



# INNOWAY IOT PLATFORM



viettel

► **VIETTEL HIGH TECHNOLOGY INDUSTRIES CORPORATION**

Viettel High Technology Corporation is the main research and production unit of Viettel in the fields of military, telecommunications, and civilian technology.

► **DEVELOPMENT ORIENTATION**

- The corporation's products are developed and based on pioneering technologies, creating a reliable defense security system to firmly protect national sovereignty, a network connecting all smart devices (5G, IoT, AI) for socio-economic development.

► **VISION**

- Becoming a corporation with "Pioneer Technology - Accompanying the world" Contribute to building a safe society where everything is interconnected smartly.

► **MISSION**

Making life easier and more convenient and smarter through technologies. Contributing to the protection of national security and modernization of national defense through self-reliance in military equipment and telecommunications infrastructure. Creating a digital society for people, bringing technology in every corner of life.



## CUSTOMERS AND PARTNERS

### PARTNERS

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# IOT CENTER PLATFORM & SOLUTIONS

# VIETTEL IOT PLATFORM

## INNOWAY

The pioneering Vietnamese platform provides CMP service for IoT applications using Cellular technology.

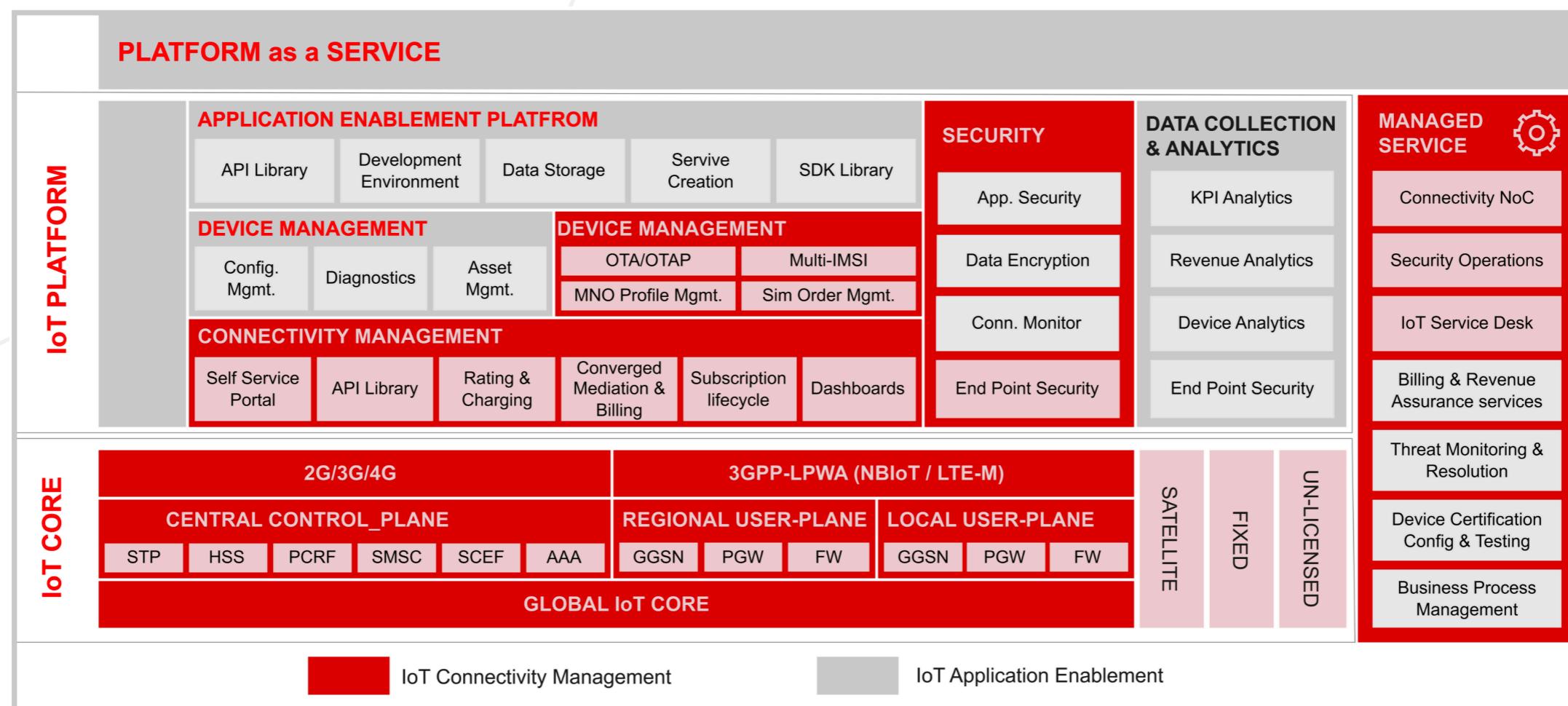
The platform is trusted by Government customers, potentially cooperate on implementing Smart City, Digital transformation projects following Government investment.

Innoway will simplify and optimize the process of building applications and IoT solutions from design to management with an all-in-one solution, including:

- Devices (Module)
- Software Development Kit (SDK)
- IoT Back-end Platform
- Applications (Application)

Innoway is a centralized IoT management system provided by VHT, enabling the collection of data from billions of hardware devices and offering real-time data management, monitoring, and analysis services. It is built upon four main layers:

- Things (Devices)
- Connectivity
- Core IoT functionalities
- Applications and data analysis

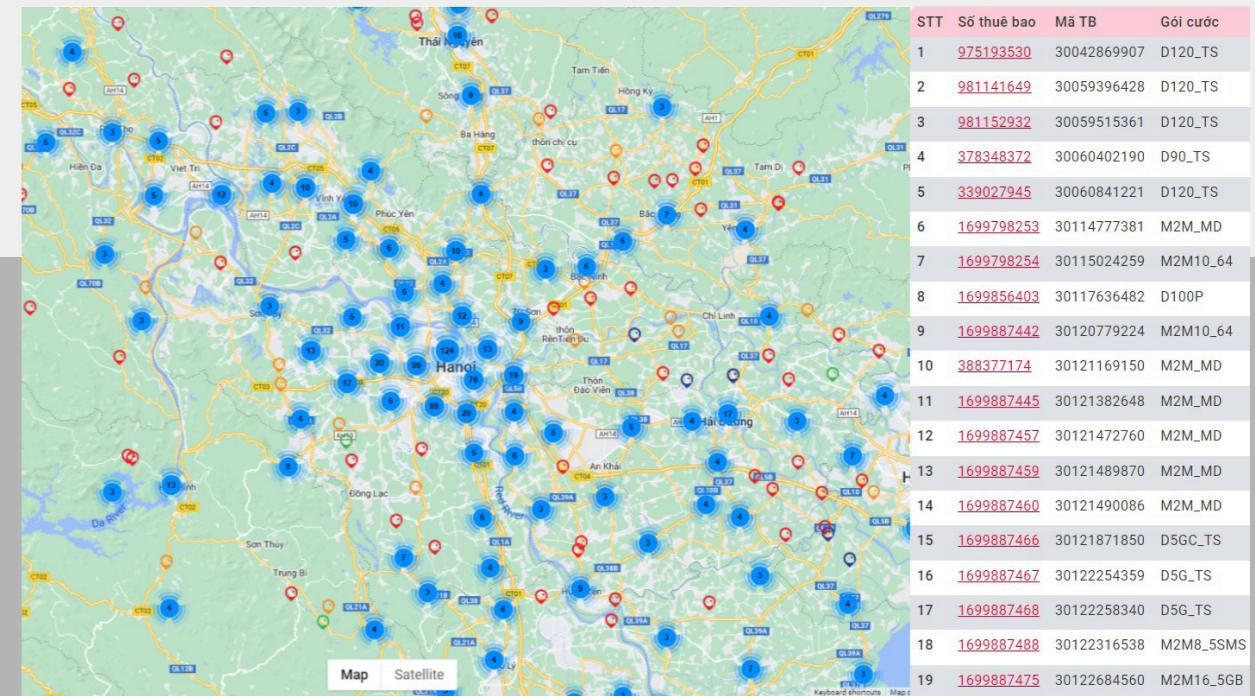


# CONNECTIVITY MANAGEMENT PLATFORM

- CMP is highly important in the development of a high-performance and practical IoT platform.
- Enabling organizations to reduce costs related to managing IoT connections and significantly improves control capabilities.
- Promoting the extensive expansion of connectivity services based on telecommunication network infrastructure.
- Supporting the management and monitoring of device connections with the network infrastructure.
- Providing a robust set of tools to optimize investments and device value throughout the product lifecycle.

## KEY FEATURE

- New subscriber registration
- Top-up credit for subscribers
- Block/unblock subscribers
- Subscriber management (active status, blocked status, package information, etc.)
- Contract management
- Order management
- Payment management
- Subscriber area management



# APPLICATION ENABLING PLATFORM

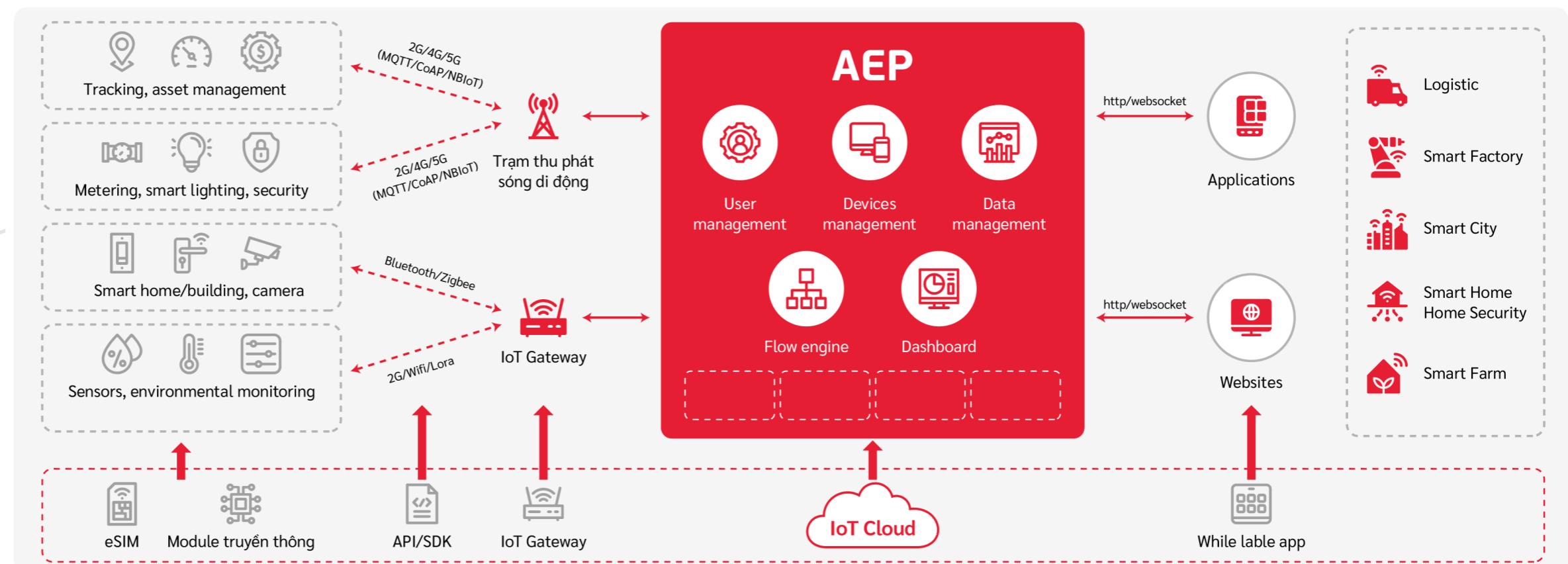
## AEP

The Innoway AEP platform was created with the purpose of reducing costs and optimizing the time to market for end-to-end IoT solutions. It consists of four main layers: Device layer, Connectivity layer, Back-end layer, and Application layer. AEP is designed with a broad expansion direction, allowing developers to easily use it for solution

development. It offers toolsets that support operational activities and enable seamless integration of devices from various manufacturers.

### KEY FEATURE

- User management
- Device management
- Data management
- Flow engine
- Dashboard





## OUR SOLUTIONS

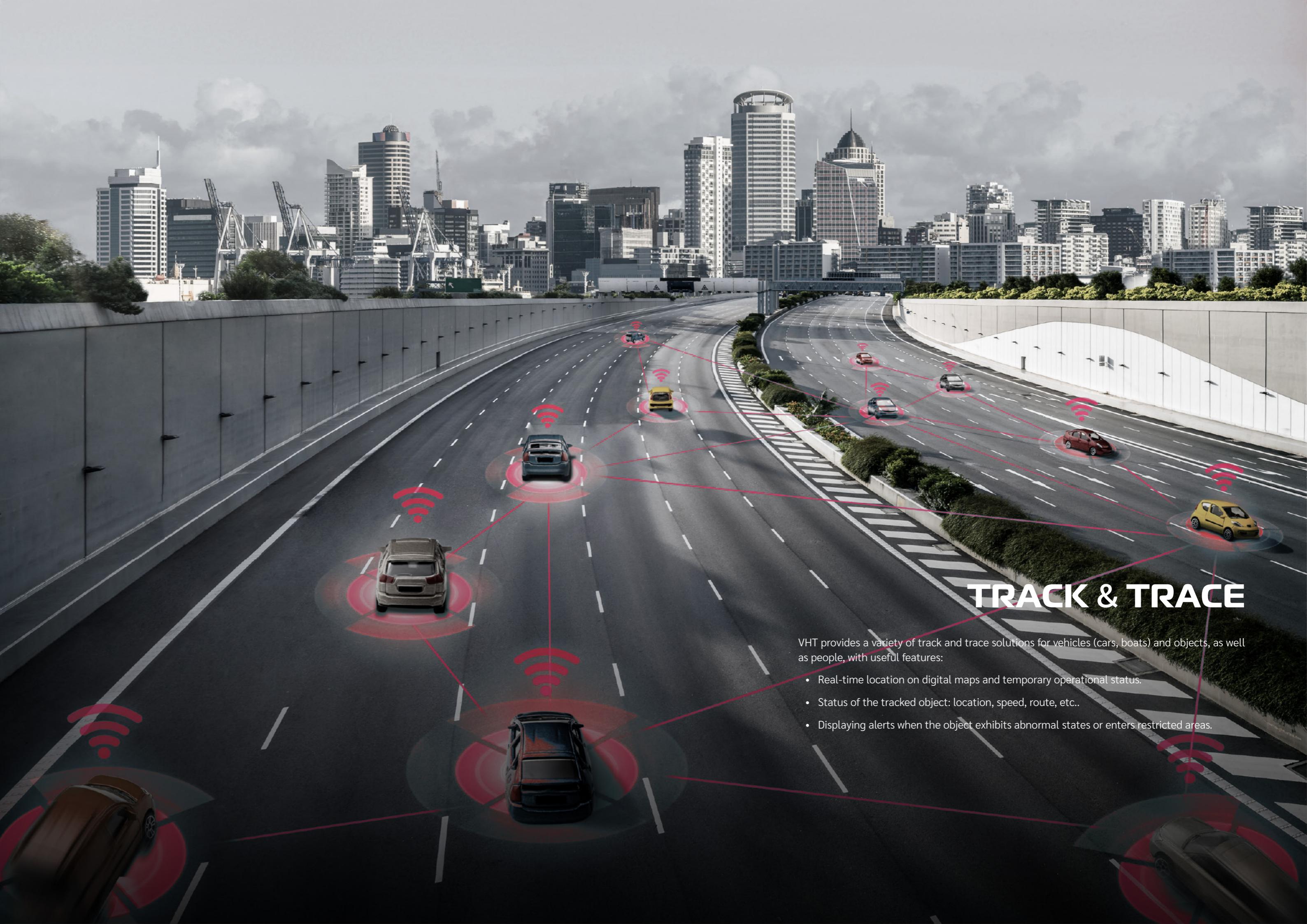
Track and trace

Smart home

Smart farm

Environmental monitoring

Smart metering



## TRACK & TRACE

VHT provides a variety of track and trace solutions for vehicles (cars, boats) and objects, as well as people, with useful features:

- Real-time location on digital maps and temporary operational status.
- Status of the tracked object: location, speed, route, etc..
- Displaying alerts when the object exhibits abnormal states or enters restricted areas.

## TRANSPORTATION VEHICLES MANAGEMENT AND MONITORING SYSTEM

### V-TRACKING

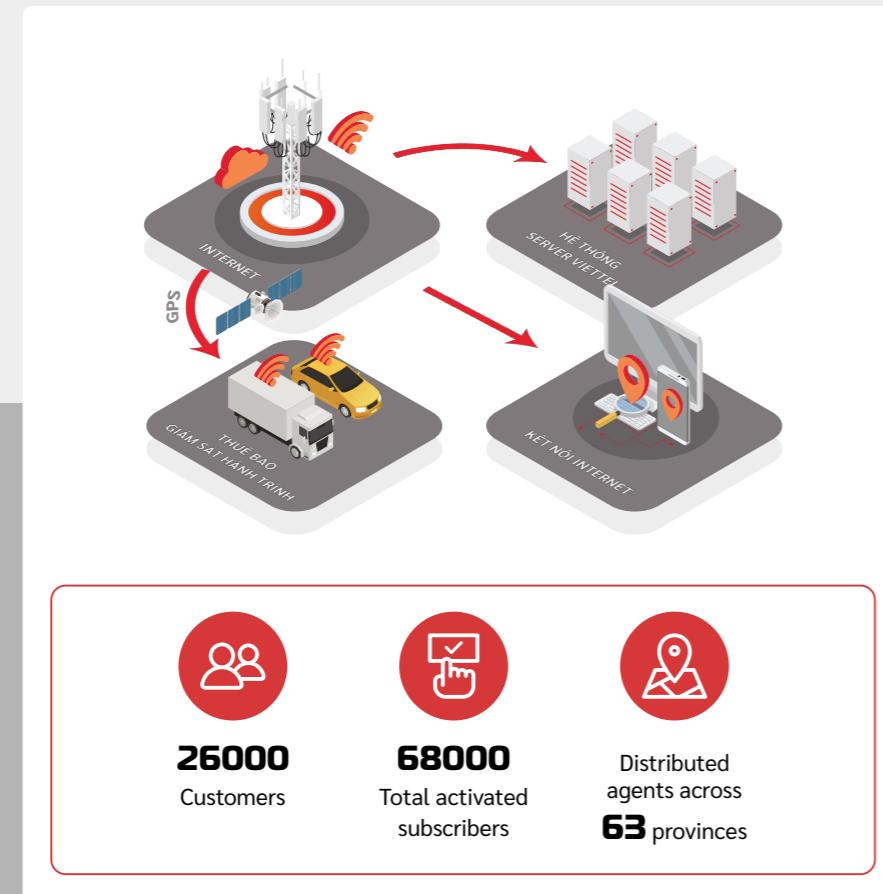
Just access the system from internet-connected devices to monitor the routes and manage your vehicles.

- The reporting system on the server is accurate and complete, following the QCVN/2014-BGTVT standard.
- The devices are compliant with the latest regulations of the Ministry of Transport.

#### KEY FEATURE

- Location tracking
- Real-time video surveillance
- Reviewing travel history
- Instant alerts
- Diverse reporting

- Being customizable according to each individual customer's needs.
- Competitive pricing packages are available.



## MARITIME VESSEL MANAGEMENT AND MONITORING SYSTEM

### S-TRACKING

- Information security: All transmitted and received packets are encrypted with AES128 to ensure national information security.
- Diverse power supply: Solar energy, backup battery (operates independently for up to 30 days), ship's onboard battery.
- Information storage, optimized design: Stores the entire journey for a minimum of 1 year. Compact, easy to install, retrieve. Resistant to impact, durable in harsh marine environments, IP67 standard.

#### KEY FEATURE

- Automatic transmission of ship information to the shore (coordinates, status, alerts), with configurable transmission frequency based on usage needs.
- Emergency alerts: Crossing borders, SOS, storm warnings, signaled through lights and speakers, sending messages to management agencies and relatives onshore.
- Global coverage: Iridium satellite technology combined with GSM/GPRS mobile network.
- Two-way messaging: Communication between the ship and management agencies/family members onshore.

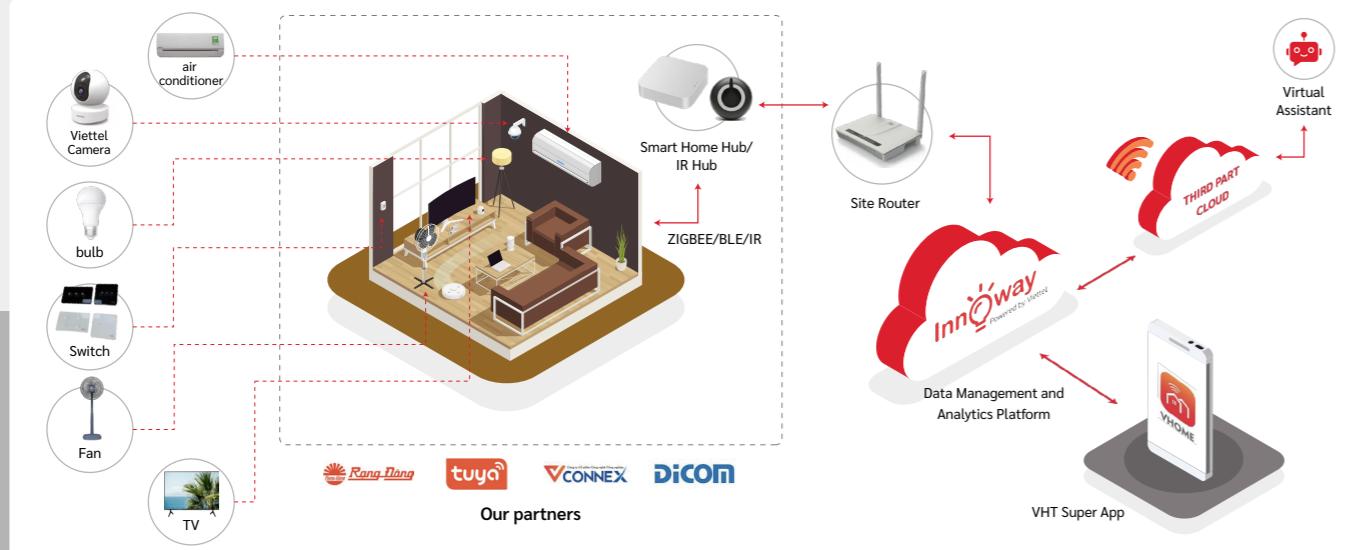


## SMART HOME

The all-in-one smart home solution enables operation, adjustment, and monitoring of household objects and devices from anywhere - from door locks, lights, air purifiers to even window curtains.

### KEY FEATURE

- Remote control of smart devices through a mobile application.
- Setting up smart contexts to automate the home.
- Giving voice commands to devices through a smart speaker.
- Integrating a device ecosystem from various developers.
- Viewing cameras, accessing camera history, and two-way communication.

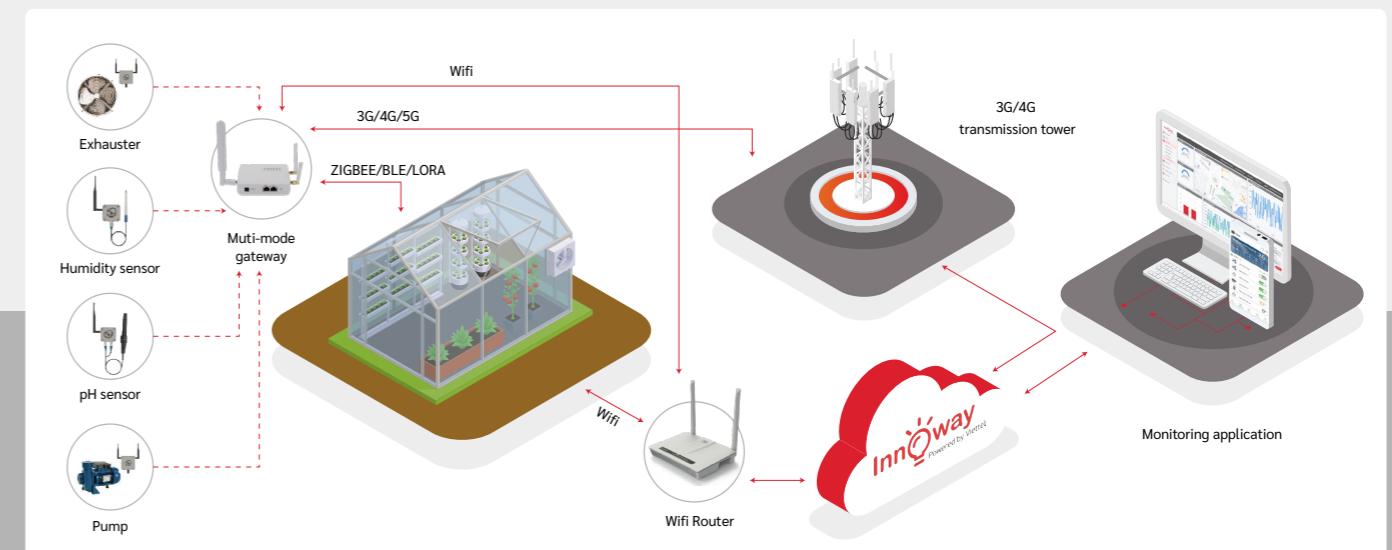


## SMART FARM

The all-in-one smart home solution enables operation, adjustment, and monitoring of household objects and devices from anywhere - from door locks, lights, air purifiers to even window curtains.

### KEY FEATURE

- Remote control of smart devices through a mobile application.
- Setting up smart contexts to automate the home.
- Giving voice commands to devices through a smart speaker.
- Integrating a device ecosystem from various developers.
- Viewing cameras, accessing camera history, and two-way communication.



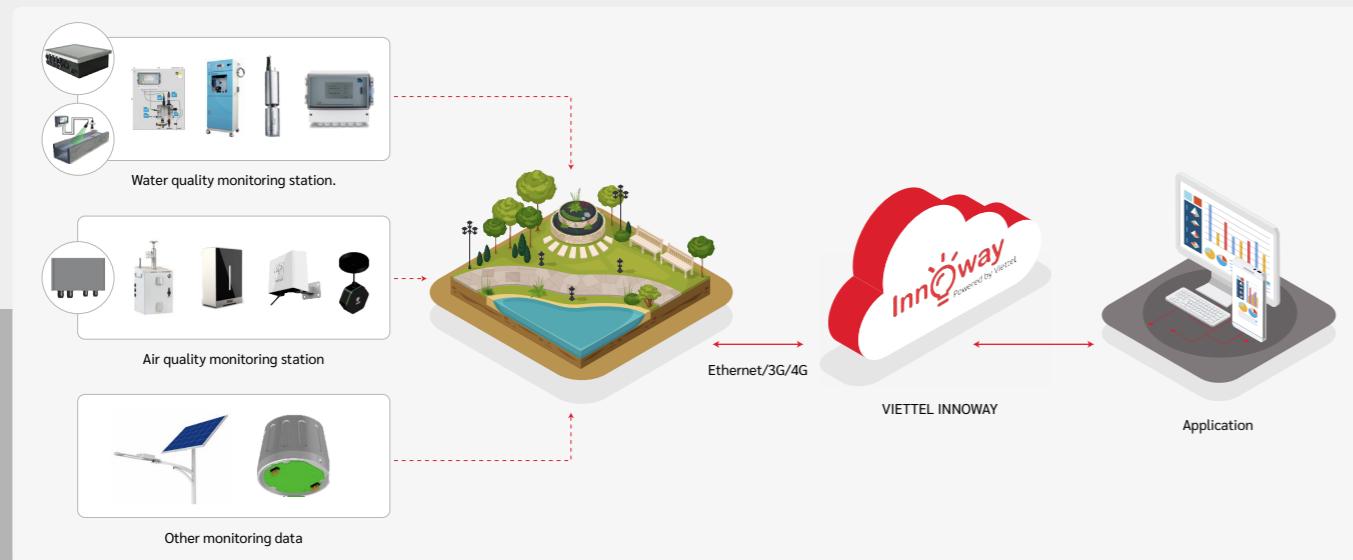
## ENVIRONMENTAL MONITORING

The applications of IoT in environmental monitoring are extensive - protecting the environment, monitoring harsh weather conditions, ensuring water safety, safeguarding endangered species, commercial

agriculture, and more. In these applications, sensors detect and measure various environmental changes.

### KEY FEATURE

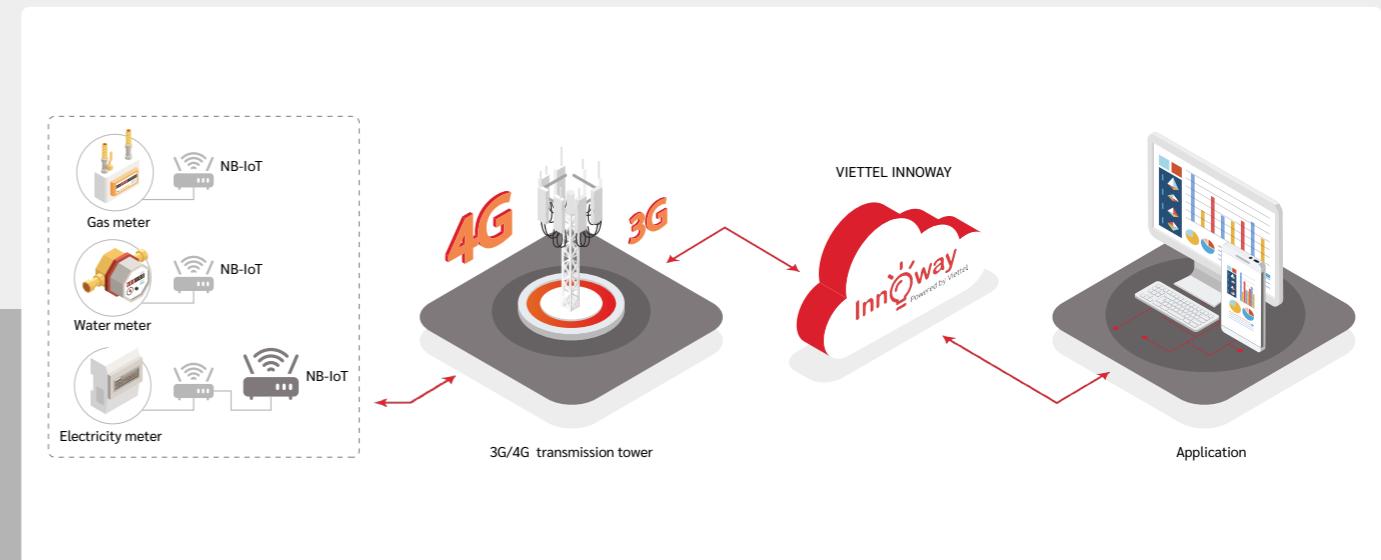
- Support for expanding to accommodate different types of devices.
- Support for expanding business functionalities through a web admin interface.
- Real-time monitoring and control of devices.
- Automatic scheduling and environmental condition-based control.
- Statistical analysis and alerts.



## SMART METERING

- Smart water meter: This is an energy-efficient device with a daily or hourly message sending cycle, allowing users to monitor water usage, receive alerts for abnormal fluctuations, magnetic issues, pipe bursts, water leaks, or water depletion. Additionally, property managers can remotely manage total water consumption and reset the meter without the need for regular monthly meter checks.

- Smart electricity meter: The system provides automatic and remote measurement of electricity usage, connection and disconnection of services, fraud detection, outage identification, and isolation, as well as voltage monitoring.



## VHT-BLE-ZIGBEE-GW

### KEY FEATURE

- Support for multiple protocols such as BLE 5.0, Zigbee 3.0, and compatibility with most smart home devices from Rạng Đông, Tuya, Điện Quang, etc.
- Remote control, contextual control, and automatic control of devices via the VTHome app.
- Stable connectivity for up to 128 smart home devices.
- Security features.



## SALINITY MEASURING DEVICE

### KEY FEATURE

- A salt measuring device, accurate and stable, continuously measures changes in water level, water temperature, and salinity. Technical specifications:
- Temperature: range from 0-70°C, accuracy of 0.1°C
  - Electrical conductivity: measuring range of 0100,000µS/cm, accuracy of ±0.5%
  - Depth: measuring range of 021/70/210m, accuracy of ±0.05%FS.



## VTAG - PERSONAL TRACKING DEVICE

### KEY FEATURE

- Manage multiple tracking targets.
- Real-time positioning.
- View movement history (within 6 months).
- Dangerous situation alerts and notifications when leaving safe zones.
- Dust and water resistance according to IP65 standard.
- High security features.
- Equipped with an accelerometer sensor (journey/movement alert).



## AIR QUALITY MEASURING DEVICE

### KEY FEATURE

- A multi-parameter air quality monitoring device: Temperature, Humidity, Fine Particulate Matter PM2.5, Coarse Particulate Matter PM10, SO2, CO, NO2, O3, UV, noise level.
- Real-time monitoring of air quality data and meteorological indicators, used in various environments such as industrial areas, construction sites, etc.



## PH / TEMPERATURE MEASURING DEVICE

### KEY FEATURE

- Temperature: range from 0-70°C, accuracy of 0.1°C.
- Electrical conductivity: measuring range of 0100,000 µS/cm, accuracy of ±0.5%.
- Depth: measuring range of 021/70/210m, accuracy of ±0.05%FS.



## TEMPERATURE AND SOIL MOISTURE MEASURING DEVICE

### KEY FEATURE

- Temperature and soil moisture measuring device, along with relevant parameters, applied in agriculture, aquaculture, and livestock sectors.
- Continuous data collection, analysis, and alert system.



## WATER QUALITY MONITORING DEVICE

### KEY FEATURE

- Measured indices: pH, Temperature, TSS (Total Suspended Solids), DO (Dissolved Oxygen), EC (Electrical Conductivity), COD (Chemical Oxygen Demand), Salinity, Level.
- Analytical indices: NH4 (Ammonia), Heavy Metals, etc.



## DEVELOPMENT KIT



Smart home dev kit



Track and trace dev kit



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