



# Internet of Edges (IoE)

Empowering a more efficient, sustainable and resilient Internet through distributed digital infrastructure

*By Green Communications*

## Distributed Digital Infrastructure



### EDGE NETWORK

digital infrastructure formed by a network of meshed edge devices.



### EDGE SERVICES

data and servers relocated at source to improve performance, resiliency and sovereignty.



### EDGE CLOUD

a cloud distributed at the edge by federating edges operating across multiple locations.

# Benefits

## PERFORMANCES

IoE provides edge devices with a high-bandwidth direct communications network, enabling the transfer of real-time videos over multiple wireless hops. By relocating services closer to the data source and end-users, latency is reduced.

## SCALABILITY

IoE's network is a vast mesh of edge devices, ranging from groups of autonomous robots to the infrastructure of industrial sites, cities, or entire territories. Our patented routing software has demonstrated exceptional performance in both scale and robustness.

## SOVEREIGNTY

Data sources and destinations are either directly connected or accessible via short distribution channels through IoE. This approach minimizes unnecessary data travel through third-party networks and servers, enhancing control over data management.

## HIGH ENVIRONMENTAL PERFORMANCE

IoE establishes new short distribution channels for local traffic, which accounts for 50% of the global datasphere. This innovation not only preserves global Internet and cloud resources but also significantly reduces the carbon footprint of local communications by up to 16 times.

## GREENSOFT

Software suite to create an Internet of Edges on customer hardware.

GreenSoft enables your hardware to connect directly and wirelessly with nearby edge devices, share resources, and access edge-based digital services without relying on existing infrastructure or a central server.

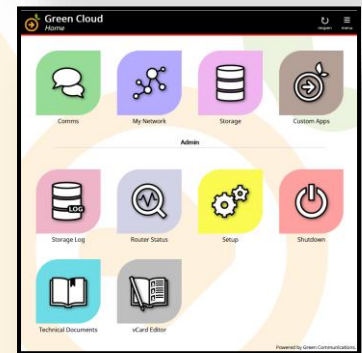
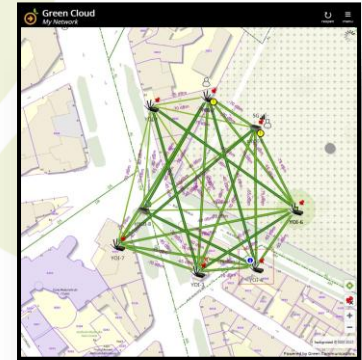
Edge-based services included: voice and text communication, file sharing, network visualization, user geo-location, blockchain, multicast, and more.

## EDGE DEVICES

Ready-to-Use Edge Devices Equipped with GreenSoft Technology.



GreenSoft is being used by French Armed Forces



 <p>WiFi 6e Green</p> <p>≈ 4.5 W 315 g Quad Core</p> <p><b>nYOI</b></p>	 <p>WiFi 6e 5G Green</p> <p>≈ 8 W 480 g Quad Core</p> <p><b>nYOI with 5G modem</b></p>
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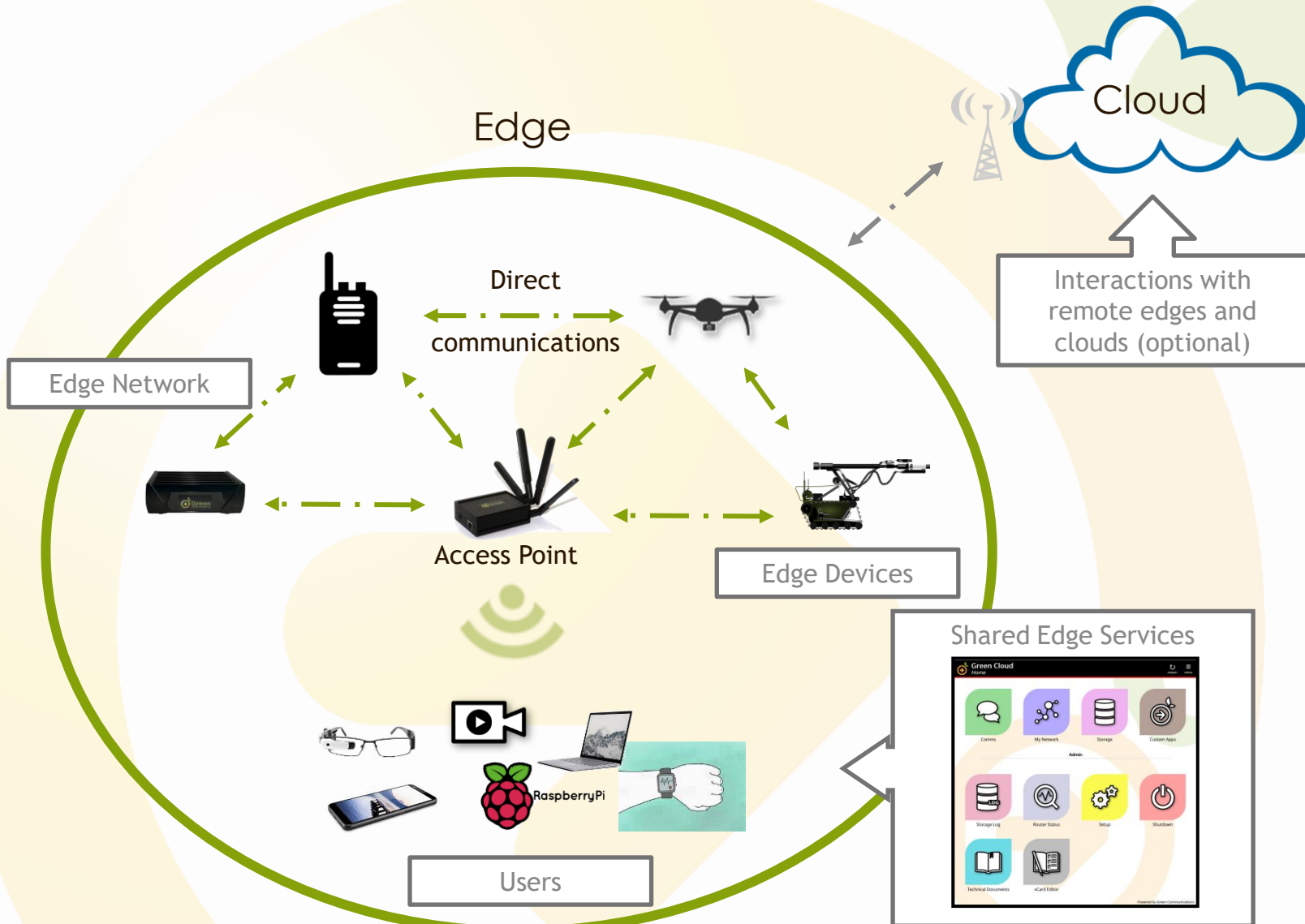
Interfaces

- WiFi 6e
- 5G
- WiFi 6
- 4G
- WiFi 4
- Ethernet


Optional Features

- GPS
- Bluetooth
- Battery
- Accessories

# Deployment



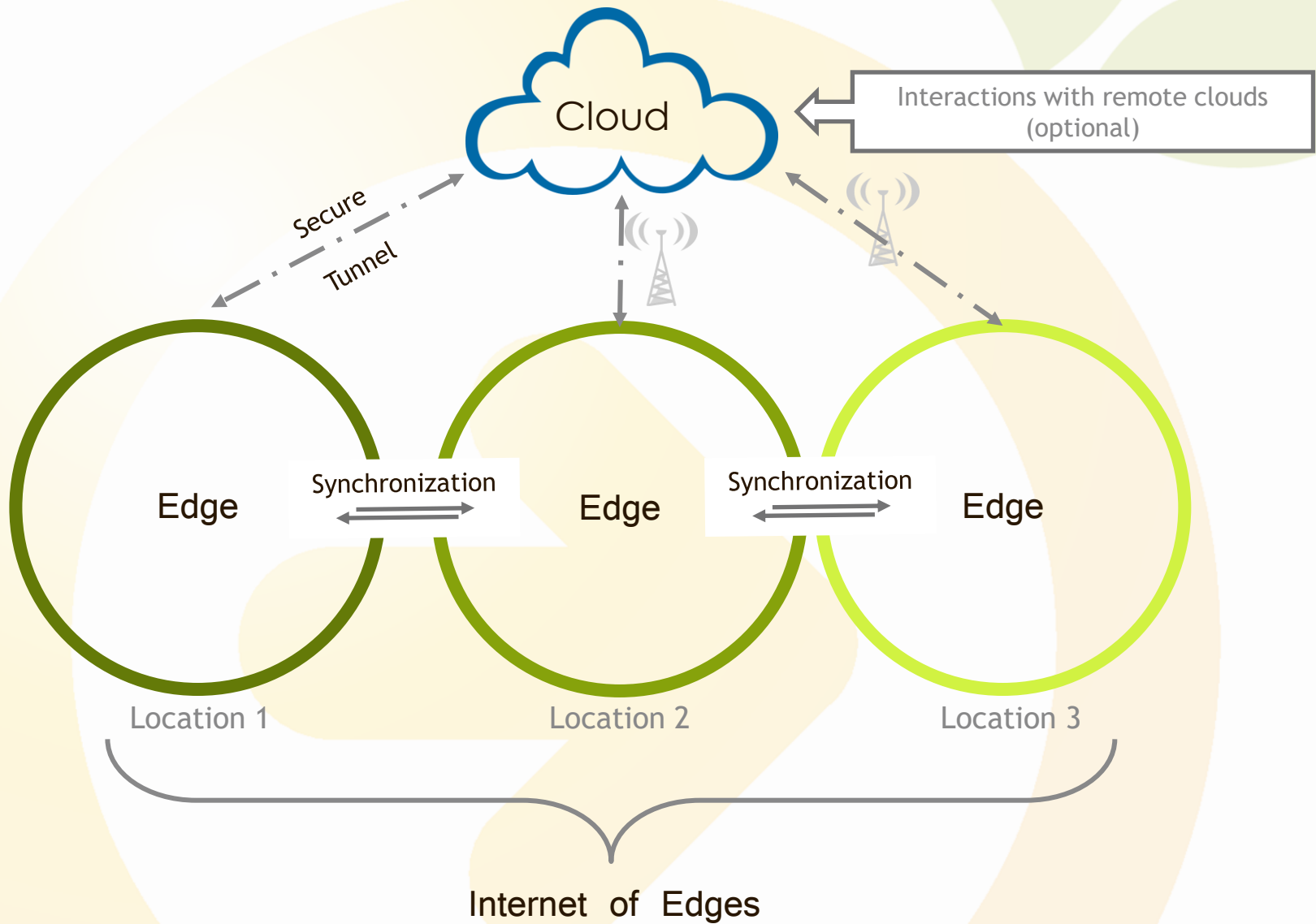
**Shared Edge Services**



The screenshot shows a dashboard with the following components:

- Green Cloud Home** header
- Admin** section with icons for: Control, My Network, Storage, and Custom Apps.
- Storage Log** icon.
- Router Status** icon.
- Setup** icon.
- Shutdown** icon.
- Technical Documents** icon.
- Local Editor** icon.

# Deployment



## PATENTS

The Internet of Edges (IoE) is the result of 20 years of research and development and a technology transfer from top French universities (Sorbonne University and Paris Saclay University) and the CNRS. The IoE technology is protected by patents in Europe, USA and Japan.

## PERFORMANCES

IoE delivers exceptional performance in:

- **Network robustness**, enabling real-time video transfer across up to 30 wireless hops (compared to the state-of-the-art limit of fewer than 5 hops).
- **Energy efficiency**, with edge devices consuming 5W of power (versus the state-of-the-art ~15W).
- **Carbon footprint reduction**, cutting greenhouse gas (GHG) emissions per GB transmitted by up to 16 times compared to cloud-based solutions\*.

\* <https://doi.org/10.1007/s12243-024-01061-1>

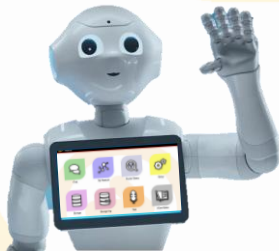
## TACTICAL COMMUNICATIONS

Disruptive digital infrastructure for digitizing and automating battlefield and rescue operations - UAF labeled



## INDUSTRIAL AUTOMATION

Decentralized digital infrastructure ensuring optimal network, cloud, and service performance for IoT and robotics.



## CYBER RESILIENCE

Alternative digital infrastructure designed to restore services immediately after a cyber-attack or permanently install a physically isolated IT infrastructure.



## SUSTAINABLE IT

Introducing short distribution channels to traditional Internet infrastructure to enable local and short-circuit consumption of digital services.





# They Trust Us



## GREEN COMMUNICATIONS

PARIS, France

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**ABOUT US:** Green Communications is an innovative company created in 2010 with a unique expertise in wireless networks and distributed systems. The company is strongly engaged in answering the challenge of Internet mobility, saturation and energy footprint. Therefore, we created loE, a low carbon impact digital infrastructure providing fast and resilient services for IoT, mobility and critical applications. loE is the result of 20 years of research and development and a technology transfer from top French universities (Sorbonne University and Paris Saclay) and the CNRS.