



# Internet of Edges (IoE)

*By Green Communications*

# Internet of Edges

A night cityscape with a network overlay of white lines and nodes. Several blue circular icons are placed at various nodes: a mobile phone, a Wi-Fi signal, a laptop, a house, and a bus.

Building a Faster, More Resilient, and Sustainable Internet.



Enhanced  
Performance



Innate  
Resilience

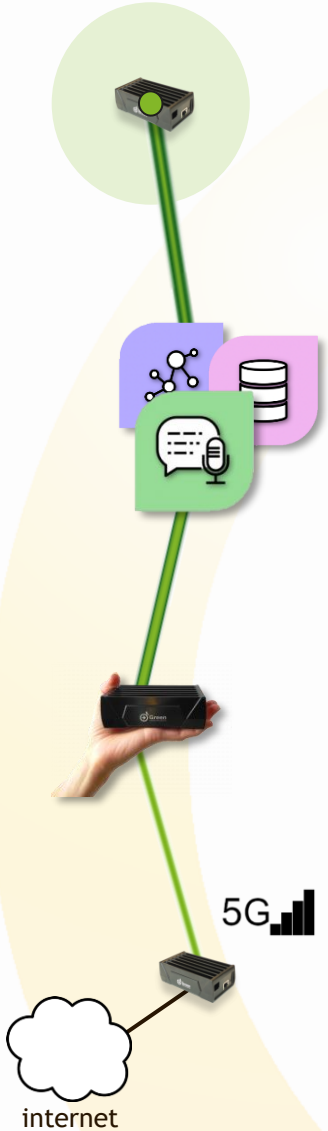


Intrinsic  
Security



Core  
Sustainability

# Technology



## AUTONOMOUS EDGE NETWORK

A self-sufficient network composed of a constellation of interconnected edge devices, enabling autonomous, high-bandwidth, real-time local communication without relying on any existing network infrastructure.

## EMBEDDED EDGE SERVICES

Servers and services are embedded and distributed across edge devices, optimizing response times, eliminating the need for remote resources, and creating systems with no single point of failure.

## LOW POWER EDGE DEVICES

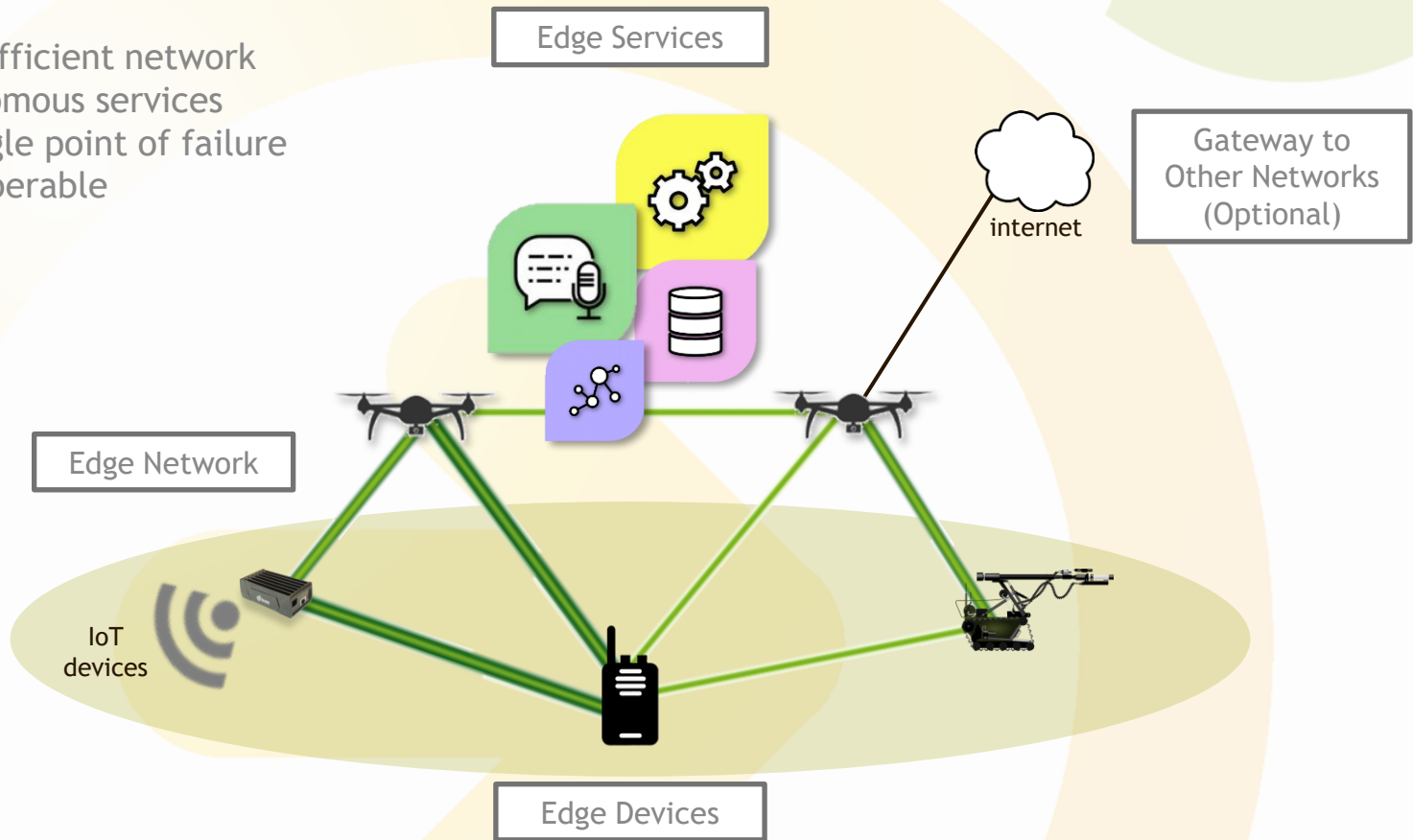
The Internet of Edges functions on very low-power, resource-constrained edge devices. It can be implemented either as software directly integrated into the systems of drones, robots, radios, and similar devices, or as an additional device positioned one hop away from end-user devices.

## SCALE & INTEROPERABILITY

Autonomous yet interoperable, the Internet of Edges (IoE) federates edge devices both locally and across multiple locations.

# Edge Deployment

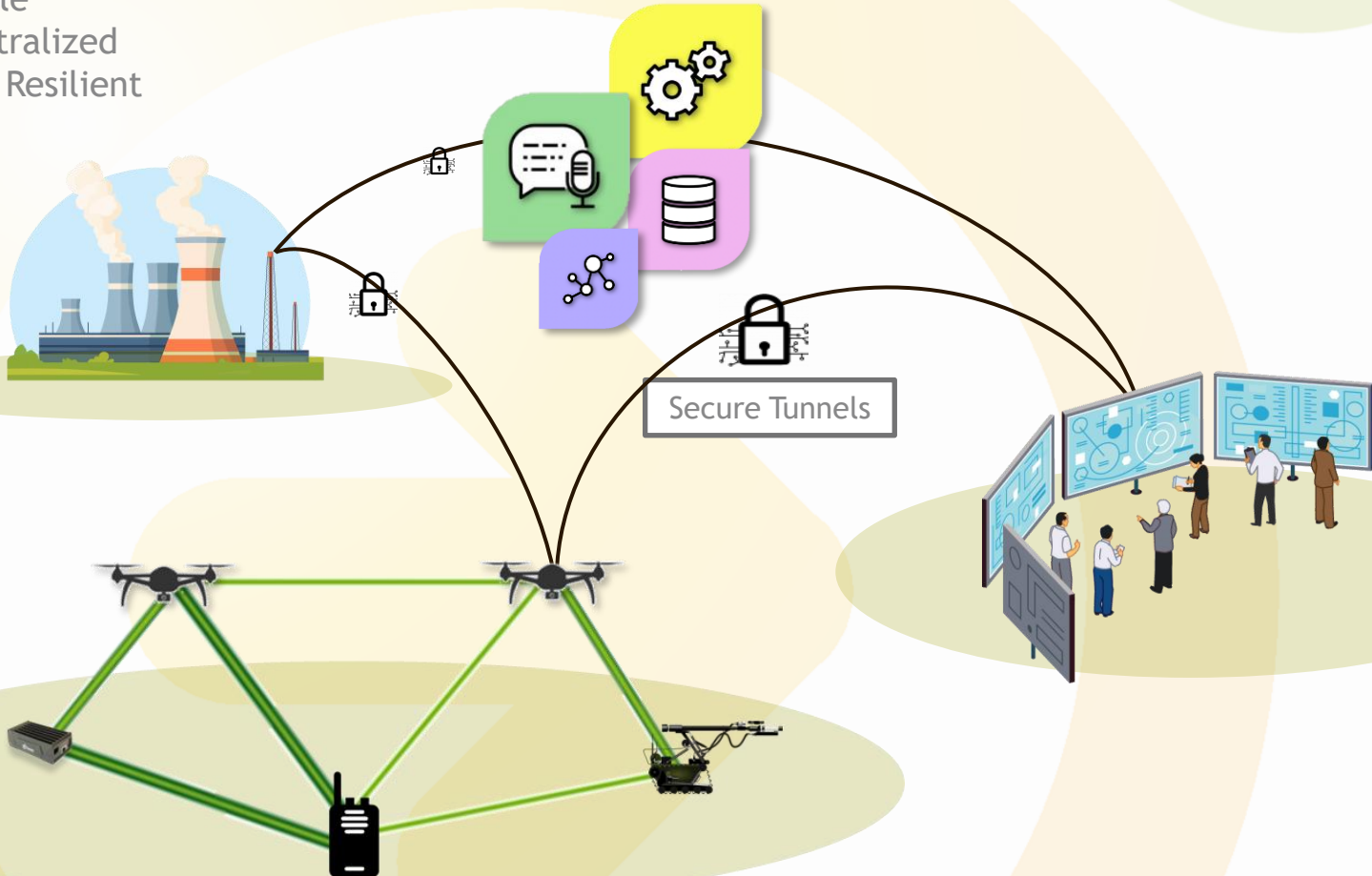
- ✓ Self-sufficient network
- ✓ Autonomous services
- ✓ No single point of failure
- ✓ Interoperable



# Multi-Edge Deployment

- ✓ Secure
- ✓ Scalable
- ✓ Decentralized
- ✓ Highly Resilient

Services' Synchronization



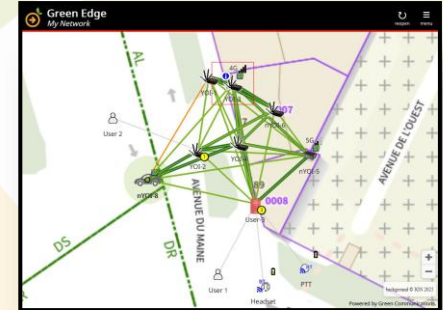


## GREENSOFT

**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.**

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

-  **5G**
-  **4G**
- 
- 

**Optional Features**

-  GPS
-  Bluetooth
-  Battery
-  Accessories

## 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**. IoE products have been commercialized for 15 years in multiple market applications.

## 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

IoE is digitizing and automating battlefield and rescue operations.



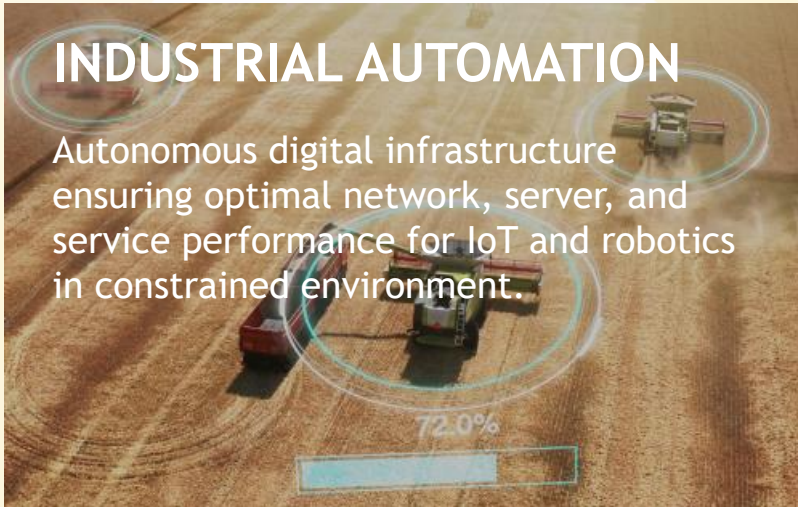
## CYBER RESILIENCE

Alternative digital infrastructure designed to restore critical services immediately after a cyber-attack.



## INDUSTRIAL AUTOMATION

Autonomous digital infrastructure ensuring optimal network, server, and service performance for IoT and robotics in constrained environment.



## SUSTAINABLE IT

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





# They Trust Us

**KNDS**

**SAFRAN**

**NAVAL GROUP**

**THALES**

**AIRBUS DEFENCE & SPACE**

**MINISTÈRE DES ARMÉES**  
*Liberté  
Égalité  
Fraternité*

**MINISTÈRE DE L'INTÉRIEUR**  
*Liberté  
Égalité  
Fraternité*

**BRIGADE DE SAPEURS-POMPIERS DE PARIS**

**SAPEURS POMPIERS Ile & Vilaine**

**SUEZ**

**ORANO**

**EDF**

**ENGIE**

**LOCA64**  
— LOCATION —

**Valeo**

**SNCF**

**RATP**

**PRESCOM**

**Groupe INTRA**

**PUBLICSLIVE**

**SOGETI**  
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**université PARIS-SACLAY**

**SORBONNE UNIVERSITÉ**

## GREEN COMMUNICATIONS

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<https://www.green-communications.fr>

**ABOUT US:** Green Communications is an innovative company founded in 2010, specializing in wireless networks and distributed systems. We are committed to addressing the multifaceted challenges of the internet, including rising traffic, mobility demands, and growing carbon footprints. To tackle these issues, we developed the Internet of Edges (IoE), a decentralized digital infrastructure. IoE consists of a grid of federated edge devices that share their resources, enabling locally hosted digital services with enhanced performance, resilience, and sovereignty. The development of IoE is the culmination of 20 years of research and development, including technology transfers from leading French institutions such as Sorbonne University, Paris-Saclay University, and CNRS.