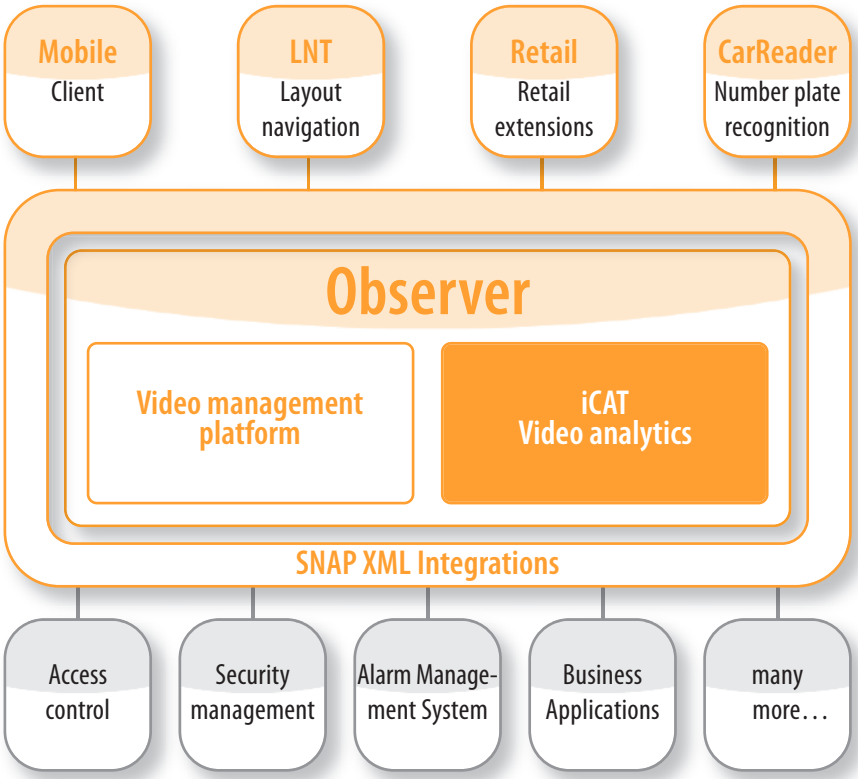
Integrated Video Analytics with NETAVIS iCAT

iCAT is the video analytics toolbox of **Observer** that works with any camera. It provides powerful and easy-to-configure object detection and tracking mechanisms as well as a statistics module with integration to the event management system EMS. It works in difficult situations and with various camera perspectives. Functions include: Sabotage detection for analog and IP cams, object detection and tracking, people counting, customer behavior and more.

Observer product family

The Observer product family offers several powerful modules that are seamlessly integrated. These modules allow the Observer to be flexibly tailored to specific customer requirements and vertical markets.



Server-based vs. camera-based

Server-based with Observer
+ Works with ALL cameras (also analog)
+ Much more CPU power on the server available
+ Algorithm development is non proprietary and therefore much faster
+ Setup for all cameras is the same
+ It works today
– Bandwidth utilization is higher

Video analytics in the camera
+ Bandwidth of network is offloaded
+ Computing power of modern cameras is used
– Only available with special cameras
– Cameras are more expensive
– Proprietary for each camera vendor or even camera model
– Technology and integration still immature
– Video analytics spanning more than one camera is not really possible

Benefits of integrated video analytics

Integrated video analytics have the potential to add considerable value to security applications as well as business processes.
Benefits:
- Help security operators to detect prohibited, unusual and dangerous situations
- Relieve security personnel from the strain of too much data (alarms are only triggered for relevant situations)
- Reuse the basic video surveillance infrastructure at minimal extra cost
- Business process measurement and optimization (e.g. customer behavior, logistic chains)
- Real value for business processes through integrations with external systems

Unlike conventional video analytic solutions, iCAT is seamlessly integrated and can be easily customized to meet monitoring requirements at minimal costs.

Future-proof video analytics with NETAVIS

NETAVIS iCAT is open for all camera vendors, with all the advantages of server-based video analytics (see comparison). At the same time, you are free to switch to camera-based analytics when the technology matures.
Currently, server-based video analytics has many advantages over the still limited possibilities of proprietary camera-based analytics. Additionally, iCAT also allows you to integrate special algorithms or tools of other video analytics vendors.

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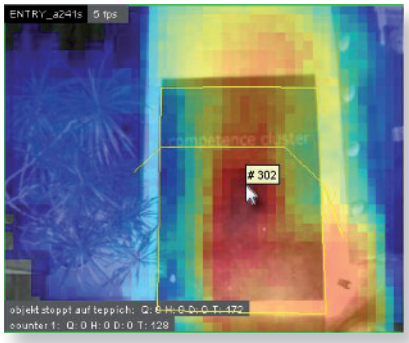
iCAT functions

Smart Tripwire©

The unique Smart Tripwire© technology prevents duplicate and incorrect counting of objects. An iCAT Smart Tripwire© is directional and only counts objects that have been detected in the detection area first and move across afterwards.

Visual statistics©

iCAT can collect statistics about object counts, speeds, sizes, stopped objects and objects' stopping time. These statistics can be visualized by color overlays over the normal video stream in the online monitor and also when replaying recordings.



Object detection and tracking

- For each camera a tracking region that is either the full camera view or a part of it in the form of a polygon or rectangle can be defined
- Object detection and tracking can be restricted by object size, speed, and x/y size ratio
- iCAT annotates the video stream with various object annotations which can optionally be displayed in the online monitor and also when replaying recordings

People and object counting

- Counting of people and objects is possible with the Smart Tripwire©
- People and objects moving in the wrong direction can be detected and an event can be triggered

Illegal starting and stopping of objects

- iCAT can be programmed to detect illegally starting or stopping objects with possible constraints for staying duration and object sizes

Sabotage and lighting change detection

- iCAT can detect camera covered, camera turned, camera defocused, loss of analog video signal on video server
- iCAT can also detect sudden lighting changes

Time scheduling of iCAT operations

- All iCAT operations can be scheduled with the powerful Observer time scheduling tool that allows multiple schedules per camera (e.g. different schedules for day and night, or for weekdays and weekends)

iCAT-based event generation and recording

- All iCAT detections trigger events are forwarded to the Observer EMS for further processing. Such events are stored in the event database for later searches, retrieval and reporting
- Recording with various settings can be triggered by iCAT events

Statistics export

- iCAT event statistics can be exported in Excel (.xls) format for generating customized reports on statistics
- Automatic and scheduled export of statistics data to external systems (.csv format)

High performance

- iCAT algorithms have been fine-tuned for the highest performance and least strain on the server

Supported video streaming standards

- Generally iCAT works on MJPEG streams but can also work on all supported MPEG formats if the camera cannot deliver MJPEG streams