

Innovations Never Stop

Wentzo Connect 2023

October 12, 2023 | Garderen • Netherlands

Huawei Network
2023.



1

How to Save Energy



There are 2 scenario's:

1. Save energy of the network itself
2. Use the network to save energy

1

How to Save Energy of The Network Itself



Traditional on/off schedules? Don't work!

SSID | Radio

Basic Settings Security Authentication

SSID name: SSID **Radio**

Time Rule

Basic Configuration

Country/Region: Netherlands

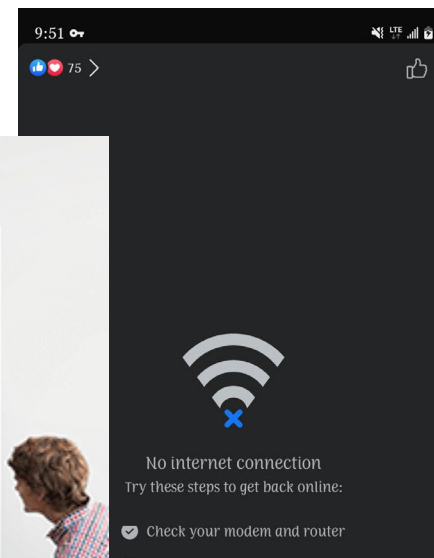
Scheduled switch-on:

Time Rule

Common template: 08:00 to 18:00 08:00 to 18:00 on weekdays 00:00-24:00 on weekdays All the time

*Template name:

Day	Start	End	Enable	0	2	4	6	8	10	12	14	16	18	20	22	24
Monday	08	18	Enable	0	2	4	6	8	10	12	14	16	18	20	22	24
Tuesday	08	18	Enable	0	2	4	6	8	10	12	14	16	18	20	22	24
Wednesday	08	18	Enable	0	2	4	6	8	10	12	14	16	18	20	22	24
Thursday	08	18	Enable	0	2	4	6	8	10	12	14	16	18	20	22	24
Friday	08	18	Enable	0	2	4	6	8	10	12	14	16	18	20	22	24
Saturday	08	18	Enable	0	2	4	6	8	10	12	14	16	18	20	22	24
Sunday	08	18	Enable	0	2	4	6	8	10	12	14	16	18	20	22	24



Deep sleep can work sometimes

- Many IoT devices use power savings techniques to connect once every x minutes.
- No SSID no connection and therefore no data.
- Zigbee, Bluetooth & Z-wave need a continuous available network.

And how about EEE(energy Efficient Ethernet)

- Even when the display goes off the phone uses power.
- And what is our solution today?

Time Rule ×

Common template: 08:00 to 18:00 08:00 to 18:00 on weekdays 00:00-24:00 on weekdays All the time Delete Template

*Template name: Save Template

Day	Start	End	Enable	0	2	4	6	8	10	12	14	16	18	20	22	24
Monday:	08	:00	-	18	:00	Enable										
Tuesday:	08	:00	-	18	:00	Enable										
Wednesday:	08	:00	-	18	:00	Enable										
Thursday:	08	:00	-	18	:00	Enable										
Friday:	08	:00	-	18	:00	Enable										
Saturday:	08	:00	-	18	:00	Enable										
Sunday:	08	:00	-	18	:00	Enable										



Approx 8w



Approx 11w

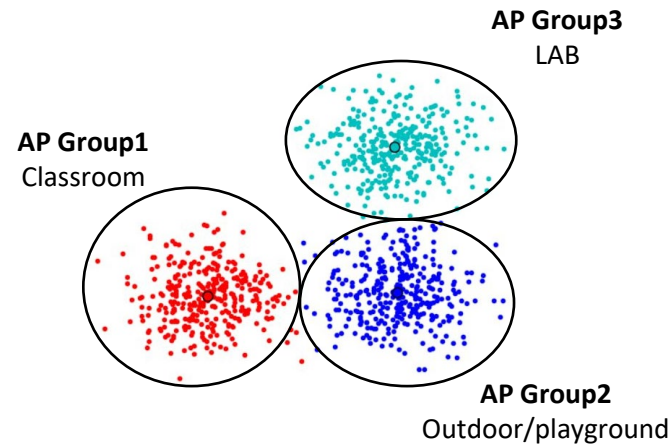
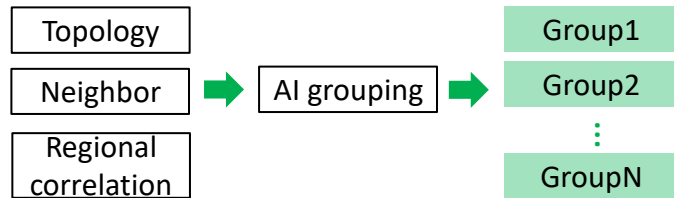
Create (meaning full) Insights

- Which kind devices do we have floating around?
- What devices are these (PC's, camera's, TV's, mobiles, etc.)
- Where are the devices in relation to the AP's (Floor plans)
- Where are the IoT devices?
- When are people in or not in the office?



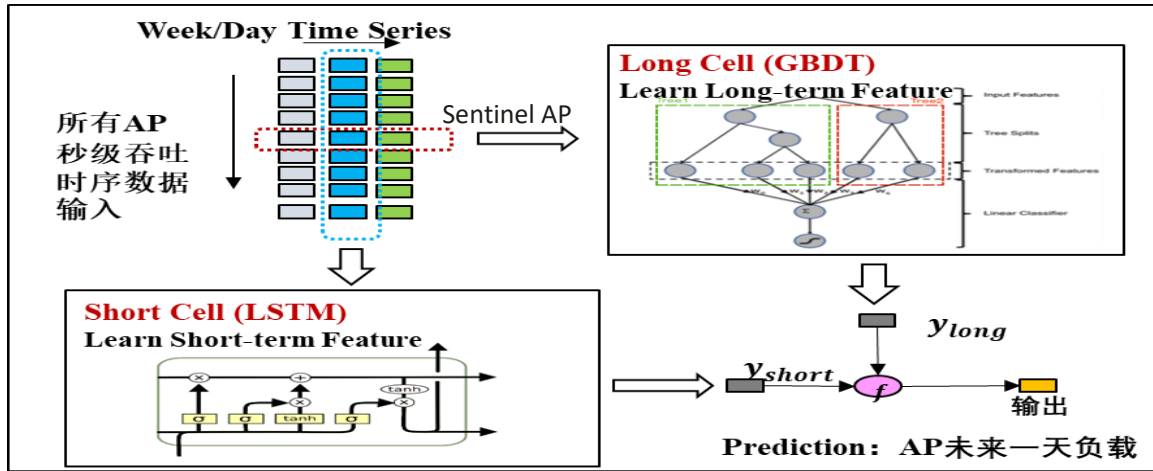
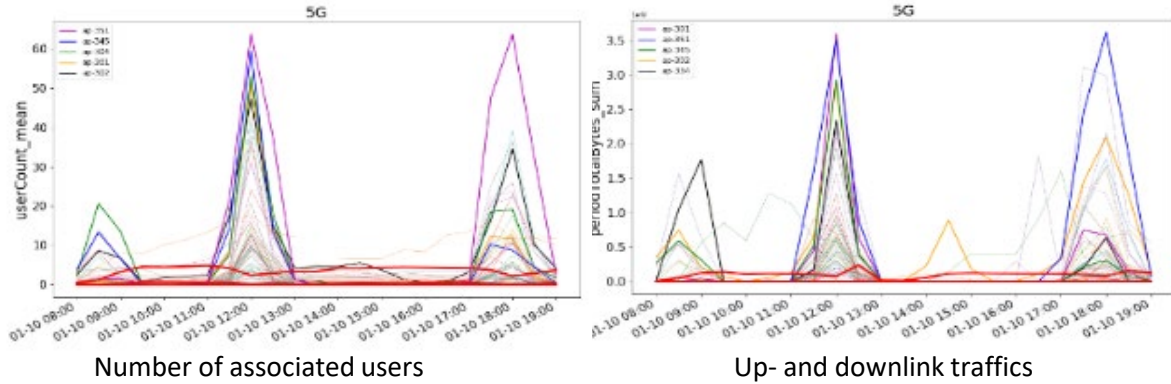
How does Campus Insights Create insight?

Grouping algorithm based on clustering

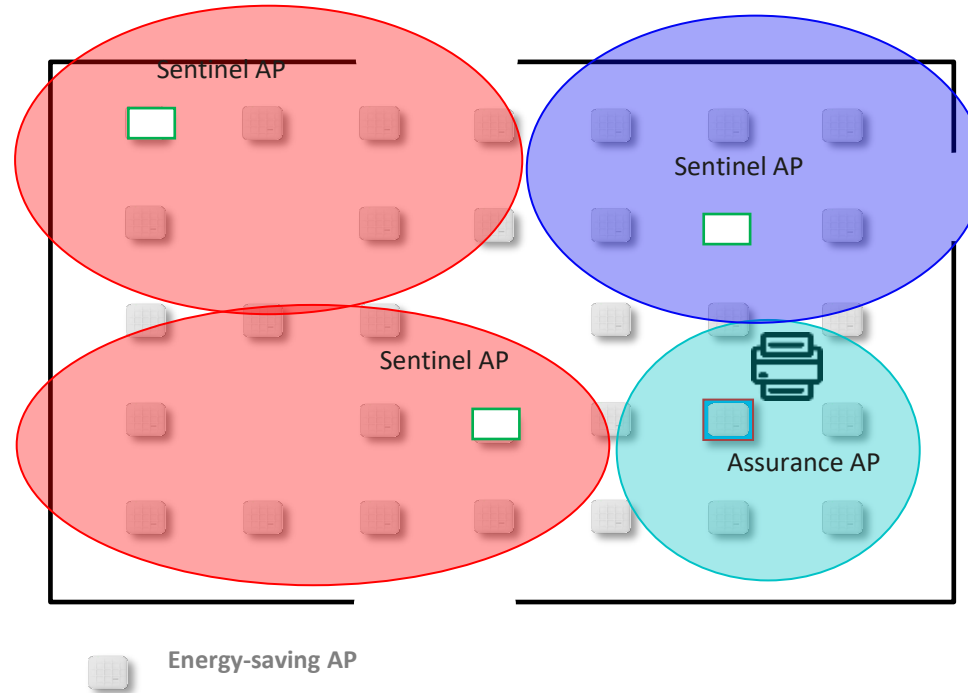


Translate your insights

Multi-model sequential prediction algorithm



Result



Energy-saving AP	Sentinel AP	Assurance AP
Change status during energy-saving window, it can be awaked up anytime	Be sensible about the network status (traffic/users), wake up energy-saving APs in time	Ensure the service of IoT devices/dumb terminals, the standby of sentinel APs
Status1: energy-saving (power-off/sleep) Status2: working	Always working	Always working

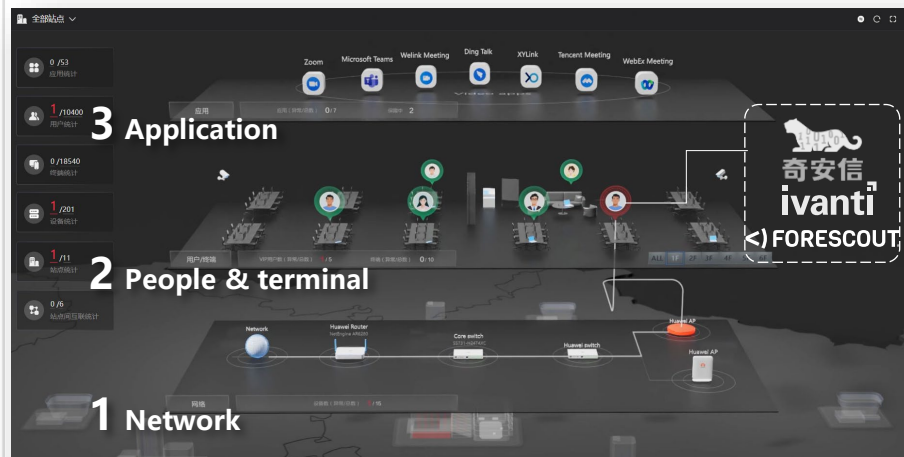
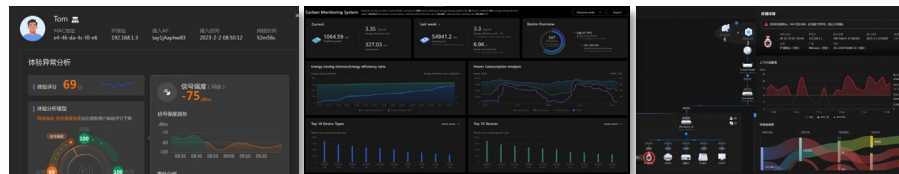
Digital Map: Unified O&M entrance, 90% efficiency improvement

Innovative Feature: One digital map for campus network, with people, application, terminal, network and the connections

Experience View
VIP & application

Green View
Power consumption

Security View
Terminal security



Roadmap

- **Experience view:** Key application visibility, LAN & WAN close-loop assurance
- **Green view:** PoE power view, network power consumption measurement
- **Security View:** Camera, printer, IP phone top 5 manufacture recognition.

Roadmap

	23.0	23.1	24.0
Experience	Restore the LAN physical topology. VIP user assurance and time- and space-based awareness; Office audio and video experience assurance (LAN)	Fault and optimization submaps; Analysis of common problems on the device side Office audio and video experience assurance (LANWAN-SaaS)	Flow assurance for Layer 2 production applications
Green	WLAN Power consumption	LSW Power consumption	IoT power
Security	/	Forescout integration	EDR interworking blocking

Demo Screenshot:

The screenshot displays the iMaster NCE-Campusinsight dashboard. At the top, there is a navigation bar with 'Home' and 'Dashboard' tabs, and a search bar. The main area features a map of network sites with data overlays for each site, including Health score, Network optimization items, Energy consumption (kwh), and Calibrated APs. A summary bar at the top right shows 'Network optimization items 4', 'Calibrated APs 21', and 'Interconnection links 1 / 9'. On the right side, there are three panels: a smart assistant greeting, a 'To Be Handled' section with 8 items, and an 'Event Report' section with 125 events. At the bottom, there are three device categories: Wireless Devices (5), Wired Devices (25), and Egress Devices (12), each with associated health and optimization metrics.

Summary Statistics:

- Network optimization items: 4
- Calibrated APs: 21
- Interconnection links: 1 / 9

Site Data (Health Score, Network optimization items, Energy consumption (kwh), Calibrated APs):

Site	Health score	Network optimization items	Energy consumption (kwh)	Calibrated APs
Site 01	99	0	118	2
Site 02	99	0	118	2
Site 03	99	0	118	2
Site 04	99	0	118	2
Site 05	99	0	118	2
Site 06	99	0	118	2
Site 07	99	0	118	2
Site 08	99	0	118	2
Site 09	99	0	118	2
Branch office 1	99	0	118	2
Branch office 2	99	0	118	2
Branch office 3	99	0	118	2
Head office	99	0	118	2

Summary Metrics:

- Wireless Devices: 5, Wireless network health: 85, Network optimization items: 2, Calibrated APs: 21
- Wired Devices: 25, Network optimization items: 1
- Egress Devices: 12, Network optimization items: 1

To Be Handled (8 items):

- 2 wireless network events (Involving 2 sites)
- 2 application exception events (Involving 2 sites)
- 4 VIP experience exception events (Affecting 3 sites)
- 2 wireless network events (Involving 2 sites)

Event Report (125 events):

- 2023-2-2 10:00:05: User Rubi accesses the Wi-Fi network. MAC address: e4-46-da-4c-f0-e6, IP address: 192.102.1.3, Access AP: tay1Jaaphw83
- 2023-2-2 10:00:05: User Steven experience deteriorates. MAC address: e4-46-da-4c-f0-e6, IP address: 192.102.1.3, Online duration: 52min56s, Experience score: 63
- 2023-2-2 10:00:05: User John experience deteriorates. MAC address: e4-46-da-4c-f0-e6, IP address: 192.102.1.3, Online duration: 52min56s, Experience score: 63

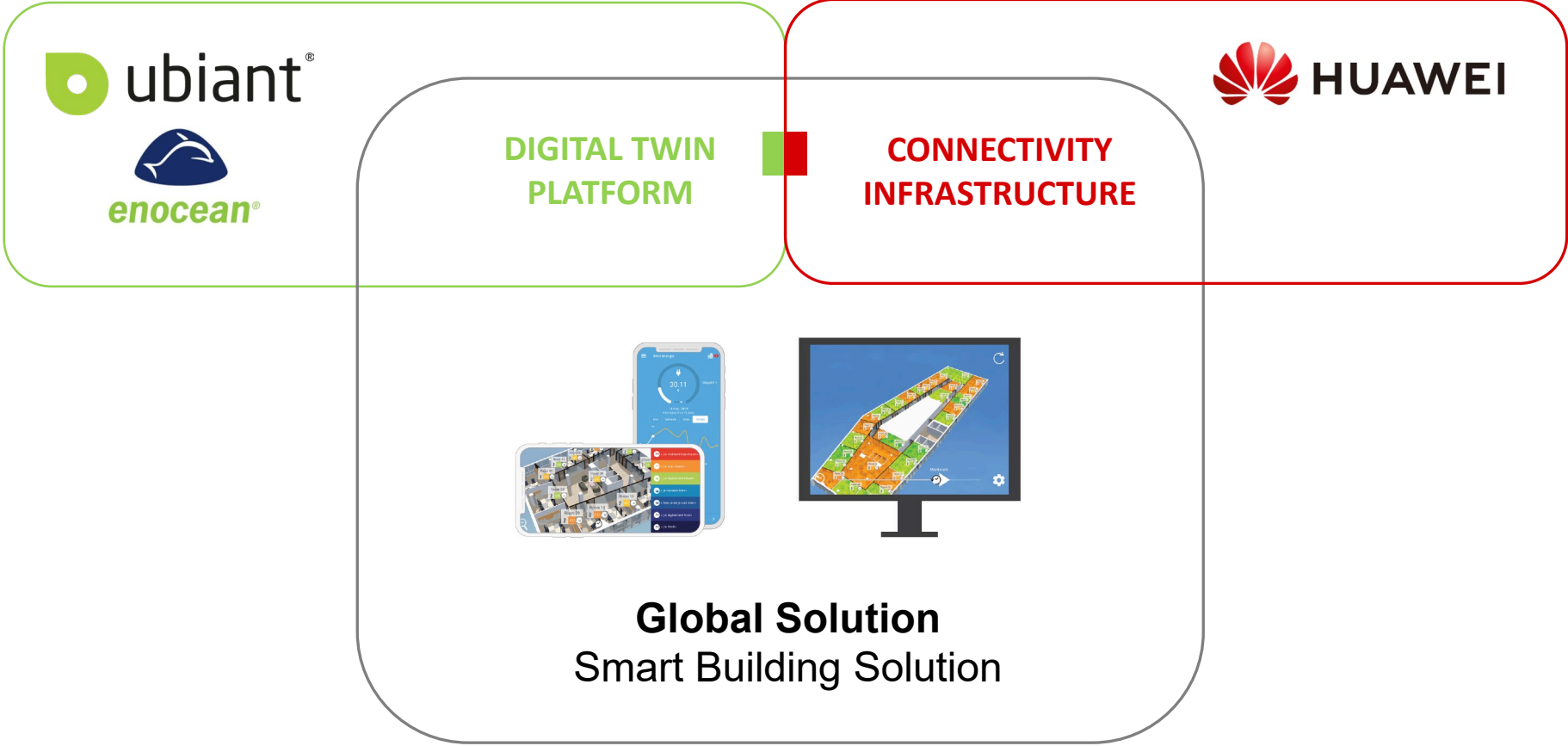
2

**Use The Network
In Order to Save Energy**



The solution

Association of
two expertises



A joint solution to meet major challenges



**IP
INFRASTRUCTURE**



+



=



Huawei Wifi AP - AirEngine 5760-51
+
Ubiant PCIe EnOcean card



+



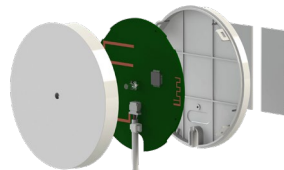
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Huawei Wifi AP – AirEngine WiFi6 AP models
+
EnOcean USB key

8771-X1T

Wi-Fi 7



Ubiant USB External Antenna
Alternative to EnOcean USB key

Smart Building = Connectivity + IoT + Cloud Mgmt



Network Data

Sensor Data



**SENSORS
ACTUATORS**

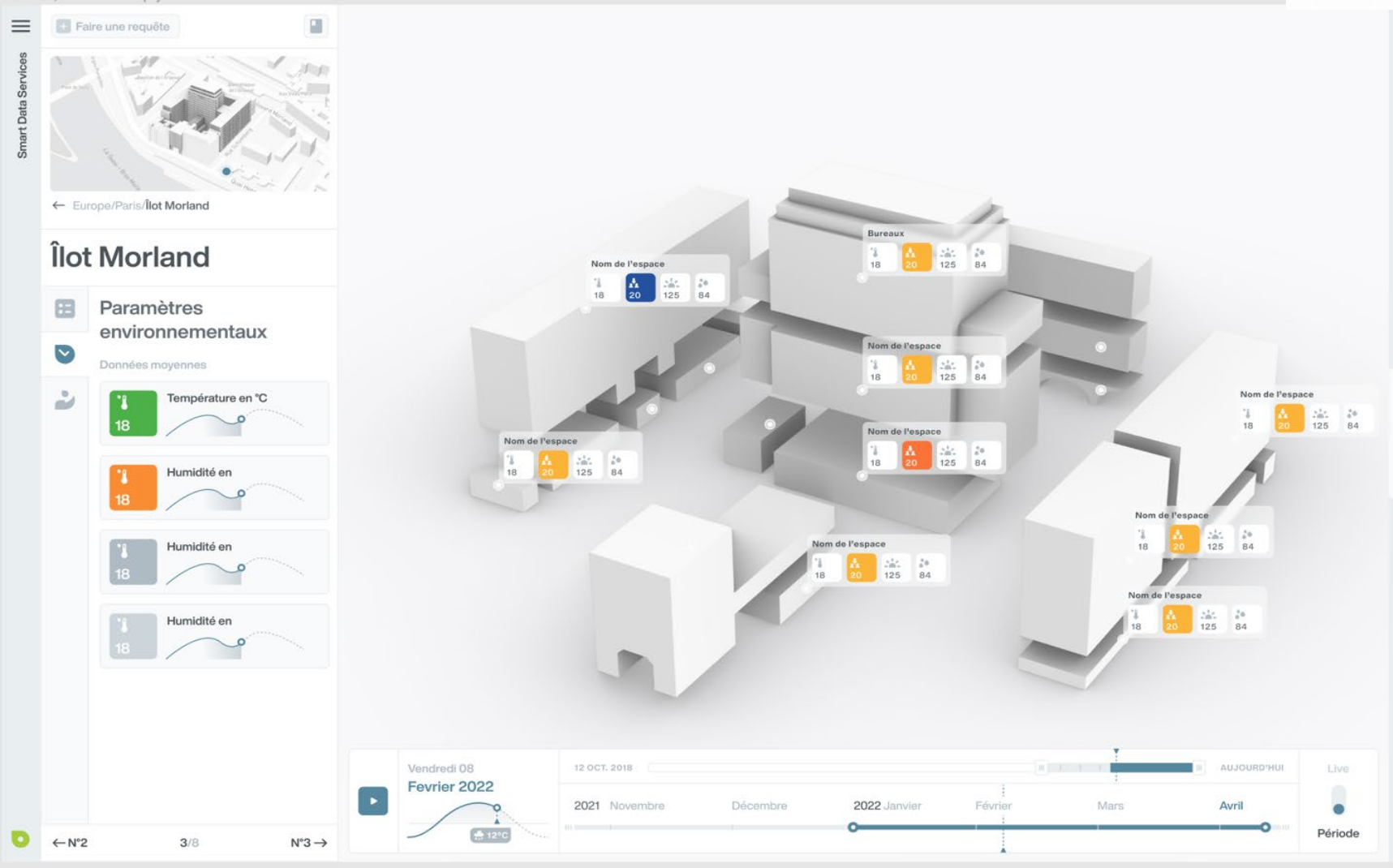


**More than
50
EnOcean Devices**

Ubiant Digital Twin, Global view

The screenshot displays the Ubiant Digital Twin interface for the Morland office building. At the top right, logos for 'morland mixité capitale' and 'EMERGE' are visible. The main header includes 'Smart Data Services', a search bar, and navigation options like 'Fr', 'LOGO ENTR', 'Aménageur', and 'EF'. A secondary header shows the date 'Samedi 26 Novembre 2021 à 12:48' and weather information: '06:30 am', '06:30 pm', 'Nuageux', and '80%'. The central area features a 3D architectural model of the building complex with green location markers. A legend on the right identifies 'Territoire', 'Îlot', and 'Bâtiment'. The bottom section contains several data panels: 'ILOT 01' with the name 'Îlot Morland' and address '17 Bd Morland, 75004 Paris'; 'BÂT 01 NF C 15-100' with the name 'Bureaux' and a button 'Aller au bâtiment'; a 'Général' menu with options for 'Fluides', 'Rôles', 'Services', and 'Objets'; and five key performance indicators: 'Occupation 75%' with a person icon, 'Production CO₂ 238m³' with a cloud icon, 'Coûts 2389€' with a Euro symbol, 'Autosuffisance 48%' with a circular gauge icon, and 'Température 28°' with a thermometer icon.

Ubiant Digital Twin, Global view



3 Huawei WiFi-7



Industry-Leading Enterprise-Class Wi-Fi 7 Introduction

Wi-Fi 7



**Wi-Fi 7 AP
AirEngine 8771-X1T**

* Available on the configurator, to be put into commercial use at the end of September

- 4 (2.4 GHz) + 4 (5 GHz) + 4 (5/6 GHz, switchable)
- Maximum device rate: 18.67 Gbps
- Ultra-long-distance 300 m PoE++ over hybrid cables, allowing for on-demand flexible site selection and deployment
- Dynamic-zoom smart antennas, allowing for intelligent on-demand adaptation
- AIOB architecture, compact and energy-saving, reducing PCB layers from 5 to 3
- 2 x 10GE + 1 x 10GE SFP+ (hybrid cable), supporting on-demand optical-electrical use and fast speeds
- 1 x DC + 3 x PoE++, offering three-way redundancy and flexible power supply

Ultra-high-speed access

Record-high performance of the entire system, 10 Gbps access in rooms



AP



AP

13.25
Gbps

Rate



Fastest AP

(Up to now)

Superior performance tested on a single terminal



AP



STA

4.33
Gbps

Rate

2 ms

Latency

1.8s

1 GB video
download time



Highest speed

(Up to now)

