100% MADE IN CIAS

SYNAPSES

THE FUTURE OF PERIMETER PROTECTION

THE SELF-ADAPTIVE MULTISENSOR SYSTEM WITH VIDEO ANALYTICS AND DEEP LEARNING CRITERIA THAT INCREASES THE PERFORMANCE OF YOUR PERIMETER SYSTEM

EXTREME SECURITY SINCE1974

V 1.0

CIAS®

SYNAPSES

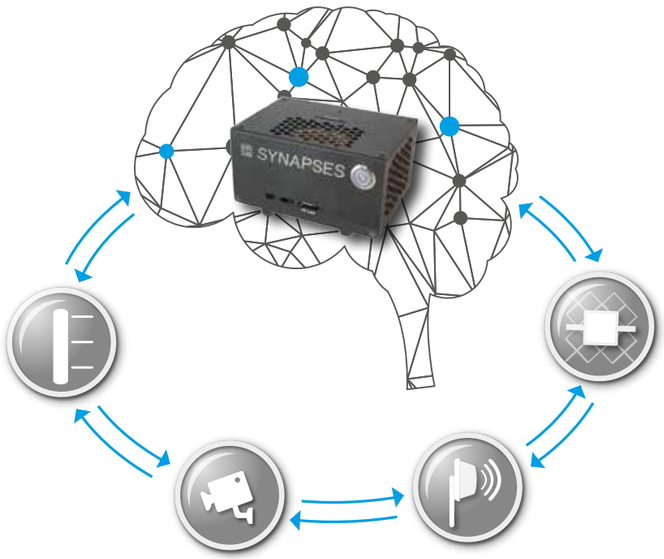
WHY IS SYNAPSES INNOVATIVE?

Synapses goes beyond video analysis!

We developed SYNAPSES inspired by the market need to integrate video systems with perimeter security devices. SYNAPSES is a new "super-sensor" system which, thanks to embedded AI, can harmonize the performance of the whole anti-intrusion solution of the external perimeter.

SYNAPSES IN 5 POINTS

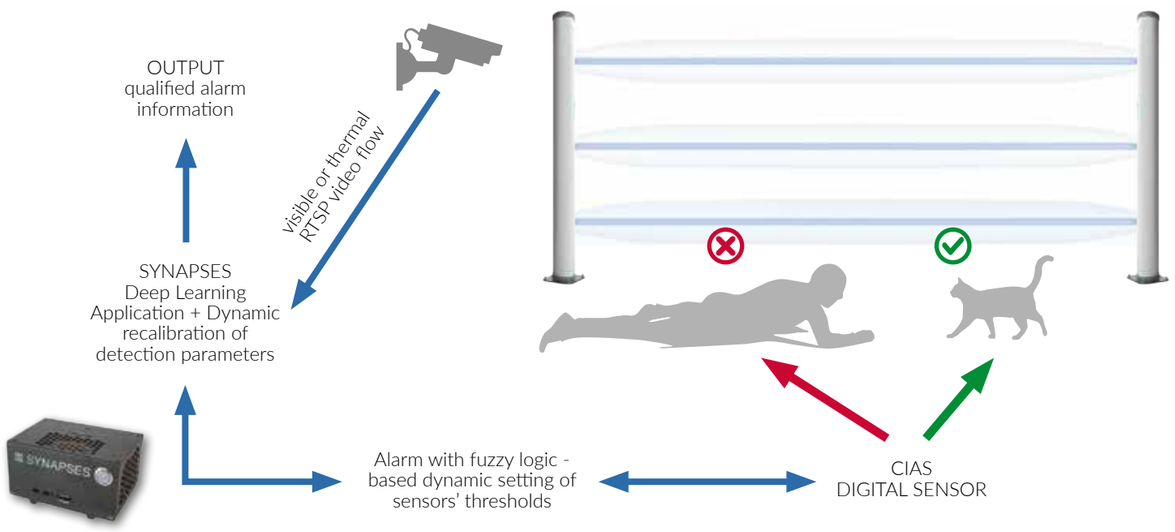
1. neural connection between video analytics and perimeter sensors
2. self-adaptation of the perimeter sensors' sensitivity depending on the identified target
3. management of perimeter areas with video analytics and deep learning criteria
4. reduction of nar (nuisance alarm rate) and increase of pod (probability of detection) like never before
5. it can be integrated in existing cctv or perimeter systems



«FUZZY» INTERACTION BETWEEN VIDEO AREAS ←→ CIAS DIGITAL SENSORS

The FoV (Field Of View) of the single connected camera can be divided into 8 freely configurable areas and can be combined with 32 field sensors. SYNAPSES is able to distinguish within the video stream (stream via RTSP IP) the presence of different targets called "Classes": man, animal, car, truck and other important targets that can generate alarms. This information is sent to the connected sensors which will change the previously set detection thresholds to calibrate them accordingly. The result of this neural connectivity is an enhancement of detection rate along with a higher discrimination of false alarms.

"FUZZY" INTERACTION
between video areas ←→ Cias digital sensors



HOW DOES SYNAPSES WORK?

SYNAPSES classifies moving objects through Deep Learning video analysis, dynamically adapting the thresholds of CIAS digital sensors.

IF THE MOVING OBJECT IS CLASSIFIED AS AN **ANIMAL**, SYNAPSES WARNS THE SENSOR TO LOWER THE SENSITIVITY THRESHOLD TO AVOID FALSE ALARMS

IF THE MOVING OBJECT IS CLASSIFIED AS A **MAN**, SYNAPSES WARNS THE SENSOR TO RAISE THE ALERT THRESHOLDS INCREASING THE PROBABILITY OF DETECTION

What is Deep Learning AI

"Deep Learning" is a specialization of "Machine Learning", based on the use of artificial neural networks organized in several layers, deep and deeper (hence the term "Deep"), until they become properly trained to recognize different "Classes", in a self-learning process (hence the term "Learning").

HOW DOES THE TARGET CLASSIFICATION TAKE PLACE?

In video analysis (Video Content Analysis VCA) specific image analysis algorithms are built, but always limited to the evolution of those who develop them, on the other hand SYNAPSES through Deep Learning algorithms is able to perform an intelligent analysis of the field, to self - dynamically adapt the operation and therefore the detection of the sensors.

Using this deep learning analysis, SYNAPSES classifies the various targets that can generate alarms. In order to classify the image, this must be approximately 125 pixels per meter (Recognition) according to the characteristics indicated by the D.O.R.I. model. For the generation of the model the minimum size must be 25 pixels.

What is the D.O.R.I. model?

Developed by the BSIA (British Security Industry Association) the **D.O.R.I.** is an international standard that establishes how far a camera should see in visibility conditions. Thanks to compliance with the parameters indicated for each of the 4 levels, **D**etection, **O**bservation, **R**ecognition, **I**dentification, the camera will be able to guarantee an adequate performance for the application. In this case it will distinguish at a level of detail the moving target, for example a man from a dog.

ULTIMATELY WITH SYNAPSES YOU CAN:

- INCREASE THE INTELLIGENCE OF YOUR SYSTEM
- MAXIMIZE INTRUSION PERFORMANCE
- UPGRADE YOUR EXISTING PERIMETER SYSTEMS

TECHNICAL DATA

1 VIDEO CHANNEL SUPPORTED IN INPUT (RTSP PROTOCOL - FULL HD)
UP TO 8 AREAS OF VIDEO ANALYTICS WITH DEEP LEARNING
UP TO 4 SENSORS TO BE COMBINED TO EACH OF THE 8 AREAS
CONFIGURABLE FROM ANY BROWSER VIA ON-EDGE WEB-SERVER
REMOTE SOFTWARE UPDATE
AREA AND SENSORS' STATUS DISPLAY VIA OUTPUT VIDEO STREAM
1 VIDEO STREAM CHANNEL IN RTSP OUTPUT (25 FPS - 1920 × 1080)
5VDC-4A INPUT POWER WITH DEDICATED POWER SUPPLY
ENVIRONMENTAL CLASS I - INDOOR +5° C / +40° C
POSSIBILITY OF MONITORING VIA IB-SYSTEM IP OR IB-SYSTEM-LITE
POSSIBILITY OF MOUNTING ON DIN RAIL SUPPORT

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we use GREEN ENERGY