

CTHINGS.CO[®]

There's precious data
EVERYWHERE.
Let us help you see it.

Even your simplest processes and assets are glowing with untapped digital potential.

We deliver the promise of 5G by enabling a myriad of business cases and business models.

CTHINGS.CO



A bunch of experts helping enterprises in digitalization ...



RESIDENCE

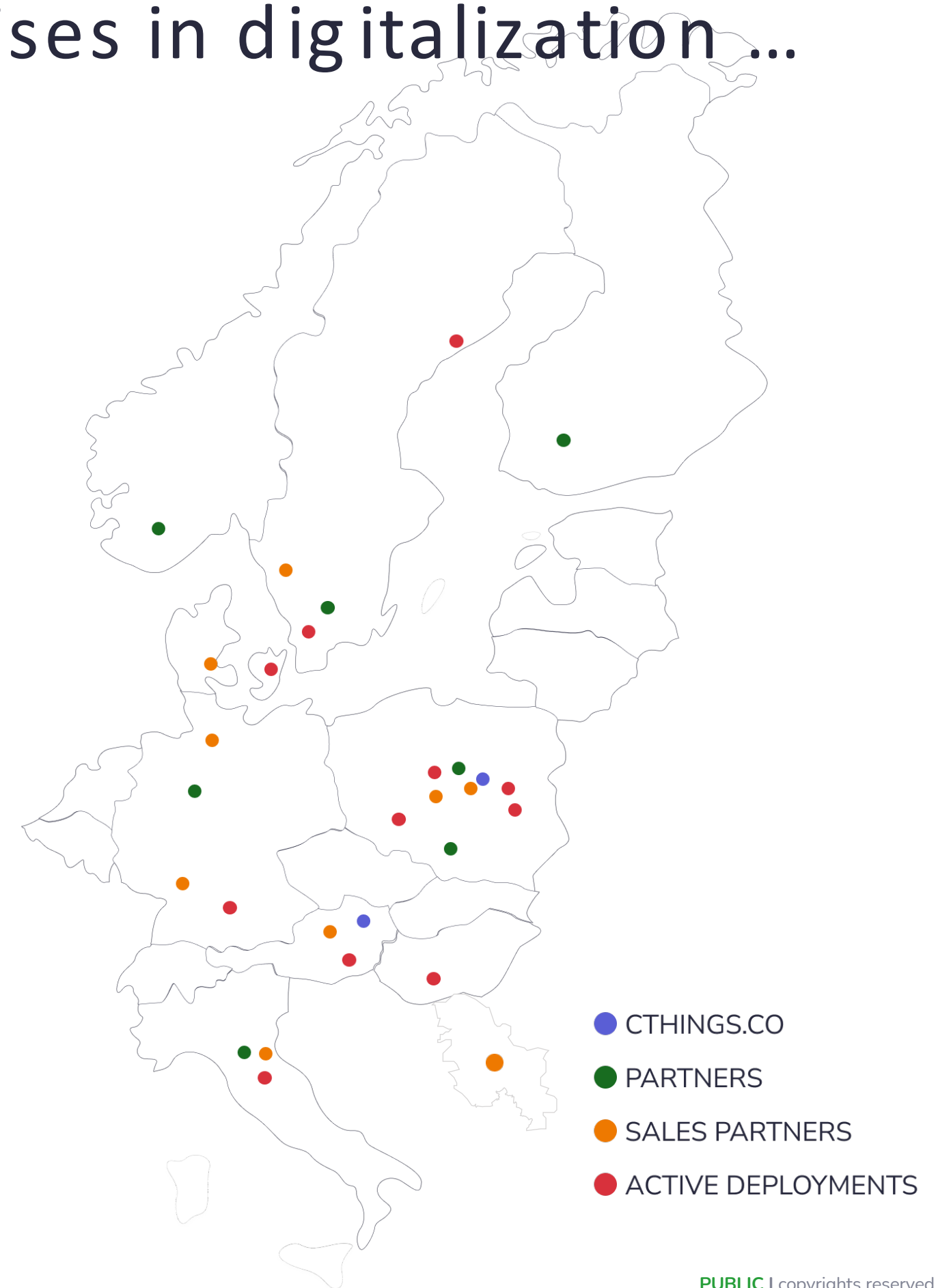
- HQ and R&D: Warsaw & Poznań (Poland)
- Sales Offices: Vienna/AT & Warsaw/PL
- Sales partners in Denmark and Sweden, France, Serbia, Austria, Germany

TEAM

- 35 employees in total
- 15 developments (hardware, software, application)
- After sales services

INNOVATION

- 1 patent granted
- 1 patent applied
- 5 TMs



... focusing on providing real value for our customers...

Up to

20%

**Lower Energy
Consumption**

Based on capturing real energy
consumption per asset

~134hrs

**Productivity
Gain Per Employee**

By simply knowing where what is
and reduce search time

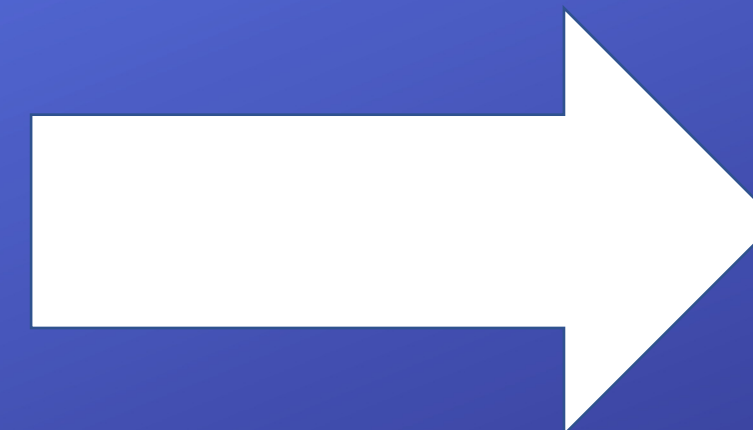
99%

**Asset Failure
Prediction**

Through thorough analysis of
all asset data



2 days
To see first results



... by providing meaningful insights into all operations ...

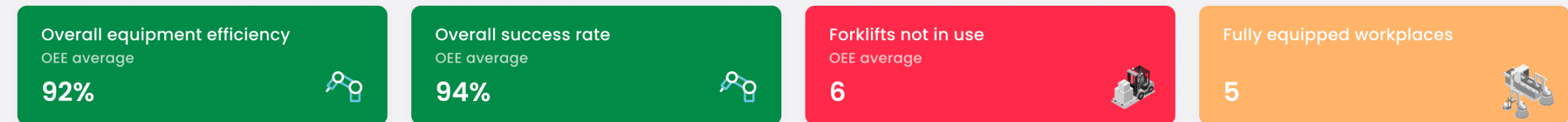
Dedicated Enterprise Dashboard

- Fully customizable dashboard to visualize findings in different formats and styles
- All data sources and processes under **one umbrella**
- Alarming functionality for surpassing different thresholds
- User-based view – for each group, **the right set of information**
- Reporting functionality to **export and document all findings**
- Easily accessible from **anywhere and any device**

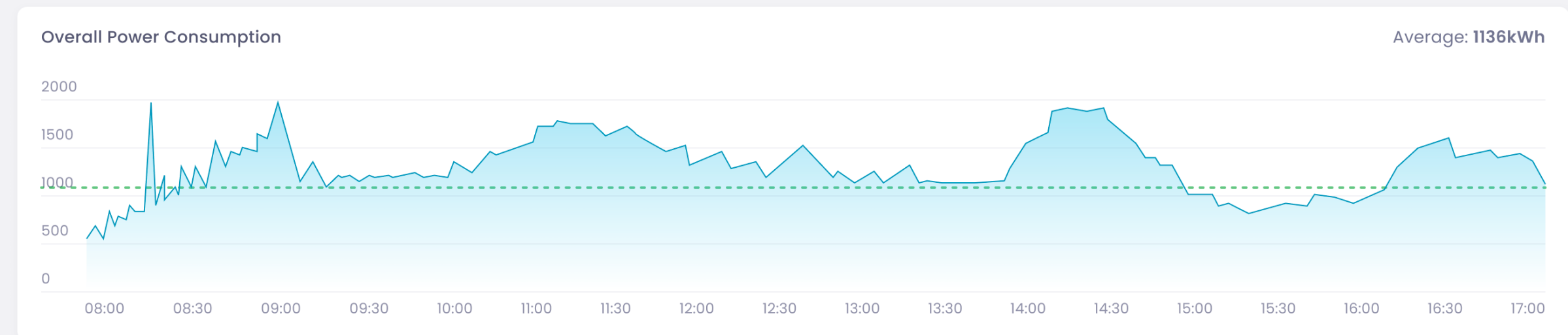
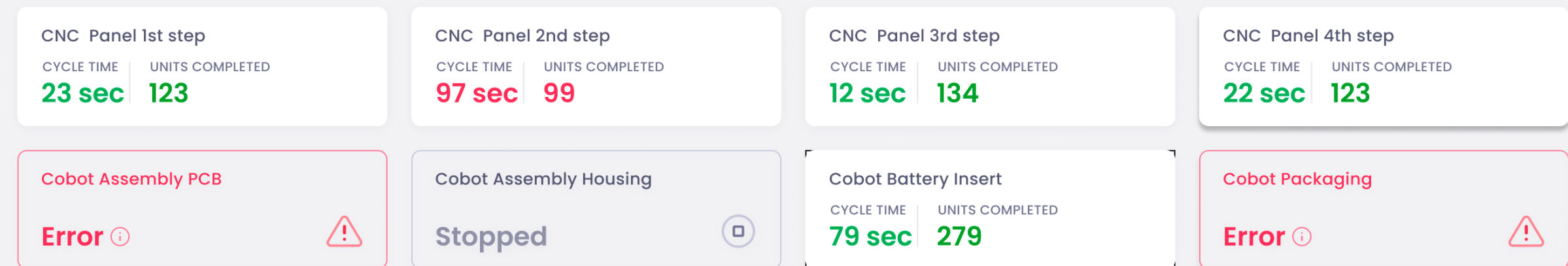


Performance Overview

Wed, 11.05.2022, 13:03



Production line overview



... through our easy-to-use comprehensive toolset ...

CTHINGS.CO 5G SUITE - ALL-YOU-NEED TOOLSET

5G IOT GATEWAY



- Multipurpose & Multi-tech
- Rich industrial interfaces
- High edge processing power
- Easy integration of additional technologies (Wirepas, LoRa,...)

OPERATING SYSTEM



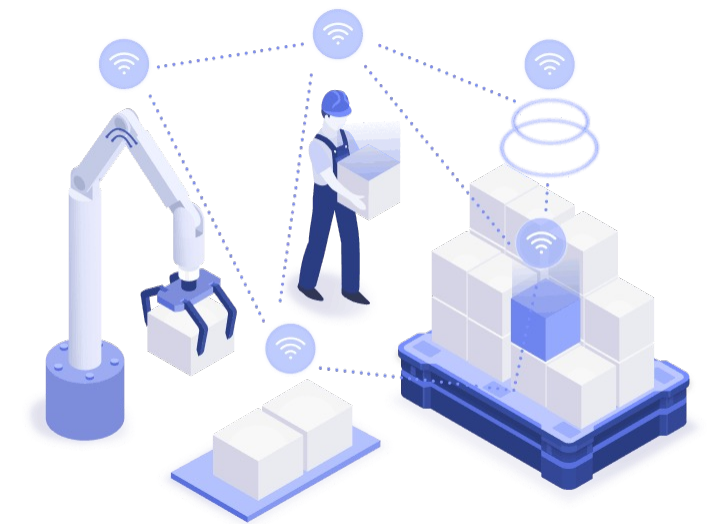
- Optimized operating system
- Edge microservices enabler
- Highly secured and interoperable

ORCHESTRATION PLATFORM



- “One-click” applications orchestration
- Comprehensive IoT management
- Hybrid cloud operations
- 5G NEF integration (in testing with DTAG)

INTEGRATED USE-CASES



- Fully tested and verified solutions and use cases
- Simple and quick deployment
- Tremendously shortened time to benefit

... fulfilling all strict use case driven requirements ...

- **Industrial-grade** and ideally **non-intrusive** solutions to easily and securely integrate and deploy new use cases
- **Connect and orchestrate** all systems and applications
- **Enterprise-grade wireless connectivity** for **data collection** and **remote control** with dedicated Quality of Service (QoS) for IoT solutions
- **Edge data computing** for best decision-making with ML/AI
- **Detailed overview** of entire scope of resources, applications, devices, compute and networking resources.
- Best **remote maintenance** and actuation, and KPIs monitoring.

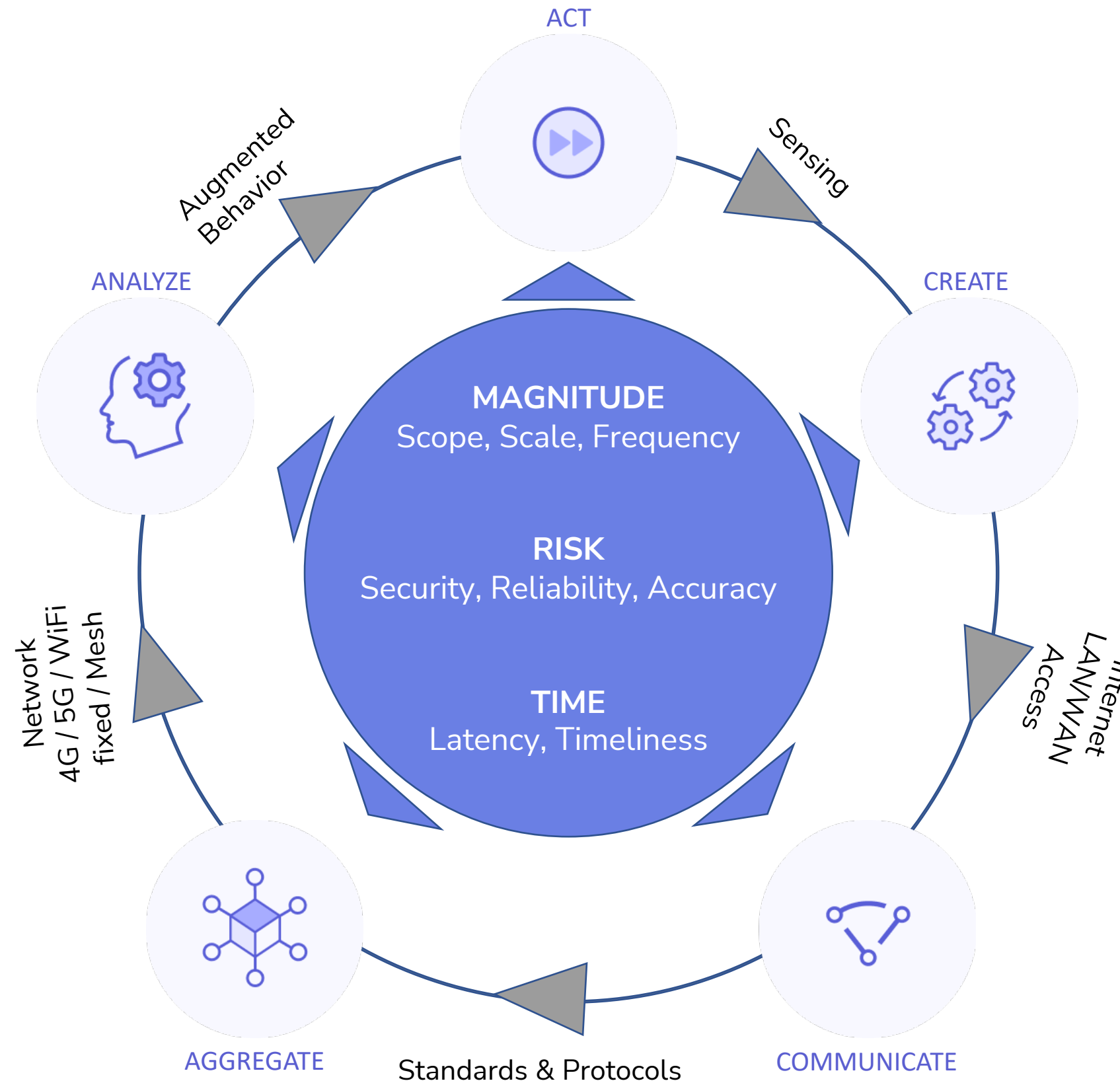


5G IoT Market grows with a CAGR of 79,1% year on year

... and taking out complexity for IoT deployments ...

Integration Requirements

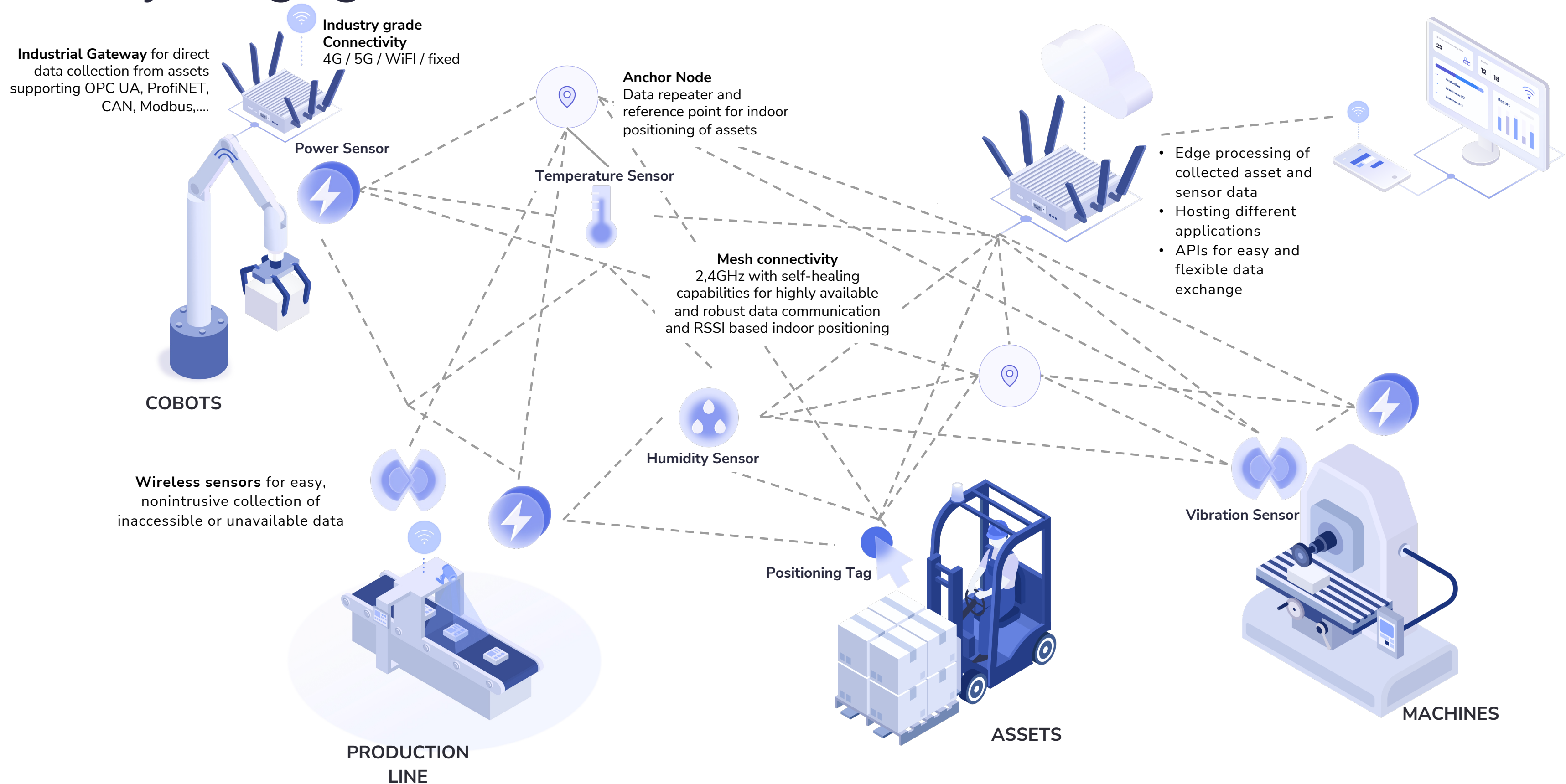
- Layers of technology stacks
- Wireless technologies
- Wired connectivity technologies
- Security protections
- Cloud / on-premise hosted
- Data analytics
- Business Systems



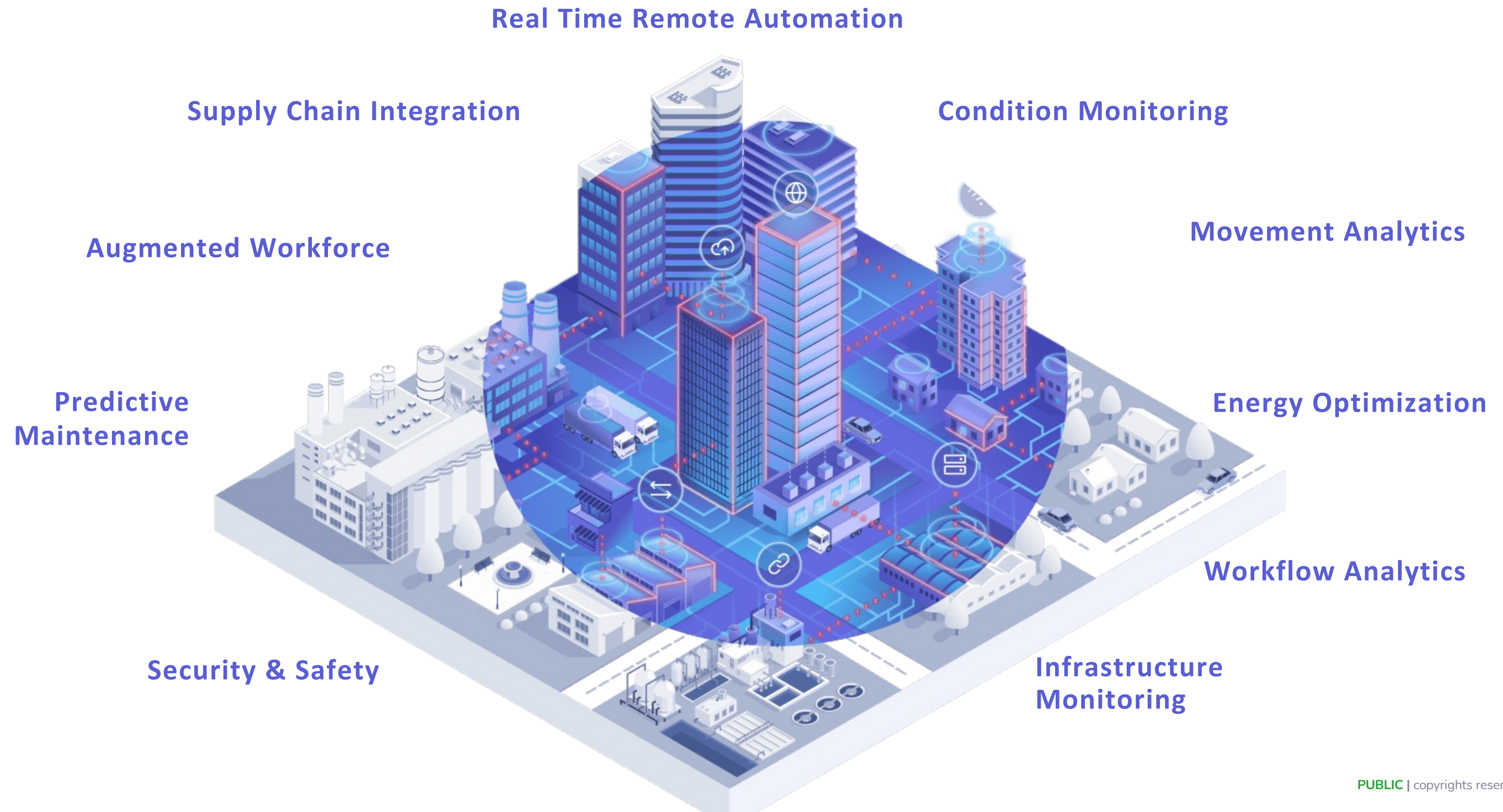
Business Benefits

- Seamless Ideation – Preparation – Evaluation
- Leverage existing experience
- Optimize business operations and business results
- Maintaining competitive edge
- Differentiation from competition

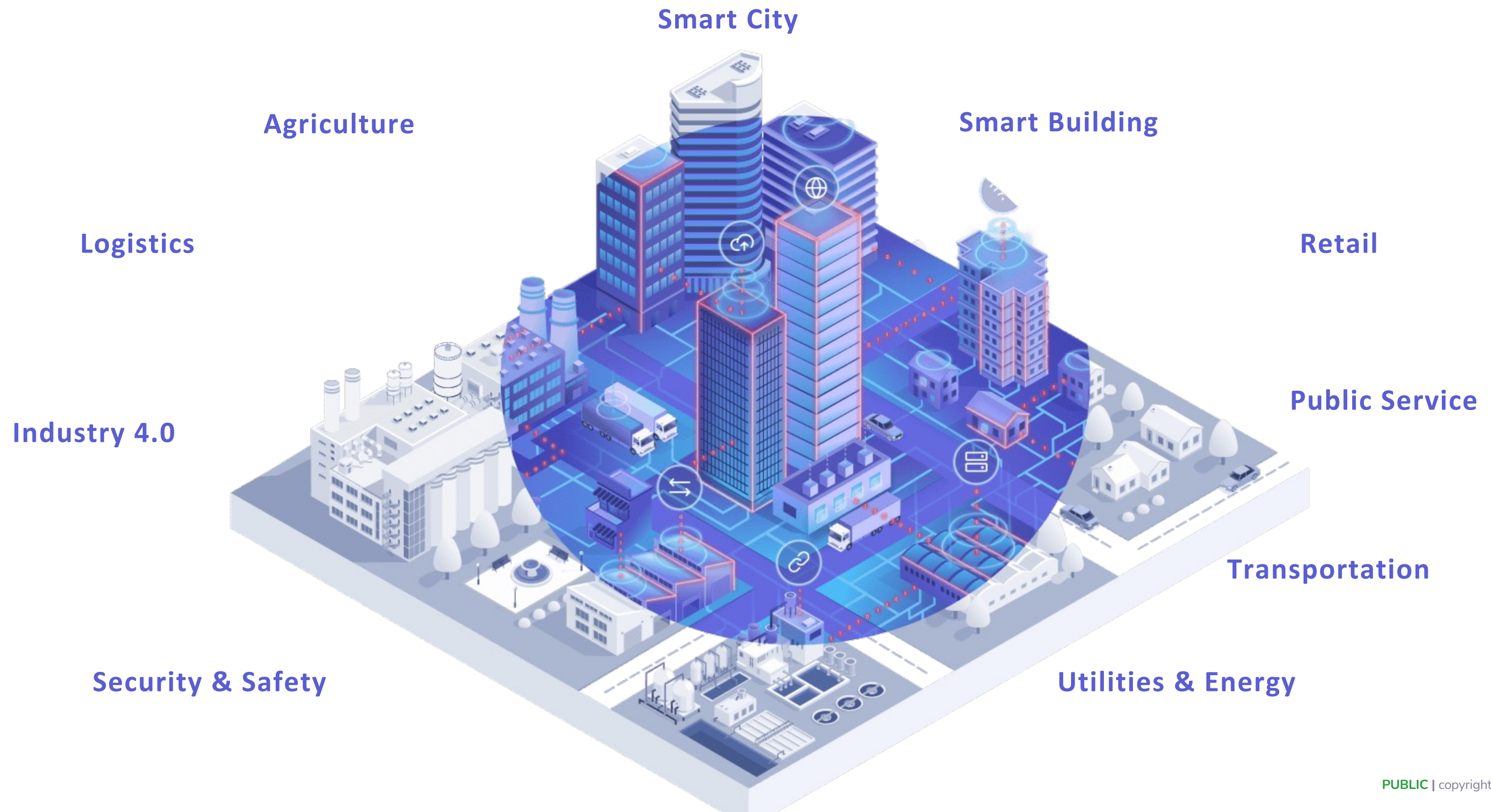
... by bringing all data sources under a unified umbrella ...



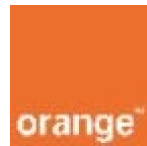
... enabling and providing a myriad of use cases ...



... across all verticals and domains ...



... and proven in many cases!



"(...) CTHINGS.CO fulfilled entrusted tasks, perfectly meeting the agreed deadlines and demonstrating a professional approach and flexibility in cooperation. The work performed by CTHINGS.co resulted in the first commercial implementations of the 5G Suite service. I recommend Cthings as a reliable partner in creating and delivering leading Industrial IoT Solutions."

Leszek Tomaszewski, R&D Expert and IoT Innovation Leader in OrangeFab, Orange / Poland



"(...) The solution enables the Spin Robotics customers to monitor the production quality of their screwdriving assembly tasks. CTHINGS.CO has a great team of IoT and cloud specialists that apply their skills to develop innovative tech solutions for day-to-day manufacturing and logistics challenges. "

Thomas Sølund, CTO & Co-founder, Spin Robotics ApS / Denmark



"(...) The NID-CTHINGS.CO solution is the first of its kind in Europe. We implemented it in a suburb of Copenhagen that, in 2011, suffered extensive flooding and damages after a downpour."

Niclas Rønne, CEONID ApS / Denmark



"(...) it is a complete solution for building complex integration projects in the IoT area. I had the opportunity to test them in an actual 5G campus network environment at Hub4Industry in Krakow, as well as with our 5G NEF Early Adopters Program in Berlin – I was pleased with the results."

Wojciech Pawlak, Innovation Manager / 5G Expert, Deutsche Telekom AG / Germany



"(...) In addition to improving production and warehouse logistics efficiency, location systems can be used for collective security protection. The safety of our employees is our overriding goal, and its implementation is supported by solutions provided by CTHINGS.CO."

Artur Gryniewicz, CEO of Valmont / EMEA



"(...) CTHINGS.CO offers end-to-end solutions to digitize your manufacturing with the expertise of a dedicated team consisting of IoT and 5G experts. As a representative of the industry, Lodz Special Economic Zone is a proud business partner of CTHINGS.CO hoping to be part of the evolution provided by the startup!." **Magda Kubicka, Director of the Innovation Department, Lodz Special Economic Zone / Poland**



"(...) In the digitization process, the key becomes the ability to collect data from distributed devices (IoT), their local processing (Edge Computing), real-time analysis (RTP), as well as quick transfer to superior systems (Cloud, 5G). I am convinced that with the development of 5G systems and the spread of private networks, CTHINGS.CO's 5G Suite will be appreciated by many customers, especially in the production and logistics sectors."

Marcin Sugak, Business Development Director, Ericsson / Poland



"(...) We are excited to have CTHINGS.CO as our partner and see a large number of use cases covered by their Wirepas Massive enabled 5G IoT Gateway and 5G Suite."

Oula Välipakka, Director of Sales and Business Development, Wirepas / Finland



"(...) We have been very satisfied with all aspects of the collaboration, from technical know-how to the ability to listen and understand our prerequisites while solving upcoming problems and difficulties together with the customer. We hope that this project has inspired CTHINGS.CO to future collaborations within the water sector." **Josefin Barup, Development Project Manager, VA SYD / Sweden**

Case Example: Multi-business steel industry mesh monitoring

Area

- 20.000 m² overall area, 10.000 m² production area

Connectivity

- 40 Small Cells and core for **private Campus Network for automation increase**
- **Dedicated sensor network for reliable data collection and localization**
- **Sensors and gateways for data collection, remote control and predictive analytics**

Application

- **All data sources and processes under one umbrella**
- **Alarming functionality** for surpassing different thresholds
- **User-based view** – for each group, the right set of information
- Reporting functionality to **export and document all findings**
- Easily accessible from **anywhere and any device**

TCO and ROI

- **5 years TCO including all hardware, software, platforms, applications, services and 5 years warranty**
€800k (€160k/year)
- **Savings achieved based on reduced searchtime, optimized downtimes and higher grade of automation**
€310k/year → €1.550 total over 5 years

SMART INDUSTRY



Cthings 5G suite to optimize supply chain and operations and generate substantial savings

- Geolocate steel-industry large-sized materials across many sites using Mesh network
- Supervise wear of machines to anticipate and prevent production line shutdowns
- Control workers environment and their conduct to grant safety
- CTHINGS.CO improves production, warehouse logistics efficiency, and collective security



Employees



Manufacturing facilities



Countries



Continents

CTHINGS.CO®

THANK YOU

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