

LEONARDO CYBER & SECURITY SOLUTIONS

# GANIMEDE

## VIDEO CONTENT ANALYSIS PLATFORM

## ARTIFICIAL INTELLIGENCE AT THE SERVICE OF SECURITY

Security is not only a growing need in every sector but has become an indicator of the quality of a service. More sophisticated sensors are allowing surveillance systems to generate massive amounts of data that needs to be analyzed and processed, potentially overwhelming security operators. New techniques based on artificial intelligence (AI), neural networks, and deep learning in support of security systems are becoming a key factor for effective solutions. Leonardo has developed innovative, AI-based platforms, secure-by-design, for the massive analysis of video and data.

### MAKE SENSE OF VAST AMOUNTS OF VIDEO DATA

With an estimated 200 million closed circuit cameras in use globally, nearly 1.5 trillion hours of video footage is captured daily. Much of this is never reviewed due to lack of time or resources. As a result, anomalies in normal activities and security threats may go unnoticed in time to prevent incidents. AI-based video surveillance allows users to proactively:

- Analyze large volumes of video to obtain intelligence that aids increased detection, prediction and accuracy
- Receive timely alerts on critical situations and improve security and crime prevention
- Support control room operators by having more efficient use of resources

### GANIMEDE: INTELLIGENT VIDEO ANALYSIS

Ganimede is Leonardo's platform for large-scale analysis of live and recorded data streams through deep learning. It is a product of Leonardo's extensive knowledge and experience in video analysis technologies, IT platforms, and security, supported by competence centers specializing in artificial vision and deep learning.

## KEY FEATURES

Ganimede video content analysis platform enhances situational awareness and transforms threat detection from a manual, resource-intensive operation into an efficient, automated process.

- Provides a unique platform for audio/video analysis
- Offers a unique framework deployable for data centers, edge computing, and automotive

### SCALABILITY AND FLEXIBILITY

The platform can support different usage patterns:

- An online video processing component for analyzing, recording and generating real-time alerts towards an event management platform
- An offline video processing component for analyzing videos after events

Ganimede can be deployed in various configurations supporting different workloads and operational contexts:

- Data center centralized architecture serving extended areas
- Edge computing where optimized bandwidth management and distributed autonomy is required, such as for intelligent applications in LTE/5G environments

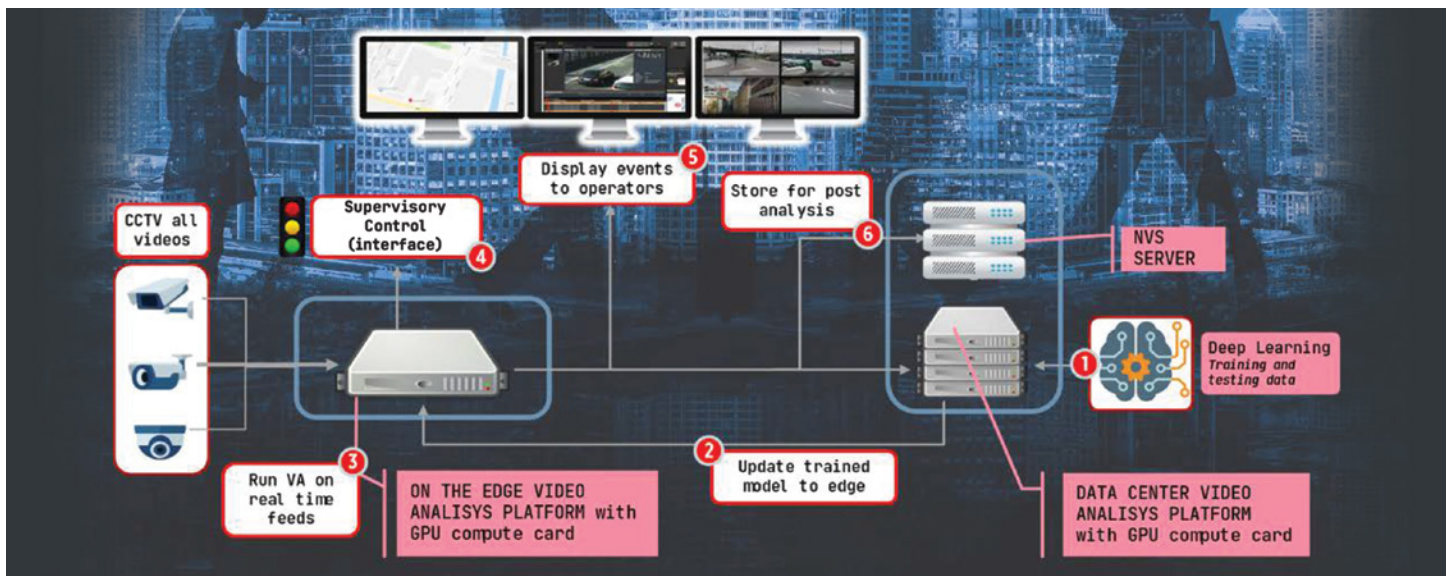
Users of the flexible and scalable platform can:

- Make the outcome of processed video available
- Configure the sending of events associated with patterns detected by specific algorithms
- Create tasks by dynamically allocating algorithms to configured video streams
- Dynamically allocate tasks based on available resources

### FUNCTIONAL MODULES

Ganimede is a user-friendly web-based solution that provides detailed parameters for the most experienced system administrators. Features include:

- Configuration of users, roles, CCTV cameras and video resources, video analysis algorithms, processes and specific elements for environment configuration
- Dashboard for monitoring and managing system resources and active processes
- Define events, alerts and endpoints (to which events can be sent)



## THE ALGORITHMS

Ganimedede includes a set of algorithms that can be classified in:

### DETECTION:

To determine the presence of a type of object or entity, such as a person or a car in form or color.



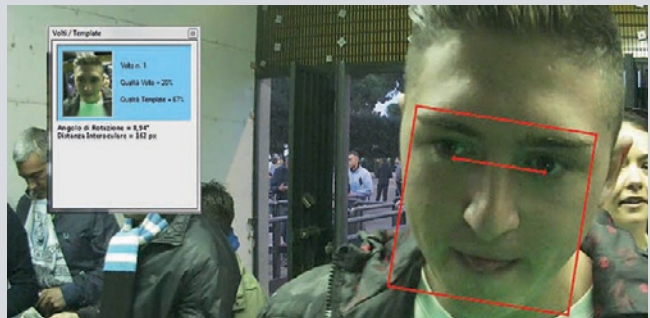
### CLASSIFICATION:

To recognize and possibly identify, persons or cars belonging to a known database or according to an open world approach.



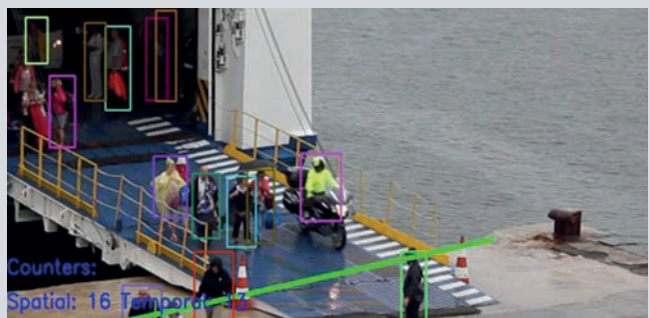
### IDENTIFICATION:

To recognize the occurrence of an individual item (such as a specific face, number plate, object) already made known to the system.



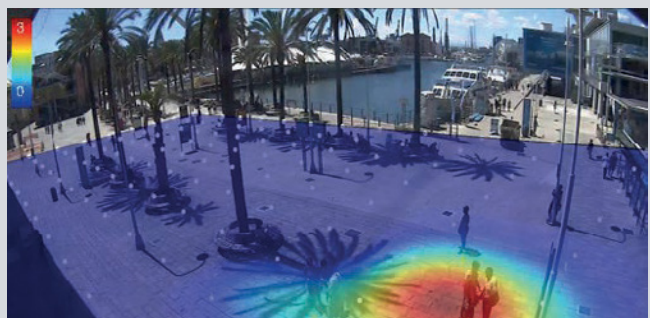
### COUNTING:

To count specific objects in a single, or sequence, of frames.



### (HIGH/LOW) DENSITY ESTIMATION:

To estimate the population of objects present in a specific region of interest.



## A LEAP FORWARD IN SECURITY MANAGEMENT

- Integration with Leonardo's unique Security & Safety Control Centre (SC2) platform
- API for easy integration with 3rd party VMS
- Flexibility and configurability are compatible with existing CCTV infrastructures
- Early warnings and real-time alerts for video and audio pattern recognition
- Automated security, enhanced safety, and more efficient operations
- Potentially reduces storage/server costs

## LEONARDO CONVERGENT SECURITY ECOSYSTEM

The integration of Ganimede with the Leonardo security platform (SC2), cyber and communication (CSP) platforms creates a unique, global and innovative security solution for different sectors as:



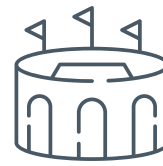
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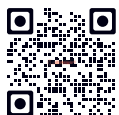
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