# VIMOC Crosswalk Pedestrian Detection

Pedestrian safety is of utmost importance in the design of shared vehicle/pedestrian zones. Solutions that improve visibility for drivers and pedestrians are key to reducing the risk of accidents. Pedestrians are the most vulnerable parties when such events occur, so VIMOC has implemented a rapid pedestrian detection system running on our Landscape Computing platform. We identify when a pedestrian is approaching a designated shared space such as a crosswalk and our system rapidly activates flashing LEDs embedded on that shared space to alert the driver of the collision risk ahead. The signal can also be sent to traffic signal control boxes as an input to either change the light's state for traffic purposes or accident avoidance. The technology will also be key to ensuring the safe and efficient operation of autonomous vehicles, by strengthening their intelligence with intelligent and connected infrastructure.

With VIMOC's rapid pedestrian detection system there is no need for pedestrian input. We detect pedestrians and activate the traffic signals or warning-LEDs immediately.

VIMOC is leveraging its Landscape Computing platform to run vision/deep learning algorithms to identify a pedestrian and detect their approach to the shared vehicle/pedestrian zone. As soon as the detection is positive, the neuBox sends an output signal to the traffic signals or flashing LED systems that are often user/ button activated. With VIMOC's solution there is no requirement for pedestrian input.
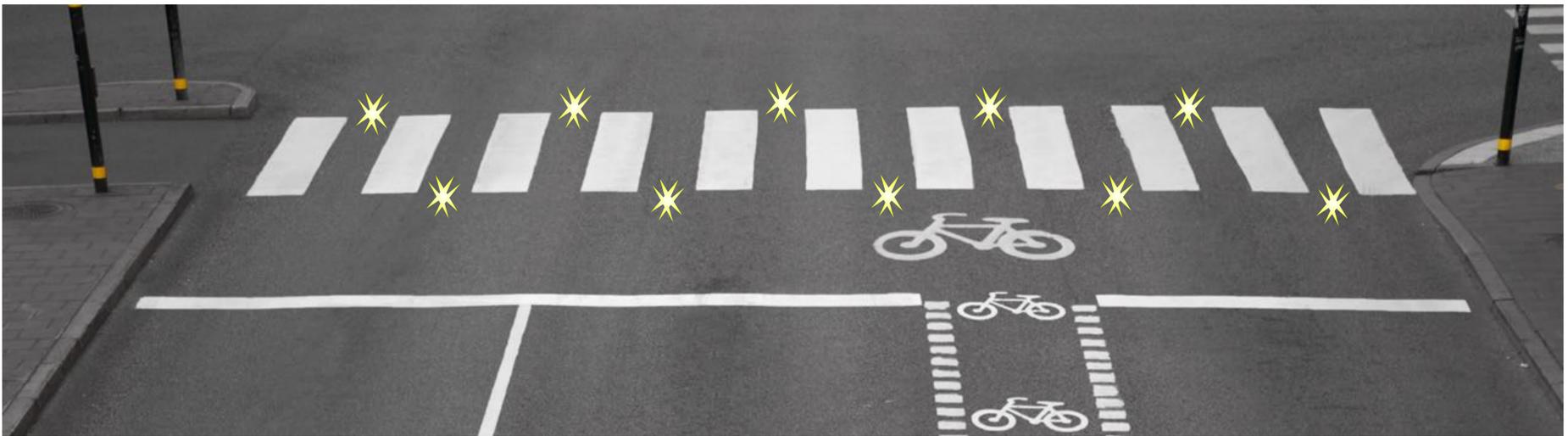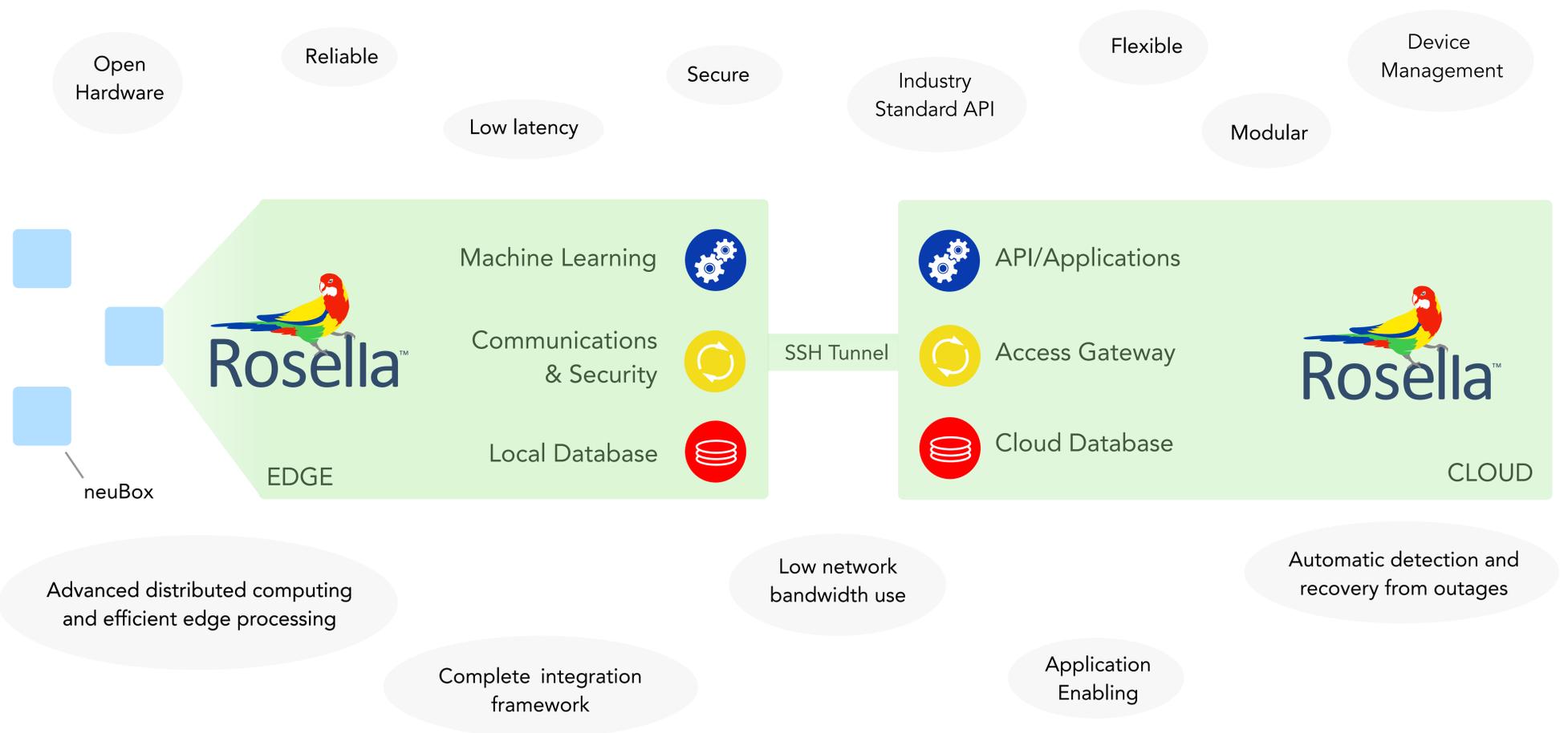
Application-Enabling API

VIMOC has a developer API based on industry standard technologies, which allows third party vendors to integrate live information from VIMOC's Landscape Computing network in order to enrich and enable new applications. Below is a list of companies currently using our API.

VIMOC Technologies

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Rosella™ Landscape Computing Software

VIMOC's Rosella™ IoT software stack is an end-to-end solution from the edge of the network to the cloud. This solution creates a seamless and robust link that allows intelligent infrastructure to drive intelligent applications.

Rosella Embedded is a distributed software solution performing sensory data capture and processing at the edge of the network, while efficiently cooperating with other Rosella Embedded computing nodes and the Rosella Cloud. Each embedded software node performs data normalization, message parsing, edge processing pipeline and storage, with an extended framework for machine learning, vision processing etc.

Rosella Cloud is the software component which communicates with the Rosella Embedded computing nodes to authenticate and collect the intelligence produced by this network. This intelligence is presented via the Rosella API to enable advanced applications and services, including visualization, data mining/ analytics etc.

Open Hardware

Reliable

Low latency

Secure

Industry Standard API

Flexible

Modular

Device Management

Rosella

Machine Learning

Communications & Security

Local Database

SSH Tunnel

API/Applications

Access Gateway

Cloud Database

Rosella

EDGE

CLOUD

neuBox

Advanced distributed computing and efficient edge processing

Complete integration framework

Low network bandwidth use

Application Enabling

Automatic detection and recovery from outages

Enabling a new generation of services & applications

The Rosella platform will enable a new generation of applications to enhance customer convenience, lower labor costs, improve cash management and increase overall productivity. This is thanks to the Rosella Embedded machine learning framework, consisting of a library of deep learning machine vision algorithms for detection and classification tasks. The Rosella Embedded software can also connect to a variety of sensors that are commonly used in parking infrastructure. This feature enriches the data available to Rosealla API developers to design new applications and enhance existing services such as public safety and parking services.