Product Description

ARGUS is a smart and compact computer vision device that allows authorities and/or municipalities to extract key urban metrics from built-in cameras, deployed at street level. It's artificial intelligence is capable of recognizing a high number of events and objects and reports via long range wireless, without the need of cloud or traditional network deployments.
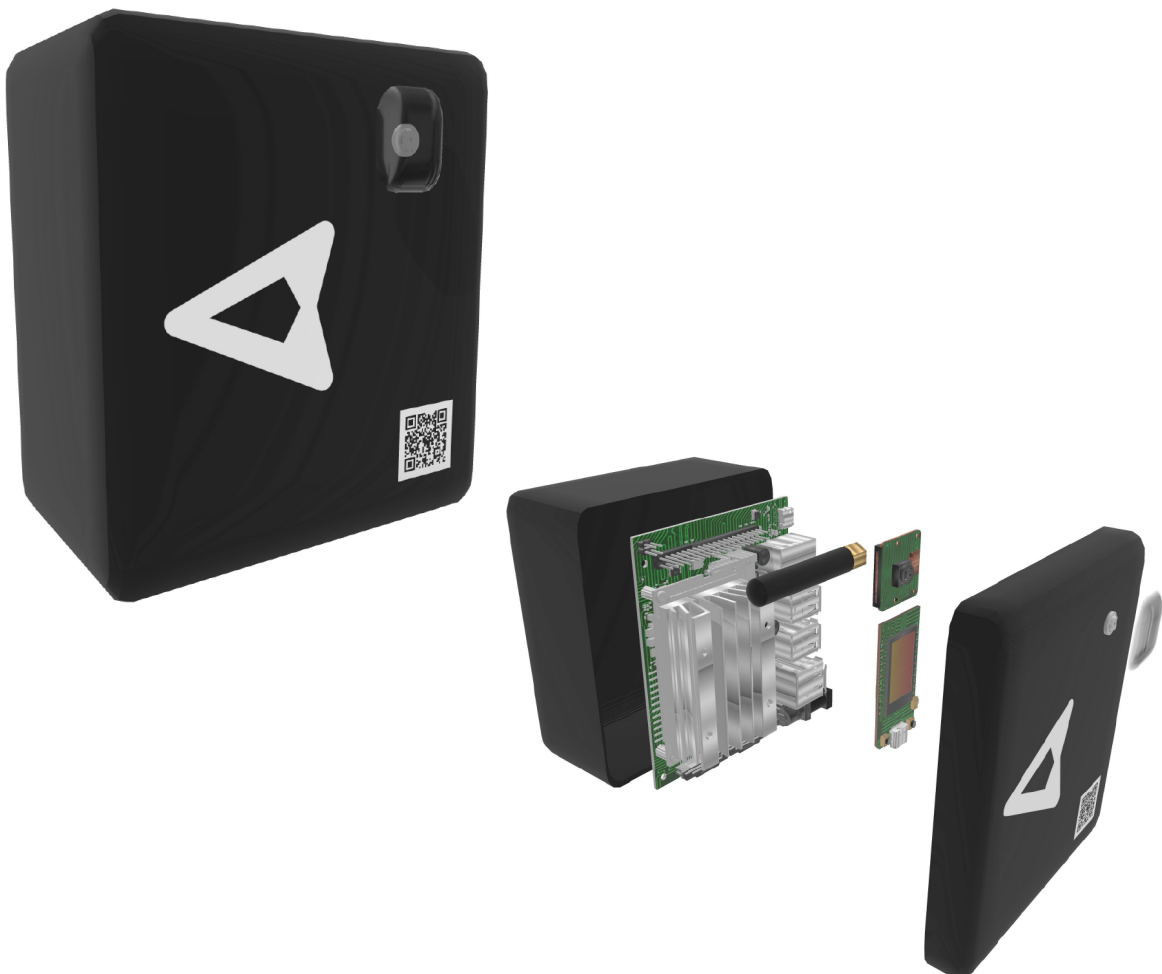
Product Details

High resolution built-in camera

Multiple programmable AI functions, ALPR, pedestrian, bicycle or car counting, people flow tracking, urban security, etc.

Long wireless range

Edge computing, without Internet or cloud connection.

LoRaWAN 1.0.2 compatible

ARGUS-001

Technical specifications

Hardware Specification	Value
Model	Waterproof box with mounting screws.
Protection	IP67
CPU	Quad-core ARM® A57
GPU	NVIDIA Maxwell architecture with 128 NVIDIA CUDA® cores
RAM	4 GB
Sensitivity	-139dBm @ LoRa & 62,5 kHz & SF = 12 y 146bps -136dBm @ LoRa & 125 Khz & SF = 12 y 293bps-118dBm @ LoRa & 125 Khz & SF = 6 y 9380bps-123dBm @ FSK & 5 kHz & 1,2 Kbps
RF Power	14 dBm (LoRa), 20 dBm (WiFi)
LoRaWAN	Class A only. OTAA support.
Consumption (Typ.)	2A @ 5V
Power Supply	220V power plug
Temperature Range	-20°C to +70°C
Installation	Preconfigured plug-and-play, wall or poler mounting
Configuration	Remotely, via LoRaWAN downlink frames

Methodology

ARGUS is a plug-and-play IoT device. As it comes preconfigured, it only needs a power connection in a location with LoRaWAN coverage.
The device will automatically join the available network and will start monitoring the street in which is installed by means of the built-in high-resolution camera.

The device packs several working modes, powered by multiple AI computer vision models that run on GPU-accelerated edge-computing low power computer. Each mode powers a use case and can only be used exclusively in any given time. Modes of operation can be changed via scheduling of LoRaWAN downlink frames.

Working Modes

- Entity counting

In this mode, the device recognizes up to 80+ classes of objects and vehicles (Cars, Trucks, Buses, Motorbikes, Trains, Bicycles, Pedestrians, Backpacks, Handbags, Suitcases, Skateboards, etc.). Each detection is assigned an ID number and can be tracked along the camera range, identifying speed and direction of movement. In future versions of the product, these entities will be able to be tracked, even between different ARGUS devices.

The product reports a total count by entity type periodically, attending to the configured timer.

- Automatic License Plate Recognition

In this mode, the device recognizes and reports cars, and vehicles license plate numbers whenever they are detected by the built-in camera.

Could be used for vehicle tracking, low traffic zone controlling, access controls, etc

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