

# SUEvi enhances intelligent transport system

STELOP's scalable, upgradable and expandable video surveillance solution

An intelligent transport system leverages sensor, information and communication technologies to make transportation more efficient, safe and environment friendly.

As the "eye" of the intelligent transport system, STELOP's vision-based surveillance system has an edge over other sensor technologies in that it provides wide area surveillance and supports video analytics which enables smart detection and alert under varying transport situations.

In view of the various types of camera systems deployed in the transportation network as well as a multitude of video analytics required for different scenarios, all of which require instant detection and prompt response to situation, STELOP is providing a cutting edge, seamless, realtime video surveillance solution called "SUEvi".

SUEvi, meaning "Scalable, Upgradable, Expandable Video Intelligence", consists of a comprehensive framework, supporting implementation of advanced video analytics solutions. These video analytics include motion detection, panoramic view, image enhancement and application specific analytics via SUEvi embedded module to provide realtime surveillance intelligence for homeland security and defence applications.

SUEvi, with its scalability, supports multiple surveillance sensors. This allows expansion of video surveillance networks and its applications. The embedded platform allows modular upgrade of different video analytics applications to suit different operational requirements.

As illustrated in the diagram (opposite page), the SUEvi module is capable of acquiring video data streams from



SUEvi baseline module

different types of EO sensors and transmits the processed video data to users via its integrated wired or wireless video transmission interface. This front-end video analytics solution reduces latency over the network and alleviates data storage requirements.

SUEvi hardware architecture is designed with the flexibility to

allow multiple SUEvi modules to be cascaded in series or parallel-docking to increase the number of input video channels or for multiple levels of video analytics applications. It can be easily configured as a receiving gateway for transmitted video to be managed for distribution, storage or for post video analytics functions. The module comes with common video interfaces supporting both analog and digital IP video streaming and has a scalable video compression feature which optimises transmission over channels with limited bandwidth. In addition, all video streams will be watermarked to enhance video and data security.

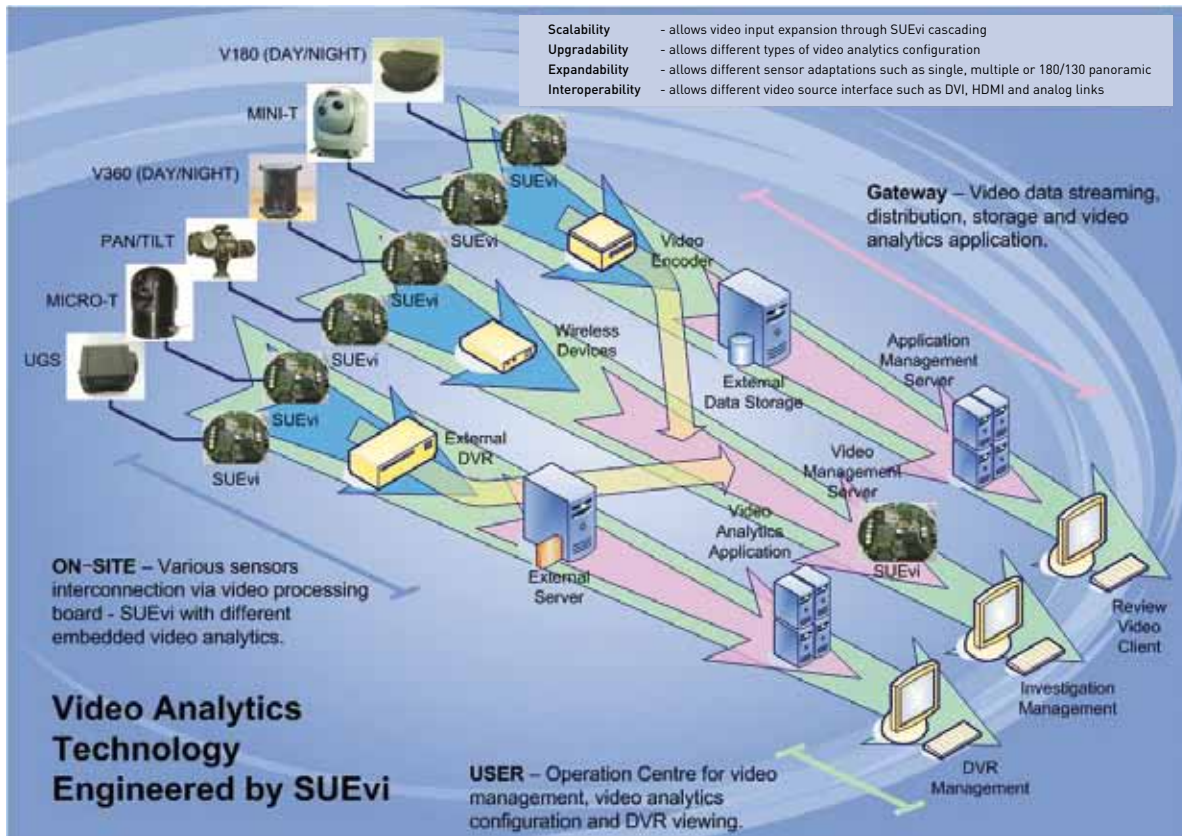
Below are some examples of how SUEvi can enhance the intelligence of transport systems in the area of vehicle safety, where realtime detection and reactions are essential:

### Collision Warning and Avoidance

Day and night sensors with SUEvi installed on the trailing vehicle can be used to capture the image of leading vehicles and road information. The combination of vision perception and fuzzy decision-making provides the collision warning and avoidance capability.

### Lane Detection and Lane Change Warning

The position of the vehicle in the lane and the lane edge markings ahead and to the side of the vehicle are



Scalable, Upgradable, Expandable Video Surveillance

monitored by LIDAR or vision system. With detection and recognition residing in SUEvi, a warning can be issued or there will be alteration to the course of the vehicle if its position deviates from the lane.

**Monitoring Driver Vigilance**

When a driver’s state of alertness is lowered due to fatigue, drowsiness or distractions, SUEvi-based vision system is able to detect this through recognising changes in the driver’s facial expression.

With all its flexibility in terms of scalability, upgradability and expandability, SUEvi provides additional video analytics functionalities to existing and new EO systems. It is cost-effective as it is built on a common video processing platform. SUEvi’s interoperability allows various sensory systems to be linked and to communicate with each other, involving only minimum changes and cost of implementation to both existing operational and maintenance infrastructures.

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