WAVELET
Ayyeka’s Wavelet is an Industrial Internet-of-Things (IIoT) system, created in order to bring modularity and flexibility to the world of remote data acquisition.

The Wavelet is a discreet, robust device that autonomously operates best-of-breed, third-party sensors, using battery, solar power, or a permanent power source. The sampled sensor data is collected, transmitted securely, and then stored on Ayyeka’s cloud-server and/or a customer’s on-premises server. Data can be visualized and managed via Ayyeka’s web-based graphical data management system, and integrated into SCADA and higher-level software analytic systems.

With its introduction to the infrastructure market, Wavelet is becoming a dominant IIoT solution for setting up cyber-secure, plug-and-play, affordable smart infrastructure networks.

APPLICATIONS

- SMART WATER NETWORKS
  - created to better manage water and wastewater resources

- ENVIRONMENTAL
  - monitoring for research and governmental databases

- SMART POWER GRID
  - setup enabling energy efficient power networks

- OIL AND GAS
  - data remotely collected and provided to decision makers

- CIVIL INFRASTRUCTURE
  - data collected autonomously facilitating preventative maintenance

- SMART CITIES
  - are built with Ayyeka’s modular Wavelet solutions

DESCRIPTION

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WAVELET SPECIFICATIONS

Data & Software

- Data Hosting: Ayyeka Private Cloud and/or On-Premises Server
- Cyber-Security: AES-256 Encryption
- Software Integration: SOAP-API, REST-API
- SCADA Integration: OPC-UA, OPC-DA, OPC-HDA, DNP3, CSV
- Ayyeka User Interface: Web-Based, Tablet, Mobile
- Data Export Options: CSV
- Device Memory: Up to 4 GB
- Data Communication: Bidirectional
- Alarm Notification: SMS, Email
- Alarm Threshold: Up to 8 per Data Stream
- System Health Check: Included

Power

- Primary Power Supply: Field-Replaceable Internal Military-Grade Lithium Battery, 3.9V DC 3A
- Battery Capacity: 32Ah
- Voltage Input: 4.5 V – 28 V DC
- Operational Run Time: 3,500+ Transmissions per Battery Pack, 4+ Years*
- Battery Status: Included
- External Power: Solar and Permanent Power Compatibility, Automatic Power Source Switching

Sensor Integration

- Sensor Ports: 3 Ports; Supports up to 12 Sensors Using Cable Splitters
- Sensor Position: External Hard-Wired
- Serial Interfaces: RS485, SDI-12, RS232
- Serial Protocols: Modbus RTU, ASCII, Custom
- Serial Channels: Up to 15
- Analog Channels: Up to 4 (current loop, voltage)
- Discrete Channels: Up to 2
- Sensor Power Supply Output: 12 V, 350 mA

Connectivity

- SIM Card: Global SIM Card and Data Plan Included
- Cellular Roaming: Global SIM Card Supports Over 140 Countries
- Configuration & Upgrades: Remotely (over-the-air), USB PC Connection
- Data Transmission Profile: Periodic, Data Dependent
- Antenna: Internal or External Built-In GPS Included

Mechanical Enclosure**

- Dimensions (W x H x D): 13.2 cm x 16.5 cm x 7.3 cm (5.2 in. x 6.5 in. x 2.9 in.)
- Weight: 0.7 kg (1.5 lbs)
- Enclosure Material: Molded Polycarbonate
- Waterproofing Rating: IP 68 / NEMA 6P
- Hazardous Location: Class I Div 1, ATEX Certifications (pending)
- Operating Temperature: -20°C to 60°C
- Storage Temperature: -40°C to 80°C
- Temperature: -40°F to 176°F

* Assumes operation of one pressure sensor sampling once every 15 minutes and transmission once every 4 hours
** Complies with Radiated emission standards (ETSI EN 301 489-1/ -17 Class B and CFR 47 FCC Part 15 Subpart B Class B), Immunity per ETSI EN 61000-4-2, 3, 4, 5, 6, RoHS Directive 2002/95/EC and CEC

Installation of Wavelet Sewer Overflow Kit in San Francisco, CA
SCADA & SOFTWARE

From cloud-based hosting and an intuitive user-interface to secured and streamlined SCADA connectivity, the Wavelet delivers data directly where it is needed. Integrating with models, analytics and business intelligence solutions has never been easier.

RUGGED DESIGN

Molded polycarbonate designed enclosure with IP 68 / NEMA 6P waterproofing rating to allow for installation in the most corrosive and aggressive of environments. For industrial and commercial use.

CYBER-SECURITY & ALERTS

Wavelets are embedded in every layer from the ground up with the most advanced cyber-security technology including sensor authentication and data encryption. Receive alerts directly to your phone or email in case of an urgent event.

REduced COST oF OWNERSHIP

As an integrated, modular, and preconfigured solution that allows for plug-and-play installation and requires minimal maintenance, the Wavelet delivers an attractive total cost of ownership.

AUTONOMOUS & REDUNDANT

Low-power and predictive analysis algorithms result in up to 30% extended battery life as compared to similar technologies. Redundant communication concurrently supports 2G, 3G, CDMA, LPWAN, Bluetooth, and satellite connectivity.

RAPID DEPLOYMENT & SCALABLE

The Wavelet is sensor-agnostic, utilizing various configurations of sensors and samplers. Easily installed and operating within minutes, Wavelets can be used to build or extend smart networks.

For More Information:

www.ayyeka.com  +1 (310) 876-8040  info@ayyeka.com

Ayyeka provides cyber-secure, plug-and-play, remote monitoring solutions designed for various markets. Ayyeka has an installed base in challenging locations and earned a reputation for excellent customer service. Bringing together a state-of-the-art hardware and cloud-based software package, Ayyeka's solutions are leading the infrastructure monitoring sector into the future.

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