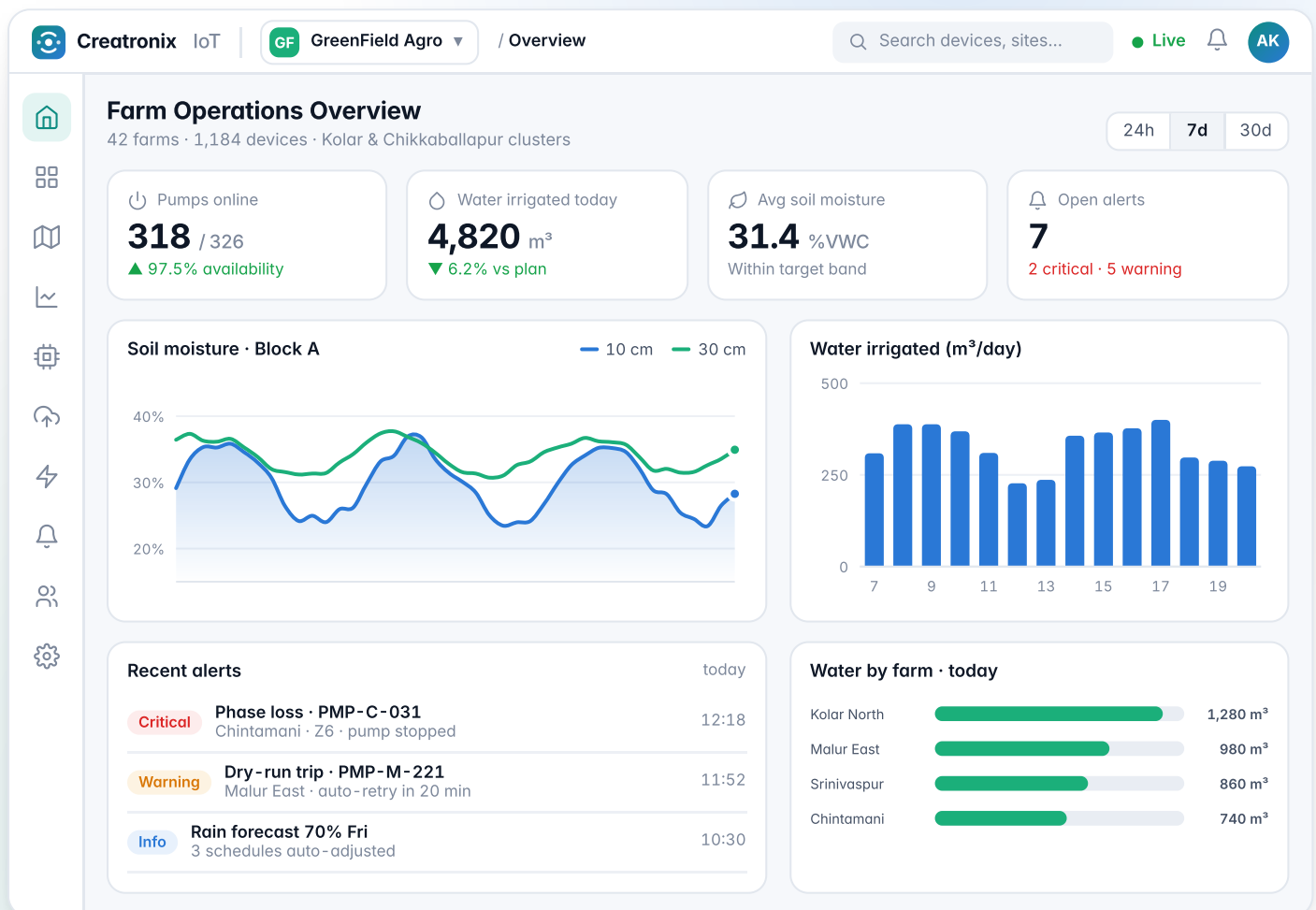


LARGE-SCALE IOT PLATFORM

Connect, monitor and control every device in the field.

A multi-tenant IoT cloud engineered for fleets of **200,000+ devices** — giving every B2B client its own portal for dashboards, users, rules, remote configuration and over-the-air firmware upgrades.

- Agriculture
- Industrial IoT
- Utilities & Communities
- RF Network Operators


200k+

devices per deployment, scale-out by design

Multi-tenant

isolated B2B portals with white-label

Fleet OTA

staged firmware campaigns & rollback

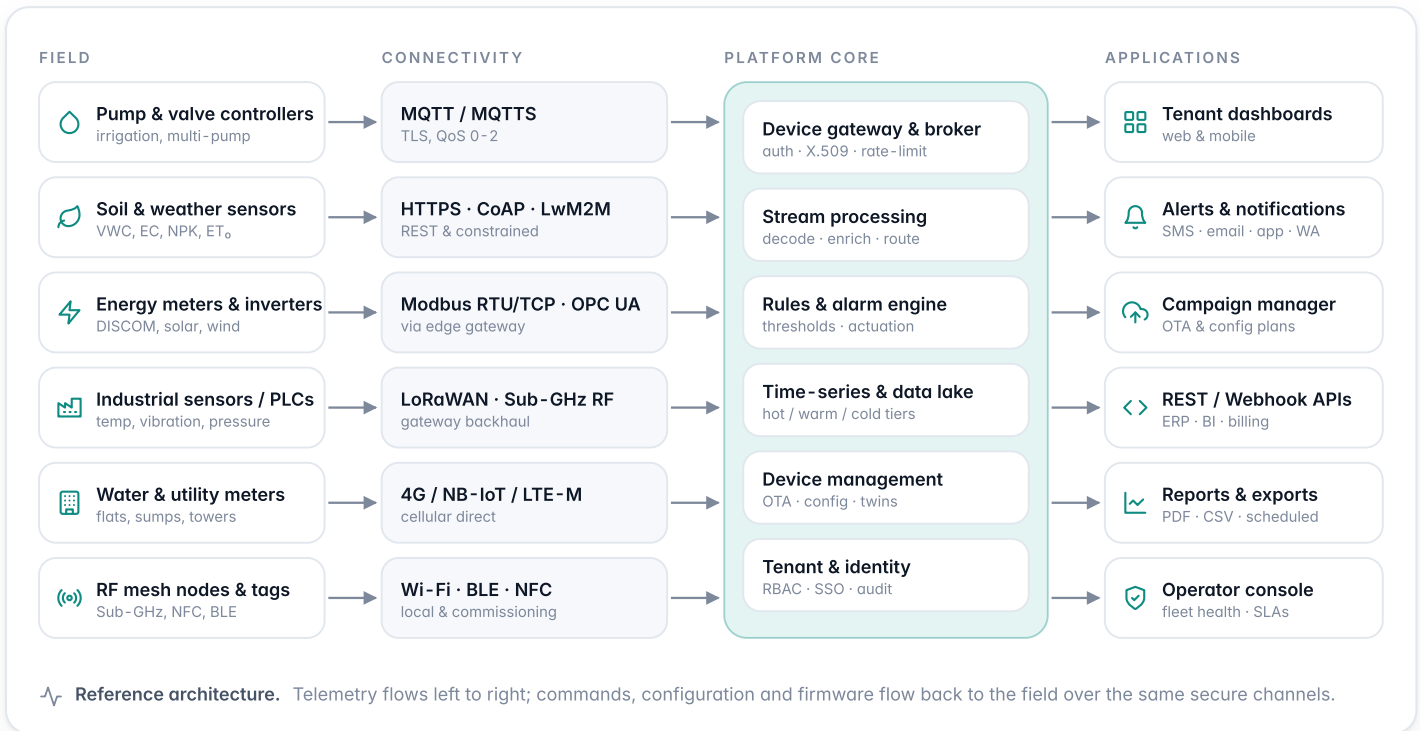
15+

field & integration protocols

01 PLATFORM OVERVIEW

One platform. Every field device. Every client.

The Creatronix Large-Scale IoT Platform ingests, stores and acts on telemetry from very large, geographically distributed fleets. It is protocol-agnostic at the edge, multi-tenant at the core, and domain-aware at the application layer — so an agriculture company, a factory, a utility service provider and an RF network operator can each run their business from the same platform without ever seeing one another.



Built for scale

Stateless ingestion and partitioned streams scale out horizontally — add capacity as the fleet grows from thousands to hundreds of thousands of devices.



True multi-tenancy

Each B2B client gets an isolated workspace: its own sites, devices, users, branding, dashboards and data.



Fleet OTA & config

Push firmware and configuration profiles to one device, a filtered group or the full fleet, in staged waves.



Rules & actuation

Define thresholds and logic visually; trigger alerts and actuate pumps, valves, relays and fans automatically.



Domain dashboards

Ready templates for irrigation, energy, factory, utility and RF network views — fully customisable per tenant.



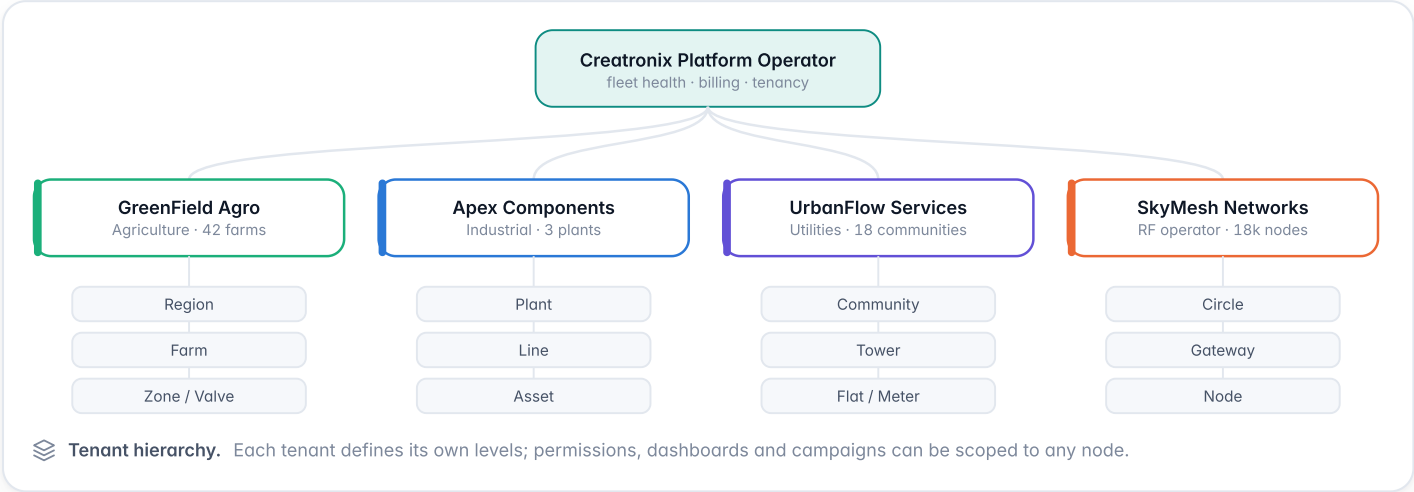
Open integration

REST APIs, webhooks and MQTT bridging connect the platform to ERP, billing, BI and third-party systems.

02 MULTI-TENANCY

A dedicated portal for every B2B client

Every client is a tenant with hard data isolation. Inside its workspace a tenant models its own hierarchy — farms and zones, plants and assets, towers and flats, or gateways and nodes — and manages its own users, roles, dashboards, rules and device campaigns.



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IoT

CX

Platform Operator

Tenants

Search devices, sites...

Live

AK

Tenants

4 active tenants · 31,710 devices · 2 regions

+ New tenant

GF

GreenField Agro

Agriculture

Devices1,184

Online98.6%

Alerts7

AC

Apex Components

Industrial IoT

Devices2,416

Online99.4%

Alerts3

UF

UrbanFlow Services

Utilities

Devices9,870

Online97.9%

Alerts12

SM

SkyMesh Networks

RF network

Devices18,240

Online99.2%

Alerts21

Fleet growth by tenant (devices)

SkyMesh

UrbanFlow

Apex

GreenField

Usage · last 30 days

Tenant	Messages/day	Storage	Users
SkyMesh	26.3 M	412 GB	61
UrbanFlow	9.5 M	138 GB	214
Apex	14.1 M	296 GB	88
GreenField	2.2 M	41 GB	57

Role-based access control

Default roles — every permission can be tailored per tenant.

	View	Control	Rules	OTA	Config	Users
Platform admin	Full	Full	Full	Full	Full	Full
Tenant admin	Full	Full	Full	Full	Full	Full
Operations manager	Full	Full	Full	Scoped	Full	None
Field technician	Full	Scoped	None	None	Full	None
Analyst / viewer	Full	None	None	None	None	None
End customer (resident / farmer)	Scoped	None	None	None	None	None

Full

Scoped

None

What each tenant controls

White-label — logo, colours, domain, email sender

Users & SSO — invite, roles, groups, SAML/OIDC

Dashboards — drag-and-drop widgets per role

Rules & alerts — own thresholds and escalation

Devices — provision, tag, group, decommission

Data — retention, exports, API keys

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03

03 AGRICULTURE

Irrigation, soil and weather — on one screen

Farm owners and agronomy teams see every farm, pump, valve and soil probe live. Water delivered is tracked against plan, soil moisture is mapped by zone, and local weather feeds directly into scheduling.

Creatronix IoT

GF GreenField Agro

/ Farms / Irrigation

Search devices, sites...

Live

AK

Irrigation Overview

Kolar Farm Cluster · 8 farms · 64 pumps · 412 valves · 236 soil probes

Water irrigated today

4,820 m³

▼ 6.2% vs plan · rain-adjusted

Pumps online

62 / 64

2 need attention

Avg soil moisture (30 cm)

31.4 %VWC

▲ 1.8 pts vs yesterday

Energy per m³

0.19 kWh

▼ 4% this week

Live soil moisture · Kolar North

Z1

34% VWC

Z2

28% VWC

Z3

22% VWC

Z4

31% VWC

Z5

38% VWC

Z6

17% VWC

Z7

29% VWC

Z8

33% VWC

● Pump

◆ Valve

— Mainline

Weather · Kolar station

updated 4 min ago

29.4°C

Partly sunny · feels 31°

Humidity

58 %

Wind

11 km/h NE

ET_o today

5.1 mm

Rain (24h)

0.0 mm

Solar rad.

742 W/m²

Leaf wetness

Dry

Wed

31° 20°

5%

Thu

29° 20°

20%

Fri

26° 19°

70%

Sat

25° 19°

60%

Sun

28° 19°

15%

Rain forecast Fri — schedules auto-adjusted

Water irrigated, all farms (m³/day)

Actual

Plan

7

8

9

10

11

12

13

14

15

16

17

18

19

20

0

2,000

4,000

6,000

Water by farm · today

m³

Kolar North

1,280 m³

Malur East

980 m³

Srinivaspur

860 m³

Chintamani

740 m³

Bangarpet

560 m³

Mulbagal

400 m³

Pump status

showing 5 of 64

Pump	Location	State	Power	Flow
PMP-K-014	Kolar North · Z5	Running	7.4 kW	38.2 m³/h
PMP-K-009	Kolar North · Z2	Running	5.6 kW	29.0 m³/h
PMP-M-221	Malur East · Z3	Dry-run trip	0.0 kW	—
PMP-S-107	Srinivaspur · Z1	Scheduled 18:00	—	—
PMP-C-031	Chintamani · Z6	Phase loss	0.0 kW	—

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GreenField Agro

/ Farms / Kolar North / Schedules

Search devices, sites...

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Irrigation Schedules · Kolar North

Today, 20 Oct · 8 zones · 14 programs · auto-adjust on

TimelineCalendarPrograms

+ New program

Today's valve timeline

CompletedRunningPlannedSkipped

Z1 · Ragi

Z2 · Tomato

Z3 · Banana

Z4 · Grapes

Z5 · Mango

Z6 · Chilli

Z7 · Beans

Z8 · Capsicum

00:0002:0004:0006:0008:0010:0012:0014:0016:0018:0020:0022:0024:00

Grid peak (18–22)

running · 68%

skipped – rain

12:24

Soil moisture profile · Z3 probe SP-311 (7 days)

10 cm30 cm60 cm

45%35%25%15%

Field capacity 38%

Refill point 18%

WedThuFriSatSunMonTue

Shaded band = target root-zone moisture. Each saw-tooth rise is an irrigation event recorded by the valve controller.

Soil temp

26.8 °C

Optimal

pH

6.6

Neutral

Phosphorus

34 kg/ha

Medium

EC

1.42 dS/m

Normal

Nitrogen

182 kg/ha

Low

Potassium

246 kg/ha

Medium

Programs

Time, volume, sensor and ET_o-driven

Program	Zone	Trigger	Rule	Volume	Status
Morning – Banana	Z3	Daily 07:00	Soil < 28% @30cm	42 m³	Completed
Mango fertigation	Z5	Mon/Thu 11:00	Volume 60 m³ + NPK	60 m³	Running
Chilli evening	Z6	Daily 20:00	ET _o -based (85%)	18 m³	Skipped – rain
Tomato drip pulse	Z2	4× daily	15 min pulses	24 m³	On track
Off-peak flush	All	Sun 02:00	Line flush 10 min	8 m³	Scheduled

Water balance · last 7 days (mm)

RainIrrigationET_o demand

1050

WedThuFriSatSunMonTue

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Valve health

412 valves

Responding

404

98.1%

Low battery

5

< 20%

Stuck / no flow

2

Check

Offline > 24 h

1

Visit

04 INDUSTRIAL IOT · ENERGY

Grid, solar and wind — one energy view

Energy meters on the DISCOM incomer, solar inverters and wind feeders report into one view. Plant teams see how every kW of load is being met, track Time-of-Day costs, watch maximum demand against the contract, and monitor power quality.



05 INDUSTRIAL IOT · SENSORS & CONTROL

From threshold to action — automatically

Temperature, vibration, pressure, humidity, flow and level sensors across the factory stream into live floor maps and asset views. Rules combine conditions, durations and boundaries, then actuate outputs and escalate alerts without waiting for a person.

Creatronix IoT

AC Apex Components

/ Plants / Hosur 2 / Monitoring

Search devices, sites...

Live

AK

Plant Monitoring · Hosur Plant 2

1,148 sensors · 86 controllable outputs · 42 active rules

Floor Assets Rules + New rule

Sensors online

1,141 / 1,148

99.4% availability

Active alarms

3

1 critical · 2 warning

Rules fired today

27

19 auto-actuations

Mean time to ack

2.6 min

38% vs last month

Live floor map

Normal Warning Critical

Press line

CNC bay

Compressor room

Paint shop

Assembly

Warehouse

CMP-02 · bearing temperature (12 h)

92.4 °C

Rule R-118 · Compressor overheat protection

Active

WHEN

Bearing temp on Compressor CMP-02 > 85 °C for 5 min

AND

Vibration RMS > 7.1 mm/s (ISO 10816 zone C)

THEN

Switch Cooling fan CF-02 → ON · open Bypass valve BV-07 40%

ALERT

Critical → Maintenance on-call (SMS, app) · escalate to plant head after 15 min

ELSE IF

> 75 °C → Warning · create work order in CMMS via webhook

Vibration RMS · CMP-02 (mm/s)

Remote control

2-step confirm

Cooling fan CF-02

Auto · by rule R-118

☒

Bypass valve BV-07

40% open

☒

Air compressor AC-1

Manual · locked out

☐

Exhaust EX-04

Schedule 08-20

☒

Alarm log

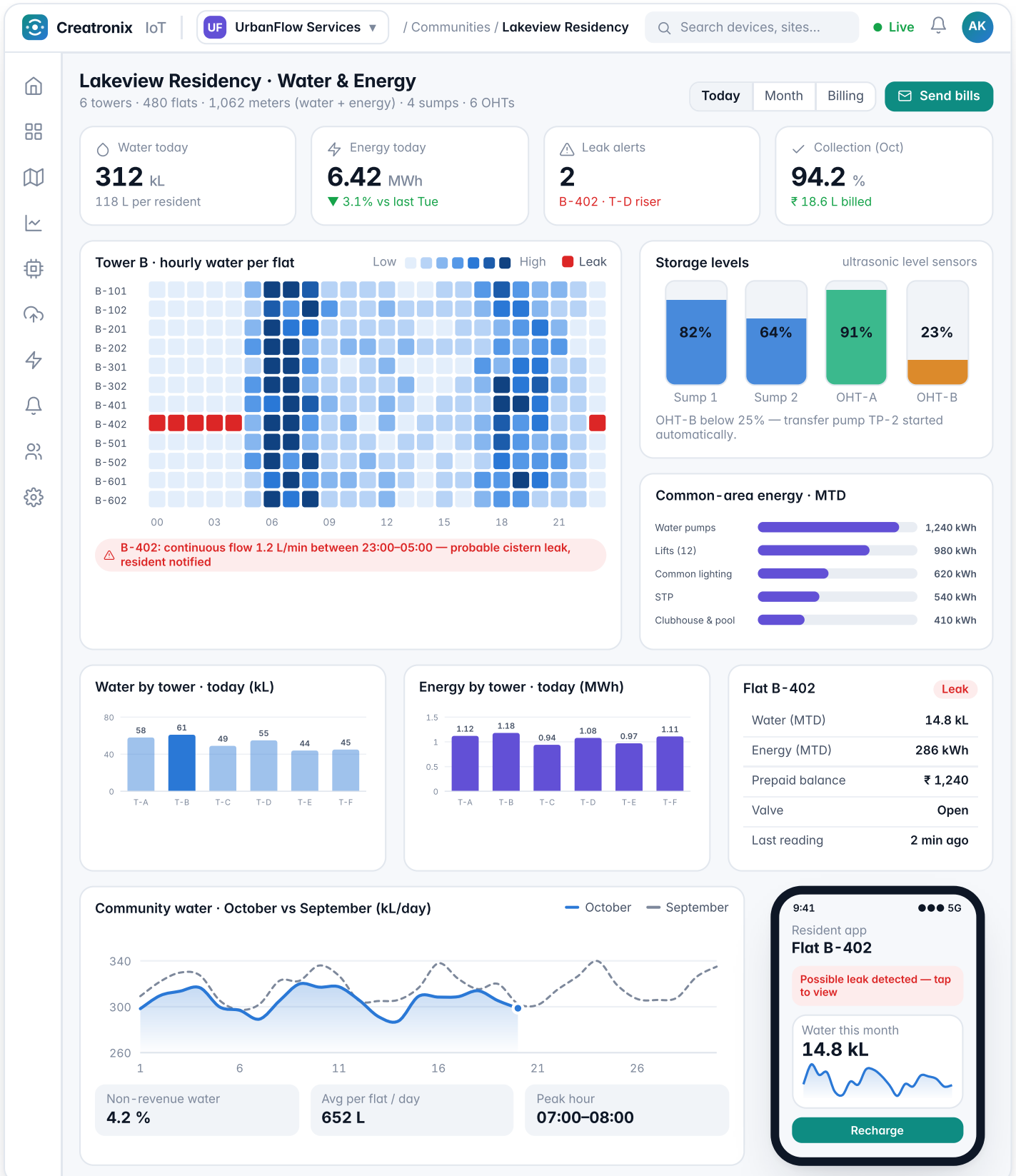
today

Severity	Event	Area	Time	Action
Critical	CMP-02 bearing temp 92.4 °C	Compressor room	12:21	Fan CF-02 ON · ack: R. Prasad
Warning	CNC-07 spindle vibration 6.8 mm/s	CNC bay	11:48	Work order #4471
Warning	Paint booth humidity 71 %RH	Paint shop	10:05	Dehumidifier auto-start
Cleared	Air line pressure 5.4 bar	Press line	09:32	Auto-cleared after 3 min

06 UTILITIES & GATED COMMUNITIES

Granular water and energy data — down to every flat

Service providers who meter apartment complexes and gated communities see consumption per tower, per flat and per hour, detect leaks from night-flow patterns, automate tank transfers and generate bills — while residents get their own mobile view.



CreatronixIoT

SMSkyMesh Networks

/ Networks / North Circle

Q Search devices, sites...

Live

AK

Home

Sidebar icons

RF Network · Bengaluru North Circle

Sub-GHz mesh (865–867 MHz) · 64 gateways · 18,240 nodes

Nodes online
18,032 / 18,240
98.9% reachable

Packet delivery
99.21 %
30-day avg · SLA 98.5%

Median RSSI
-98 dBm
SNR 6.4 dB

Gateways degraded
1 / 64
GW-05 on 4G fallback

MapGatewaysNodesNew campaign

Network topology

GatewayGood linkWeakLostBackhaul

GW-05 - Hebbal
backhaul 4G · RSSI ~97

Campaigns

FW 3.4.1 · Zone North
OTA · 6,120 nodes · wave 3 of 4
Reporting interval 15→10 min
Config · 2,400 meters · GW-01/02
Tariff table Q4

DoneQueued

RSSI distribution (dBm)

Packet delivery ratio · 30 days

Gateways

showing 4 of 64

ID	Site	Nodes	Uptime 30d	Backhaul	Status
GW-01	Yelahanka	3,214	99.98%	Fibre	Online
GW-02	Jakkur	2,980	99.95%	Fibre	Online
GW-05	Hebbal	3,402	98.71%	4G	Degraded
GW-11	Whitefield	2,766	99.99%	Fibre	Online

08

DEVICE LIFECYCLE

Firmware and configuration at fleet scale

Over-the-air upgrades run as staged campaigns with health gates, automatic pause and rollback. Configuration profiles are versioned and pushed to a single device, a tagged group or a whole tenant, and every device keeps a digital twin of desired versus reported state.

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CX

Platform Operator

/ Devices / Campaigns

Search devices, sites...

Live

AK

Home

Grid

Bookmarks

Line chart

Settings

Refresh

Lightning bolt

Bell

Users

Gears

OTA Campaign · FW 3.4.1 — Pump controllers

Target: tag = pump-controller AND fw < 3.4 · 18,240 devices · started 18 Oct 02:00

Auto-pause if failure > 2%

Pause

Canary

1% of fleet

182 / 182

Completed · 0 failed

Wave 1

10% of fleet

1,816 / 1,824

Completed · 8 failed

Wave 2

40% of fleet

4,980 / 7,296

In progress · 21 failed

Wave 3

100% of fleet

0 / 8,938

Waiting for gate · 0 failed

38% complete

Updated 6,978

In progress 2,316

Pending 8,938

Failed (auto-rollback) 29

Firmware versions in fleet

v3.4.1

6,978

v3.3.7

9,120

v3.2.0

1,840

v3.1.x

302

Devices updated · cumulative

pauses = health gates between waves

8,000

4,000

0

18 Oct

19 Oct

20 Oct

now

Recent failures

auto-rolled back

Device

Reason

PMP-M-221

Image CRC mismatch

PMP-S-088

Battery < 15% at reboot

PMP-K-301

Timeout · weak RSSI -118

PMP-C-112

Bootloader v1 unsupported

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IoT

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GreenField Agro

/ Devices / Profiles

Search devices, sites...

Live

AK

Home

Grid

Bookmarks

Line chart

Settings

Refresh

Lightning bolt

Configuration profile · "Kharif 2026 – Drip"

v7 → v8 · applies to 1,184 devices in GreenField Agro

Apply to group

Changes in v8

Parameter	v7	v8
report_interval_s	900	600
tx_power_dbm	14	17
dry_run_cutoff_a	1.2	0.9
rain_skip_mm	—	5
tariff_profile	TOD-2025	TOD-2026

// device twin · PMP-K-014

{
 "desired": { "fw": "3.4.1", "report_interval_s": 600,
 "mode": "auto", "dry_run_cutoff_a": 0.9 },
 "reported": { "fw": "3.4.1", "report_interval_s": 600,
 "mode": "auto", "rssi_dbm": -91, "uptime_h": 1782 },
 "in_sync": true, "last_seen": "2026-10-20T12:23:41+05:30"
}

Zero-touch provisioning

Bulk import by CSV or QR;
devices auto-claim into the right tenant.

Signed firmware

Images are signed and verified
on-device before install.

Bulk commands

Reboot, sync clock, re-read
meters on any filtered set.

Health scoring

Battery, RSSI, uptime and error
rates roll up to one score.

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09 PROTOCOLS, INTEGRATION & SECURITY

Speaks the language of every field device

Devices connect directly or through edge gateways. Payload decoders normalise every protocol into one data model, so dashboards, rules and APIs work the same regardless of how the data arrived.

Device messaging

MQTT 3.1.1 / 5
pub/sub, QoS 0-2

MQTTS
TLS 1.2 / 1.3

HTTP(S) / REST
JSON, batch upload

CoAP / DTLS
constrained devices

LwM2M
device management

WebSocket
live streams

Wireless & WAN

LoRaWAN
via network server

Sub-GHz RF mesh
865-867 MHz

NB-IoT / LTE-M
low-power cellular

4G LTE Cat-1 / 2G
cellular direct

Wi-Fi
2.4 GHz

BLE · NFC
local & commissioning

Industrial & metering

Modbus RTU
RS-485 via gateway

Modbus TCP
Ethernet

OPC UA
PLCs & SCADA

DLMS/COSEM
energy meters

M-Bus
water & heat meters

Zigbee
via gateway

Integration out

REST API
OpenAPI documented

Webhooks
event push, HMAC signed

MQTT bridge
to external brokers

Kafka / AMQP
stream export

SMS · Email · WhatsApp
notifications

CSV / Excel / PDF
scheduled reports

Security by design

Encrypted everywhere
TLS 1.2/1.3 in transit, AES-256 at rest.

Device identity
Per-device X.509 certificates or keys; instant revocation.

Tenant isolation
Logical isolation of data, keys and users per tenant.

Identity & SSO
RBAC, MFA, SAML 2.0 / OpenID Connect.

Full audit trail
Every command, config change and login is logged.

Data residency
Deploy in Indian cloud regions or on-premise.

Scale & performance

200,000+
devices per deployment

50k+
messages / second sustained*

< 2 s
rule-to-actuation latency*

5 yrs
configurable data retention

* Design targets; actual figures depend on deployment sizing.

One data model, whatever the protocol

Payload decoders run at ingestion. A Modbus register frame and an MQTT JSON message from different devices end up as the same normalised telemetry record.

① Raw · Modbus RTU via gateway

```
// slave 0x11, fn 0x03, 6 regs
11 03 0C 09 52 00 FA 03 CB
    00 01 0E 2C 00 00 7A 4F
```

② Decoder · device profile

```
voltage_v = r0 / 10
current_a = r1 / 10
pf        = r2 / 1000
pump_on   = r3 == 1
```

③ Normalised telemetry

```
{ "device": "PMP-K-014",
  "ts": "2026-10-20T12:24:05Z",
  "voltage_v": 238.6, "current_a": 25.0,
  "pf": 0.971, "pump_on": true }
```

10 GETTING STARTED

Deploy your way

The platform is offered as a managed service or installed in an environment you control. Every deployment includes the full feature set described in this document.



Managed cloud (SaaS)

Hosted and operated by Creatronix in Indian cloud regions. Fastest to start, pay as you grow.



Private cloud

Dedicated instance in your own cloud account, with your keys and network policies.



On-premise

Installed in your data centre for utilities and enterprises with strict data-sovereignty needs.

Engagement path

01

Discover

Map devices, protocols, sites and user roles.

02

Pilot

Connect a pilot fleet; configure tenant, dashboards and rules.

03

Scale

Roll out provisioning, campaigns and integrations fleet-wide.

04

Operate

Monitored SLAs, upgrades and support.

Works natively with Creatronix field devices

⌵ Irrigation Pump Controller

⌵ Irrigation Valve Controller

⌵ Wireless Multi Pump Controller

⌵ NFC Temperature Tag

⌵ Solar Fence IoT Monitoring

⌵ 3-Phase SMPS

Third-party devices connect through standard protocols and custom payload decoders.

Typical deployments at a glance

Client type	Typical fleet	Field connectivity	Key views
Agriculture enterprise	1k – 50k devices	4G, Sub-GHz RF, LoRaWAN	Irrigation, soil, weather, pumps
Industrial / manufacturing	500 – 20k points	Modbus, OPC UA, MQTT	Energy mix, assets, rules, alarms
Utility service provider	5k – 200k meters	RF mesh, NB-IoT, M-Bus	Per-flat use, leaks, tanks, billing
RF network operator	10k – 200k+ nodes	Sub-GHz mesh, LoRaWAN	Topology, SLAs, OTA & config campaigns

Ready to connect your fleet?

Talk to us about a pilot for your farms, plants, communities or RF network.

🌐 creatronix.in

📍 Bengaluru