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MADE IN
GERMANY

The future of irrigation

irrigation.cloud

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Irrigation CLOUD®

Experience the difference!

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It‘s getting hot!

In recent years, there have been increasing periods of prolonged drought. While we in Central Europe still handle the precious resource of water somewhat carelessly, it is becoming increasingly important to use the limited resources wisely and sparingly.

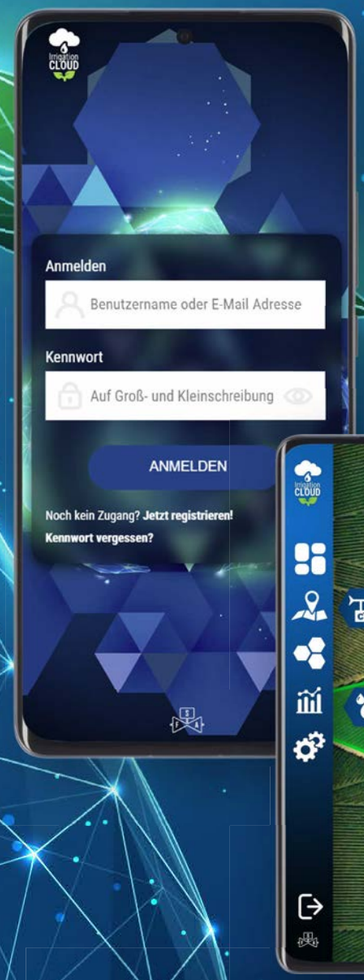
Irrigation CLOUD®

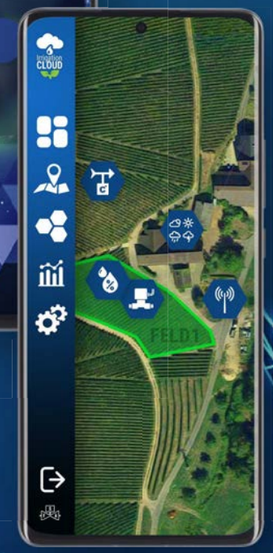
MADE IN GERMANY

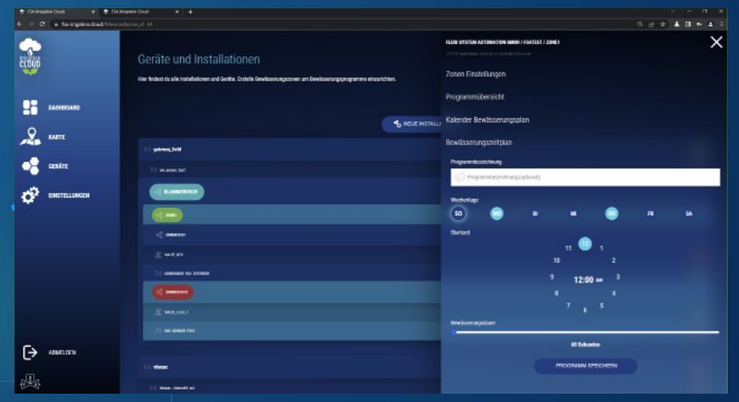
Our solution

- **Save 70-90% water**
- **Battery-powered valves & sensors**
  AUTOMATED IRRIGATION WITHOUT ELECTRICITY!
- **Plug & Play - Easy, intuitive, app-based setup**
- **Industrial IoT cloud**
  ROBUST, REDUNDANT, SECURE, AND ACCESSIBLE FROM ANYWHERE, AT ANY TIME

irrigation.cloud
Full control anytime and anywhere







Intelligent zone programming

- Manual activation (depending on hardware)
- Programmable weekly timer
- Programming specific times including calendar interface
- Intelligent programming with „If-Then“ logic
  For example: „If no rain with a probability > 30% and soil moisture < 20% is expected in the next 24 hours, then irrigate the next morning starting at 4:00 AM for 30 minutes.“

Save 70-90% water through smart irrigation!

Flexible user management with different user groups and permissions

All valves, sensors, and external information in one central system

Integration of weather app and climate data

Open API for integrating external sources such as personal weather stations

Operation via browser, tablet, and smartphone

Analysis of water consumption, including comparisons (weekly, monthly, yearly)

Overview of all zones and schedules, including potential overlaps.

Flexible assignment of valves and sensors to irrigation zones

Individual notifications via email, WhatsApp, SMS, or phone call

Product portfolio

ESPNow

NB-IoT

LoRa™

NB-IoT

WiFi

WiFi BLE

	FSA Irrigation Cloud ESPNow	FSA Irrigation Cloud nbIoT	FSA Irrigation Cloud LoRa	FSA Irrigation Cloud VBox	FSA VBox WiFi	FSA Tap timer
Basic structure	Gateway, repeater, actuators, and sensors	nbIoT, Actuators and sensors	LoRa, Gateway, public/private LoRaWAN	Valve box with Controller, nbIoT	Valve box with Controller	Bluetooth, WIFI optional
Range	120 - 150 m	Network coverage	1 - 5 km	Network coverage	20 - 50 m	20 - 50 m
Gateway required	Yes	No	Yes	No	No	Yes
Repeater possible	Yes	No	No	No	Yes	No
Mobile network required	Yes	Yes	Yes	Yes	No	No
Line of sight	No	No	Yes	No	No	No
Highlight	Excellent coverage through a proprietary network	Quick and easy installation and setup	Requires line of sight to the central radio tower	Fast and easy installation and setup, underground installation	Compatible with Amazon Alexa, Google Home, IFTTT, and many other smart home systems	Compatible with Amazon Alexa, Google Home, IFTTT, and many other smart home systems
Ideally suited for	Small to medium-sized areas with a high density of actuators	Large areas with a low density of actuators	flat surfaces, long distance	Large areas with a low density of actuators	Small areas, home & garden	Small areas, home & garden
Valves/Sensors	Many options	Few options	Relatively many options	Up to 8 classic valves per box	Up to 8 classic valves per box	None
Examples of applications	Viticulture, fruit and vegetable cultivation, recreational land	Municipalities, agriculture	Agriculture, golf courses, municipal areas, hotels	Municipalities, businesses, landscaping and gardening, tennis courts, golf courses	Home & garden, clubs, businesses, hotels	Home & garden, clubs

ESPNow

	FSA Irrigation Cloud ESPNow
Basic structure	Gateway, Repeater, Actuators and sensors
Range	120 - 150 m
Gateway required	Yes
Repeater possible	Yes
Mobile network required	Yes
Line of sight	No
Special feature	excellent coverage through a proprietary network
Ideally suited for	small to medium areas, high actuator density
Valves/Sensors	many options
Examples of applications	Viticulture, fruit and vegetable growing, Recreational land

Battery-powered valves and sensors
No need for wires or power supply
7-15 years of battery life without replacement!

Irrigation Cloud ESPNow
Motorized ball valve

- Sizes from ½“ to 2“, brass and stainless steel
- 2-way and 3-way options
- IP67 - permanently waterproof and UV-resistant
- Battery-operated: 7-15 years without replacement
- On-site setup via app
- Mapping to zone in irrigation.cloud
- Install - Register - Done!

Irrigation Cloud ESPNow
Sensor module

- Universal sensor: digital, analog, and RS485
- IP 67, waterproof and UV-resistant
- Includes soil moisture sensor with 2 m cable
- Battery-operated: 7-15 years without replacement
- On-site setup via app
- Mapping to zone in irrigation.cloud
- Install - Register - Done!

Irrigation Cloud ESPNow
Sensors

- Connection to sensor module
- Flow meter
- 7in1 sensor: NPK, EC, pH, moisture, temperature
- Ability to integrate additional sensors

Irrigation Cloud ESPNow
Gateway

- Communicates with irrigation.cloud
- Includes solar panel and 10Ah battery (optional without solar panel with power supply)
- Includes SIM card (GSM, 3G, 4G)
- Automatic connection at power on
- Available with redundancy and as a repeater

nbIoT

	FSA Irrigation Cloud nbIoT
Basic structure	nbIoT, actuators and Sensors
Range	Network coverage
Gateway required	No
Repeater possible	No
Mobile network required	Yes
Line of sight	No
Special feature	Quick and easy installation and setup
Ideal for	Large areas with a low density of actuators
Valves/Sensors	Few options
Examples of applications	Municipalities, agriculture

Battery-operated valves and sensors
No need for wires or power supply
7-15 years of battery life without replacement!

All the advantages of Irrigation Cloud ESPNow - just without a gateway!

Each ball valve and sensor module already has the SIM card integrated. The valves and sensors can be easily installed and registered with the irrigation.cloud app. No cables, no power, no gateway required! Perfect for large areas. nb-IoT already has for example already 99.9% coverage in Germany and is available in most locations!

Irrigation Cloud nbIoT
Motorized ball valve

- Sizes from ½“ to 2“, brass and stainless steel
- 2-way and 3-way options
- IP 67 - permanently waterproof and UV-resistant
- Battery-operated: 7-15 years without replacement
- On-site setup via app
- Mapping to zone in irrigation.cloud
- Install - Register - Done!

Irrigation Cloud nbIoT
Sensor module

- Universal sensor: digital, analog, and RS485
- IP 67, waterproof and UV-resistant
- Includes soil moisture sensor with 2m cable
- Battery-operated: 7-15 years without replacement
- On-site setup via app
- Mapping to zone in irrigation.cloud
- Install - Register - Done!

Irrigation Cloud nbIoT
Sensors

- Connection to sensor module
- Flow meter
- 7in1 sensor: NPK, EC, pH, moisture, temperature
- Ability to integrate additional sensors

LoRa

	FSA Irrigation Cloud LoRa
Basic structure	LoRa, Gateway, public/ private LoRaWAN
Range	1 - 5 km
Gateway required	Yes
Repeater possible	No
Mobile network required	Yes
Line of sight	Yes
Special feature	Requires line of sight to the central radio tower
Ideal for	flat surfaces, long distance
Valves/Sensors	Relatively many options
Examples of applications	Agriculture, golf courses, municipal areas, hotels

Battery-operated valves and sensors
No need for wires or power supply
7-15 years of battery life without replacement!

All the advantages of Irrigation Cloud ESPNow - but up to 15km!

Instead of using ESPNow, the valves and sensors communicate via LoRa. The advantage is a range of up to 15km, covering a large area with a single gateway - perfect for large spaces. The disadvantage compared to ESPNow is the lack of mesh function for repeaters, making it challenging for complex topologies without line of sight.

Irrigation Cloud LoRa
Motorized ball valve

- Sizes from ½“ to 2“, brass and stainless steel
- 2-way and 3-way variants
- IP 67 - permanently waterproof and UV-resistant
- Battery-operated: 7-15 years without replacement
- On-site setup via app
- Mapping to zone in irrigation.cloud
- Install - Register - Done!

Irrigation Cloud LoRa
Sensor module

- Universal sensor: digital, analog, and RS485
- IP 67, waterproof and UV-resistant
- Includes soil moisture sensor with 2m cable
- Battery-operated: 7-15 years without replacement
- On-site setup via app
- Mapping to zone in irrigation.cloud
- Install - Register - Done!

Irrigation Cloud LoRa
Sensors

- Connection to sensor module
- Flow meter
- 7in1 sensor: NPK, EC, pH, moisture, temperature
- Ability to integrate additional sensors

Irrigation Cloud LoRa
Gateway

- Communicates with irrigation.cloud
- Includes solar panel and 10Ah battery (optional without solar panel with power supply)
- Includes SIM card (GSM, 3G, 4G)
- Automatic connection at power on

VBox nbIoT

	FSA Irrigation Cloud VBox
Basic structure	Valve box with Controller, nbIoT
Range	Network coverage
Gateway required	No
Repeater possible	No
Mobile network required	Yes
Line of sight	No
Special feature	Quick and easy installation and setup, suitable for underground installation
Ideal for	Large areas with a low density of actuators
Valves/Sensors	Up to 8 traditional valves per box
Examples of applications	Municipalities, businesses, landscaping and gardening, tennis courts, golf courses.

Classic valve box with integrated controller
All controllers conveniently managed in Irrigation.Cloud
Powered by electricity or alternatively via solar panel

The controller is located inside the valve box!
The VBox nbIoT controller is installed directly in the lid and supplied with wired power or by solar panel incl. 10Ah battery. The nbIoT SIM card is already integrated, so that the box only needs to be registered in the irrigation.cloud via app. nbIoT already has 99.9% area coverage for example in Germany and is available almost everywhere!

Irrigation Cloud nbIoT
VBox Controller

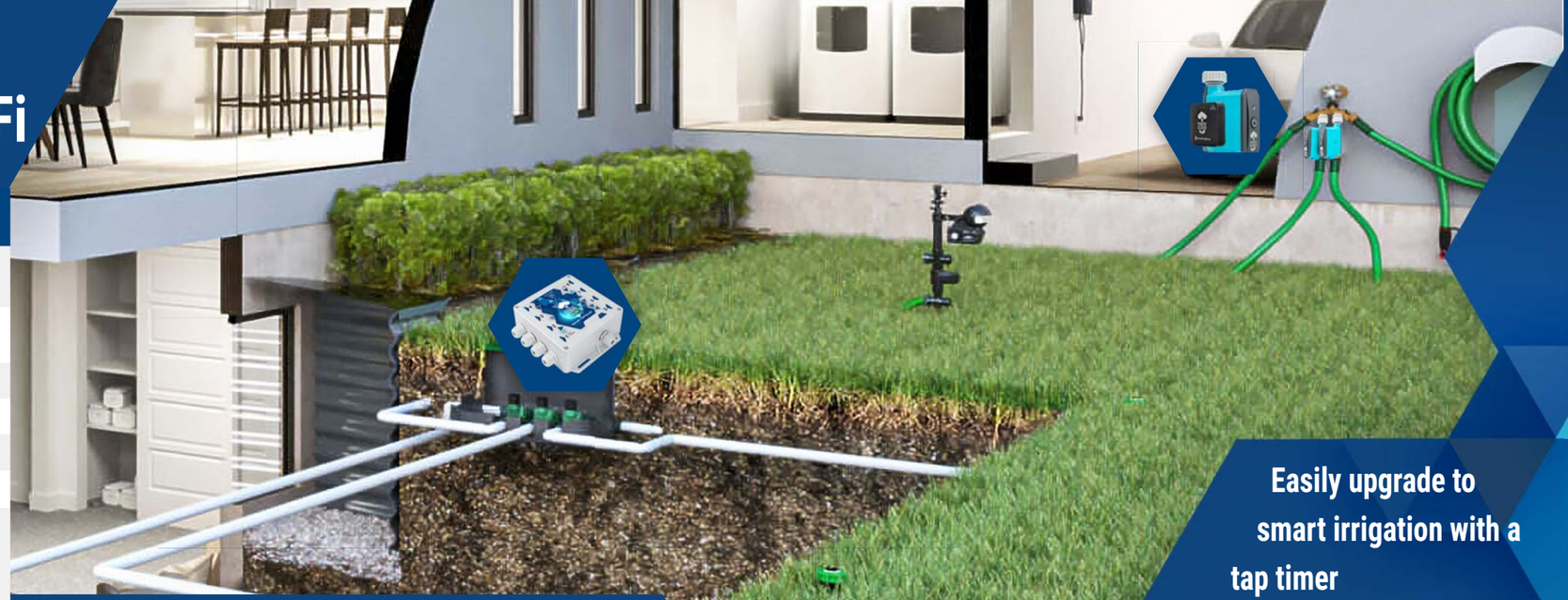
- 8 outputs for up to 8 valves
- Compatible with classical solenoid valves
- 8 inputs for flow meters
- External voltage options: 24V AC, 24V DC, or 230V AC
- Individual programming of each valve as a zone
- Includes nbIoT SIM card

Irrigation Cloud nbIoT
Solar panel with a 10Ah battery included

- No power supply required thanks to the solar panel
- Option available in 9-28V DC
- Requires specific solenoid valves (latching)
- Available in sizes from ½“ to 4“
- Alternatively with motorized ball valve

VBox WiFi

	FSA Irrigation Cloud VBox WiFi
Basic structure	Valve box with Controller
Range	20-50m
Gateway required	No
Repeater possible	Yes
Mobile network required	No
Line of sight	No
Highlight	Compatible with Amazon Alexa, Google Home, IFTTT, and many other smart home systems
Ideally suited for	Small areas, home & garden
Valves/Sensors	Up to 8 classic valves per box
Examples of applications	Home & garden, clubs, businesses, hotels



The Wi-Fi controller is located inside the valve box!

The VBox WiFi controller is installed directly in the lid and supplied with power. This means that no controller needs to be attached to any wall, according to our motto

»Invisible technology - visible success!«

Irrigation Cloud WiFi
VBox Controller

- 8 outputs for up to 8 valves
- Compatible with classical solenoid valves
- 8 inputs for flow meters
- External voltage options: 24V AC, 24V DC, or 230V AC
- Individual programming of each valve as a zone
- WiFi connectivity
- Even in case of internet outage, the controller will continue to operate based on the programmed intervals

Tap timer

	FSA Tap timer
Basic structure	Bluetooth, WIFI optional
Range	20 - 50 m
Gateway required	Yes
Repeater possible	No
Mobile network required	No
Line of sight	No
Special feature	Compatible with Amazon Alexa, Google Home, IFTTT, and many other smart home systems
Ideal for	Small areas, home & garden
Valves/Sensors	None
Examples of applications	Home & garden, clubs

Easily upgrade to smart irrigation with a tap timer

The tap timer is simply connected to an outdoor water faucet and connected to a sprinkler or oscillating sprinkler with a tap. Programmable locally via Bluetooth and can also be used as a valve in irrigation.cloud with a Wi-Fi hub!

Simplified view for private customers

Remote control capability for landscapers
Accessible via smartphone or through the cloud
Integration with Alexa, Google Home,
Apple Home, IFTTT, Smart Life

amazon alexa

IFTTT

Irrigation Cloud
Tap timer

- Locally programmable via Bluetooth
- Integrate with irrigation.cloud using a Wi-Fi hub
- Smart irrigation directly at the faucet
- Operates with 4x AA batteries
- Manual control via button
- Up to 128 hose timers possible per hub

System Comparison

ESPNow

PROS Complex topologies thanks to repeaters, Inexpensive, Own network

CONS Repeater required every 150m - 200m

IDEAL Many valves & sensors on a manageable area, Difficult topology (hills/mountains), No existing infrastructure

E.g. Viticulture, Fruit and Vegetable Growing, Leisure, Vertical Green

nbIoT

PROS No gateway, no repeaters necessary, extremely simple and fast commissioning

CONS Network coverage must be available, costs per valve/ sensor higher

IDEAL Large areas with few valves and sensors per hectare, installations with few valves and sensors overall.

E.g. Cities and municipalities, agricultural

LoRa

PROS Very high range in empty field, no repeaters necessary, connection to existing LoRaWAN network possible

CONS Dead RF-spots only possible with additional gateway, usually „line of sight“ required, more expensive than ESPNow

IDEAL Relatively many valves and sensors at long distances, Flat land with „line of sight“ from central RF transmitter, ideally existing LoRaWAN.

E.g. Agricultural, municipal area, golf courses, hotels, theme parks, ...

Vbox WiFi

PROS No routers or gateways needed, low price per valve, SmartHome

CONS Power connection required, central multiple distribution, WiFi range must be sufficient for intelligent control

E.g. Home & garden, clubs (tennis, soccer, ...), busines facilities, hotels, Municipalities with existing WiFi coverage and power connection

Hose timer

PROS No power supply needed, simple connection to the outside faucet

CONS Bluetooth by default, requires a WiFi hub to be controlled remotely via WiFi

E.g. Home & Garden, Clubs

Vbox nbIoT

PROS Only one nbIoT module per up to 8 valves, connection for sensor technology integrated, very inexpensive per valve/sensor, valves installed protected in valve boxes, no additional gateway

CONS Only useful if central distribution possible, nbIoT network coverage necessary

IDEAL Underground installation preferred, central distribution possible, several valves/sensors in a confined space

E.g. Cities and towns, businesses, landscaping, tennis courts, golf courses and other recreational facilities