



Zero-Configuration Wireless Sensing and Actuation Products

VersaSense provides wireless Internet of Things (IoT) products and services that **radically reduce the total cost of ownership for industrial sensing and control systems**. Our award winning MicroPnP product line is a game changer for the sensing and control marketplace. MicroPnP provides a standards-based solution that radically reduces the cost of acquiring, building, and operating highly scalable wireless sensing and control systems.

The MicroPnP product line is based on modern industry standards that enable a new generation of sensing and control systems. MicroPnP provides zero-configuration **plug-and-play sensor and actuator** peripherals that can be managed from the cloud and that easily integrate with your existing systems.

MicroPnP provides managers with a real-time overview of network operation and device status. Our best-in-class energy management results in a **10-year battery life**. The SmartMesh IP product line provides **99.999% network reliability**, while the LoRa product line delivers **multi-KM range**. Best practices in **end-to-end security are standard** across the complete product range.

MicroPnP delivers these unique features at a **fraction of the acquisition cost** of traditional wired and wireless sensor and actuator products.

The benefits of MicroPnP can be obtained through two deployment models – a product model that can be easily integrated into private ICT infrastructure, and a managed cloud-based service model including remote management and business intelligence facilities.

Contact VersaSense:

Web: www.versasense.com

Mail: info@versasense.com

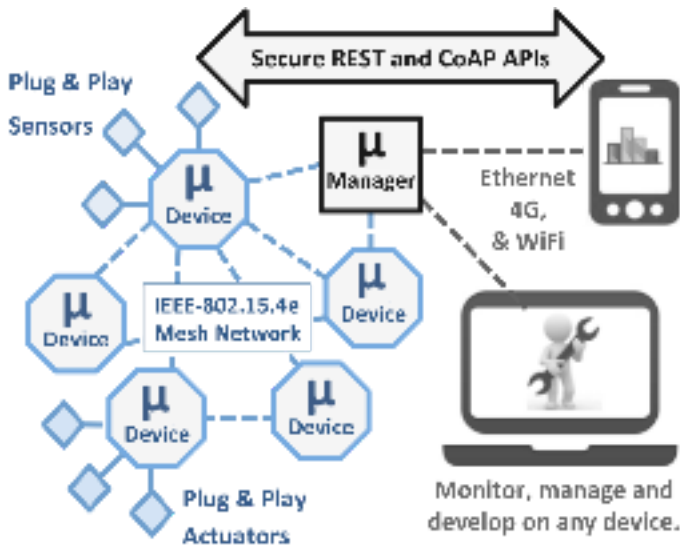
Address: Kroegberg 3, 3000 Leuven, Belgium

Tel: +32 496475564

Flexible Deployment Models for VersaSense Products

1. Sensing-as-a-Product

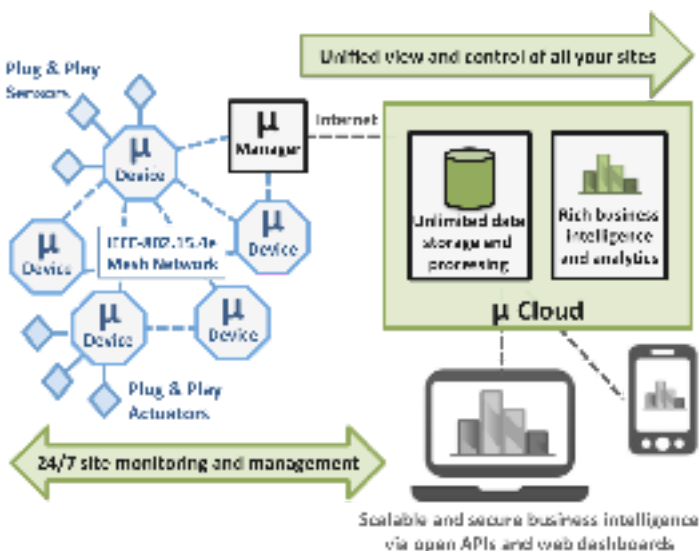
Easy and seamless integration of sensors and actuators with your existing network infrastructure:



- Integrates with all IP-based networks.
- Standards-based network stack (6TiSCH, IPv6, CoAP, IPSO)
- Simple integration APIs for Java, JavaScript, and NodeJS
- Drastically reduce development costs by eliminating hardware prototyping

2. Sensing-as-a-Service

End-to-end sensing and actuation for all of your sites, provided through a managed cloud product:



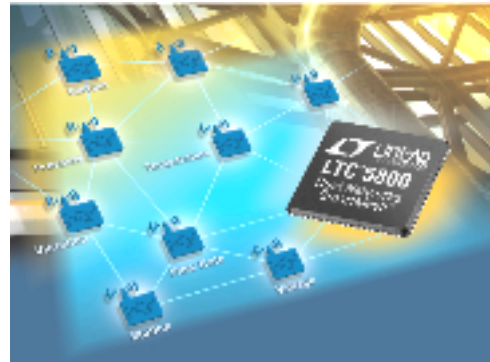
- 24/7 monitoring & control of devices across different sites
- Scalable and secure end-to-end communication with your devices
- Lower total cost of ownership
- Unlimited redundant data storage and processing
- Rich business intelligence, data visualization, and analytics support with real-time multi-site data streaming.

MicroPnP Key Technologies

VersaSense sensing and actuation products combine best-in-class wireless networking with the award-winning MicroPnP sensing system developed by VersaSense.

SmartMesh IP™

- 99.999% wireless network reliability
- NIST-certified AES-128-CCM security
- Extensible, self-healing mesh networks
- Up to 100 devices per manager
- Standards-based: IEEE 802.15.4e, 6TiSCH and 6LowPAN



LoRaWAN™

- 5KM suburban range, longer in appropriate deployment conditions
- 128-bit AES-CTR security
- Up to 1000 devices per manager
- Compatible with all major LoRaWAN providers across the world

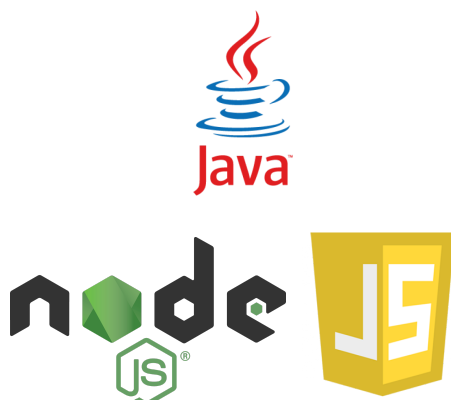
Plug & Play Sensing and Control

- True plug-and-play integration of sensors and actuators
- Automatic software driver installation and management.
- Over 15 existing sensors and actuators available.



APIs for key Languages

- Software development libraries in diverse languages: Java, JavaScript, and NodeJS
- Full access to your devices using IETF CoAP and RESTful APIs
- Business logic may run anywhere, from your local network to the Cloud



Case-Studies

VersaSense works with customers to deploy custom sensing and actuation projects. **What can VersaSense do for your business?**

Long-distance Pipeline Monitoring

MicroPnP devices monitor long distance chemical pipelines, providing **precision monitoring of infrastructure and real time alerts** for leaks, accidents or tampering. The MicroPnP mesh network provides an extremely reliable and extensible communications medium that can extend to cover huge distances, while operating for up to a decade on a single battery.



Precision Animal Farming

MicroPnP devices provide real-time monitoring of livestock. Efficiency is enhanced through plug-and-play sensors and actuators that install in minutes to provide **live, high-resolution data on animal conditions** including: feed consumption, water use, temperature, humidity, air quality and pollution.



Building Energy Management

MicroPnP devices are being applied in energy management use cases that range **from home energy profiling to data center optimization**. Plug-and-play sensors provide a detailed understanding of energy flow in the environment along with monitoring of appliance power consumption. Plug and play actuators allow for automatic control of devices.



MicroPnP Network System Elements

Code	Element	Description
A00	MicroPnP Weather-proof Armor	<ul style="list-style-type: none"> Waterproof outdoor enclosure for P01/P04 Built using heavy duty ABS plastic
P01	MicroPnP SmartMesh-IP Wireless Device	<ul style="list-style-type: none"> SmartMesh IP™ 802.15.4e 2.4GHz Network Module 99.999% reliable mesh network. Supports 3 MicroPnP peripherals Smart battery with real-time monitoring Compact indoor case
P04	MicroPnP LoRa Wireless Device	<ul style="list-style-type: none"> LoRa™ 868MHz Network Module. Up to 5KM range in suburban settings. Supports 3 MicroPnP peripherals Smart battery with real-time monitoring Compact indoor case
M01	MicroPnP SmartMesh-IP Wireless Manager	<ul style="list-style-type: none"> SmartMesh IP™ 802.15.4e Network Module Supports up to 100 MicroPnP wireless devices (P01) 802.11b/g/n WiFi and 100mbps Ethernet Compact indoor case RESTful API and web interface.
C01	MicroPnP Public Cloud Setup	<ul style="list-style-type: none"> Dedicated cloud instance on Amazon EC2 High performance processing and storage in time-series database Customizable dashboards and alerting for data & device management RESTful API and web interface.
C02	MicroPnP Public Cloud Subscription	<ul style="list-style-type: none"> Yearly per-device public cloud hosting fee.
C03	MicroPnP Private Cloud	<ul style="list-style-type: none"> Enterprise-grade server, switch and cabling. High performance processing and storage in time-series database Customizable dashboards and alerting for data & device management RESTful API and web interface.

Need support guarantees?

VersaSense provides a range of service contracts to support enterprise IoT deployments. Contact us to find out more.

MicroPnP Plug & Play Sensors and Actuators

Code	Description	All Weather Compatible (A00)	Needs Power Supply (S00)
S00	Programmer and USB Power Supply	NO	NO
S01	Passive Infrared Presence Sensor	NO	NO
S02	Accelerometer Rotation Sensor	NO	NO
S03	Temperature Sensor (combined with S04)	NO	NO
S04	Humidity Sensor (combined with S03)	NO	NO
S05	Microphone	NO	NO
S06	Barometric Pressure Sensor	NO	NO
S07	Pyranometer	YES	NO
S10	Light Sensor	NO	NO
S11	RFID reader	NO	YES
S14	AC Power Monitor and Relay	NO	NO
S15	Surface Temperature Sensor	YES	NO
S16	Ultrasound Distance (100 cm range)	NO	YES
S17	IR Object Detection (15 cm range)	NO	NO
S19	Buzzer Actuator	NO	NO
S21	Heat Flux Sensor	YES	NO
S22	CO2 Gas Sensor	YES	EXTERNAL
S23	Memory display	YES	NO

Need a sensor that is not listed above?

VersaSense performs custom sensor integration with economic pricing and low lead times. Contact us to find out more.

The logo for VersaSense features the company name in a large, white, outlined font. The text is set against a background of several horizontal blue lines that create a sense of motion or depth, with the lines tapering off at the ends.

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