Overview

The **WiDatanode** is an IoT sensor designed to measure the **crowding level** of public and private spaces. It detects the Wi-Fi signal emitted by mobile devices (e.g., smartphones, tablets) and processes it to extract the **density of people** in the monitored area in real time, using custom-designed Artificial Intelligence algorithms. The device complies with all privacy regulations, including **GDPR**, as the processed signal is entirely random.

The sensor ensures **high-accuracy detection** in all environments, from public places and public transportation vehicles, to retail spaces and events. Thanks to its **IP65-rated** industrial enclosure and the versatile mounting bracket (included), it allows seamless deployment in both indoor and outdoor environments.

Key features

- ➔ **Edge AI processing**: local processing of signal patterns through embedded AI
- ➔ **Hybrid connectivity**: supports Ethernet, Wi-Fi, and 4G LTE via USB modem
- ➔ **GPS geolocation**: accurate positioning via GNSS
- ➔ **Offline time sync**: integrated RTC module with battery backup
- ➔ **Industrial-grade enclosure**: IP65 protection against water, dust, and sunlight
- ➔ **Fast deployment**: Plug & Play system with modular accessories
- ➔ **Flexible power supply**: supports both PoE (48V) and USB 5V
- ➔ **Remote management**: check device status and send updates Over-The-Air

Use Cases

✔ Smart Cities
Monitor people's usage of urban environments, parks, pedestrian zones, and public squares to support infrastructure planning, crowd management, and urban mobility optimization.

✔ Events & Festivals
Track real-time crowd levels and movement during concerts, fairs, and sports events to ensure safety, optimize layout design, and evaluate attendance metrics.

✔ Public Transport & Mobility Hubs
Deployable on buses, trams, or stations to anonymously detect passenger flows, enabling source-destination mapping and supporting public transport service planning.

✔ Retail & Shopping Centers
Measure visitor trends and dwell time in commercial areas to support marketing strategies, evaluate store performance, and improve customer experience.

Technical Specifications

Model	WiDatanode V2
Wi-Fi Module	Integrated 3x 8dBi omnidirectional antennas
Detection Range	Up to 50 meters in open space
Connectivity	Wi-Fi 802.11n, Ethernet, 4G LTE
Interfaces	Ethernet RJ45, Serial UART
Power Supply	5V USB or 48V PoE+
Status Indicator	Power ON / OFF LED
Geolocation (optional)	GPS module with integrated GNSS antenna
Time Synchronization	RTC module battery backup
Operating Temperature	0°C to +50°C
Ingress Protection	IP65 enclosure resistant to water, dust, humidity, wind, and solar radiation
Installation	Universal mounting bracket and U-bolts for pole or surface attachment (included). Dimensions: 148.5 x 105 x 99mm - ∅ 112m
Weight	~1,5 Kg
Dimensions	27.2 x 27.6 x 9.6 cm
Color	White