

# FSgateway Hybrid Cloud



- By synchronizing the cloud with the field FSGateway Provides flexibility, scalability, and cost efficiency

Fieldsolution EMS Cloud

| # No. | Customer name   | Person in Charge | E-mail          | Telephone        | Project number  | Equipment       | Installation date | Country | Province | Location | Power | Alarm |
|-------|-----------------|------------------|-----------------|------------------|-----------------|-----------------|-------------------|---------|----------|----------|-------|-------|
| 1     | Smart plant EMS | Admin            | admin@gmail.com | +82-10-5163-5138 | Smart plant EMS | Smart plant EMS | 2019-02-24        | Korea   | Korea    | Korea    |       |       |

Hybrid cloud



FSgateway

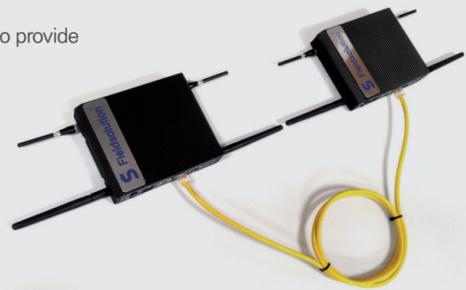
Fieldsolution EMS local

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|-------|-----------------|------------------|-----------------|------------|----------------|--------------|-------------------|---------|----------|----------|-------|-------|
| 1     | Smart plant EMS | Admin            | admin@gmail.com | 0105163138 | EMS-001        | gls-unit-001 | 2019-02-21        | Korea   | Korea    | Korea    |       |       |

# FSgateway Redundancy



- Redundant FSGateways are installed at critical process points to provide greater reliability



## Proposal

- Small and medium-sized potable water and sewage treatment facility – Monitoring/Recycling
- Small and medium-sized smart factory
- Power plant
- Logistics automation
- Agricultural water management



## Patents

- Abnormality check system of equipment and facilities
- Civil complaint possibility prediction system
- Abnormality monitoring system for water treatment equipment
- Speed Controlling and time-series data collection system for a vehicle which is movable along a predefined path
- Communication apparatus equipped with analysis program for time series data and communication method

## Copyright

- FSEMS (Energy Monitoring System)



Industrial IoT specialist

# Fieldsolution

Mobile +82-10-5163-5138

E-mail kdc@fieldsol.com

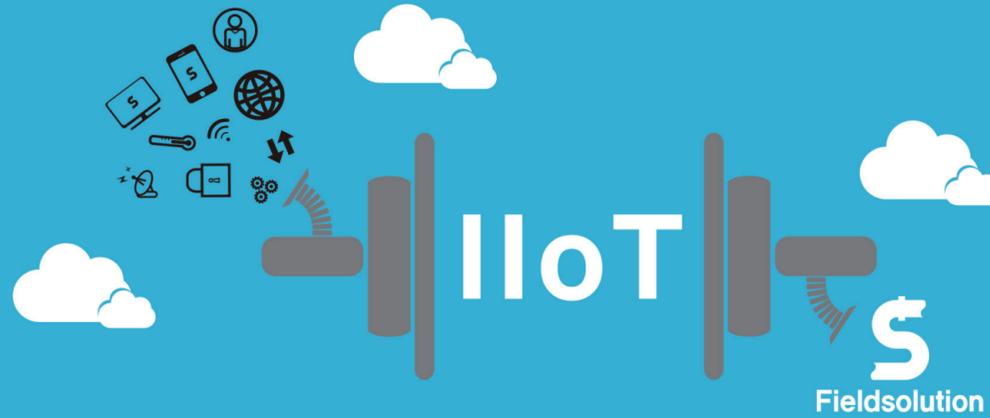
Web www.fieldsol.com

Tel +82-31-893-5139

FAX +82-31-624-5138

Head office 125, Yuseong-daero 1689beon-gil, Yuseong-gu, Daejeon, Republic of Korea, Zip 34045

R&D center 289-20 Pangyo-ro, Start-up Campus 3dong no.402, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea, Zip 13488



www.fieldsol.com

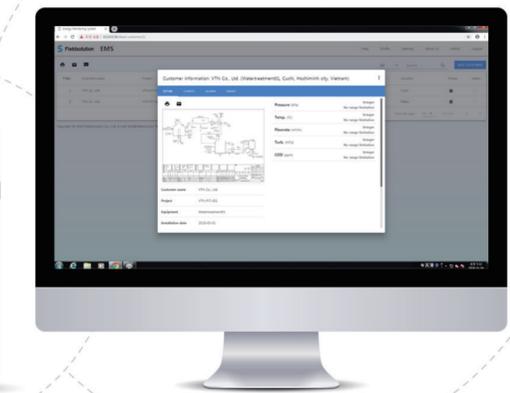
Industrial IoT Specialist

# Fieldsolution

Smart Energy, Environment & Logistics



FSGateway



FSEMS (Fieldsolution Energy Management System)



# FSgateway



## Collect, analyze, and transfer data

### Purpose |

- Data generated from industrial equipment and sensors are collected in real time.
- Processed and analyzed with a numerical analysis engine and sent to the user without additional server.

### Characteristics |

- “Node + Gateway + Server + Cloud” was simplified to “Node + FSgateway” rather than complex hardware configurations going through several stages. We reduced the initial investment by 30% and increase ease of technology adoption.
- Communicate with the user either by wire or wirelessly from long distances or obstacles, and can transmit processed and analyzed data
- Consists of heat-resistant hardware and optimized programming considering the features that are operated 365 days.



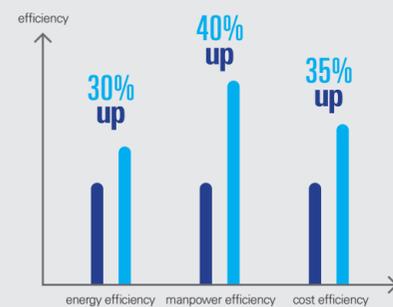
## SAVE

Using Fieldsolution’s FSgateway solution, we have simplified four steps of “Node + Gateway + Server + Cloud” to two steps.

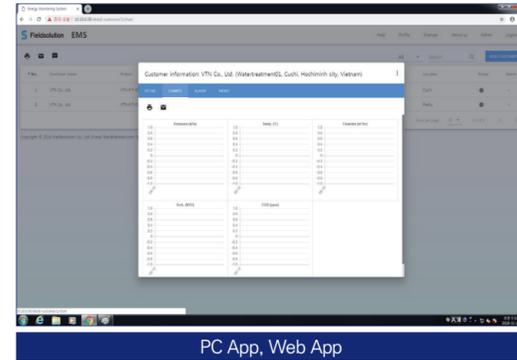
You can improve your plant’s energy efficiency by 30%, manpower efficiency by 40% and cost efficiency by 35%.\*

And you can experience advanced plant technology.

\*Simulation result of Fieldsolution



# FSEMS (Fieldsolution Energy Management System)



PC App, Web App



Mobile App

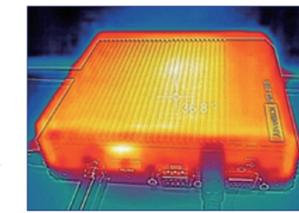
- Analyze problems from collected data and provide dashboards in PC and mobile form, allowing users to intuitively understand the situation.
- Trend analysis and prediction of specific events are one step ahead in preventing incidents.
- Connect to IoT technology with existing IT solutions such as ERP, CRM, and SCM to reduce maintenance and management costs.

# FSgateway

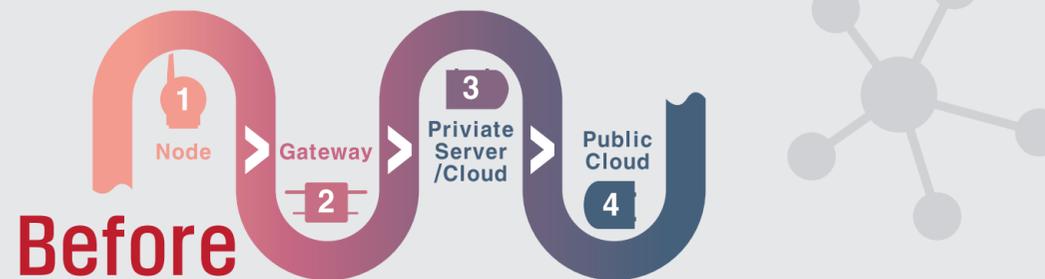


## Main specifications

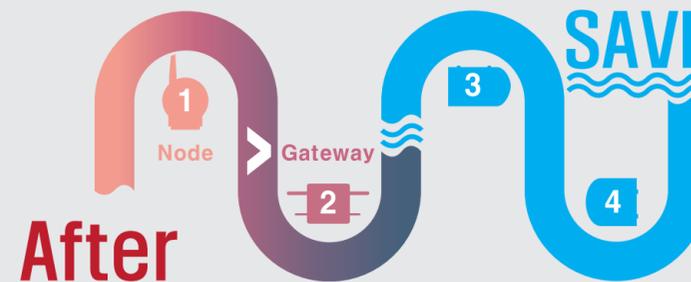
|                      |  |
|----------------------|--|
| Dimensions           | 138.5(W)×35.98(H)×116.4(D) mm                    |
| Operating emperature | -20 ~ 60 °C                                      |
| Power Requirement    | DC 12V   |
| Power Consumption    | 12V 0.49A (Max 0.88A)                            |
| OS                   | Embedded OS                                      |
| Optional modules     | WIFI module, ZigBee module, GPU accelerator etc. |
| I/O Interface        | RS-232, RS-485, USB3.0, USB2.0                   |



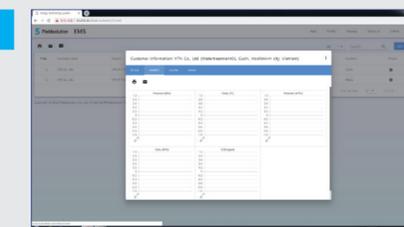
- Programming considering cooling (CPU, memory optimization) to ensure reliability under conditions such as heat and high temperature.



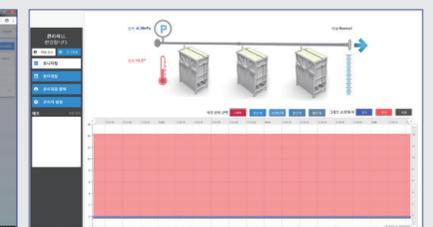
Fieldsolution’s FSgateway can process and analyze the industrial data without additional server!



## Application Case



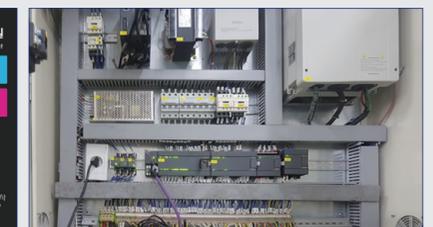
Water treatment facility : Real-time status monitoring and prediction using FSEMS software



Small and medium-sized sewage treatment facility : Monitoring/Reuse



Smart toilet at airports, subway, and highway rest areas : Cloud-based monitoring



Smart factory : Monitoring & control