CTHINGS.CO

5G

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Intelligent systems for edge computing complete, end-to-end solutions to upgrade your manufacturing, logistic park, public utilities, or municipalities.



THE PROBLEM - INDUSTRIAL CHALLENGES

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COVID-19 creates significant disruption in supply chain.

According to the CEA calculations more than 60% of manufacturing businesses have delays nowadays.

Labor shortage blocks GDP growth in EU.

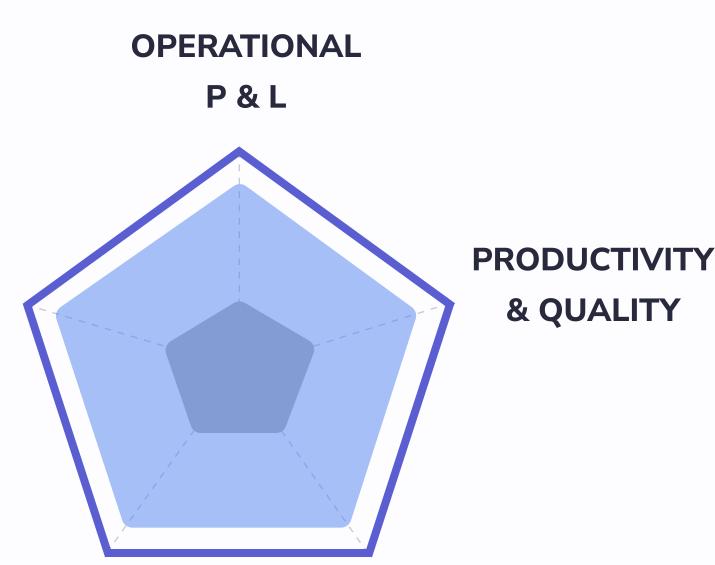
Unemployment rate in euro zone is now just 0.4 % points away from its all-time low, based on the ING economists data.

INDUSTRIES NEED DIGITIZED & AUTOMATED OPERATIONS

- Increase productivity and quality
- Decrease costs and maintenance efforts
- Lower carbon emissions
- Move on to sustainable growth

CUSTOMER SATISFACTION

> SAFETY & CYBERSECURITY



REMOTE MAINTENANCE

OUR SOLUTIONS - 5G Suite of Solutions

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5G SUITE

All-embracing toolset that enables 5G IIoT use cases

- Industrial 5G IoT Gateway Hardware
- Edge Computing Operating Embedded Software
- Cloud Orchestration Hybrid Networking & Digital Twin





Digitizing existing physical assets

Real-time and remote actuation

Analytics and processes improvement



Decreased maintenance costs



Increased productivity \bigcirc

Security improvement

OUR SOLUTIONS - CLASP

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CLASP

Localize physical assets and assure safety of staff, inventory

- Industrial Trackers Hardware Mesh Network
- Real-Time assets localization Embedded Software
- Online & Open Platform Operations Management & more









Decrease material losses

Increase safety and security

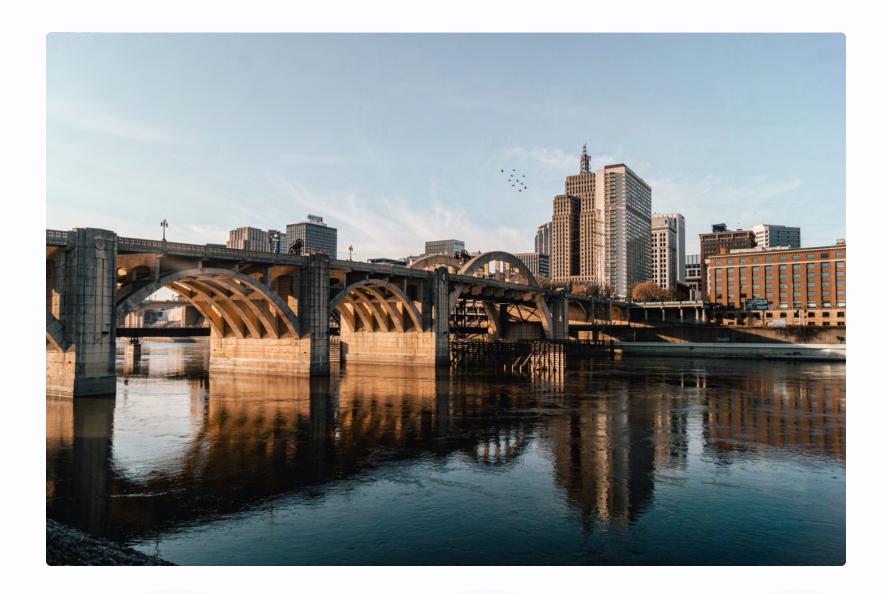
OUR SOLUTIONS - RADAR

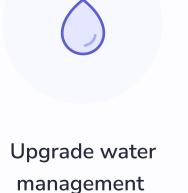
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RADAR

Innovative way of assuring safety in water management

- Water Utilities Monitoring devices Hardware
- Energy efficient & sustainable Embedded Software
- Online & Open Platform Remote Management & more





Remotely monitor

of liquid level

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Real time data from many locations

Prevent flooding by predictive maintenance





Instant alarming about problems

Cut maintenance cost



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5G Networking

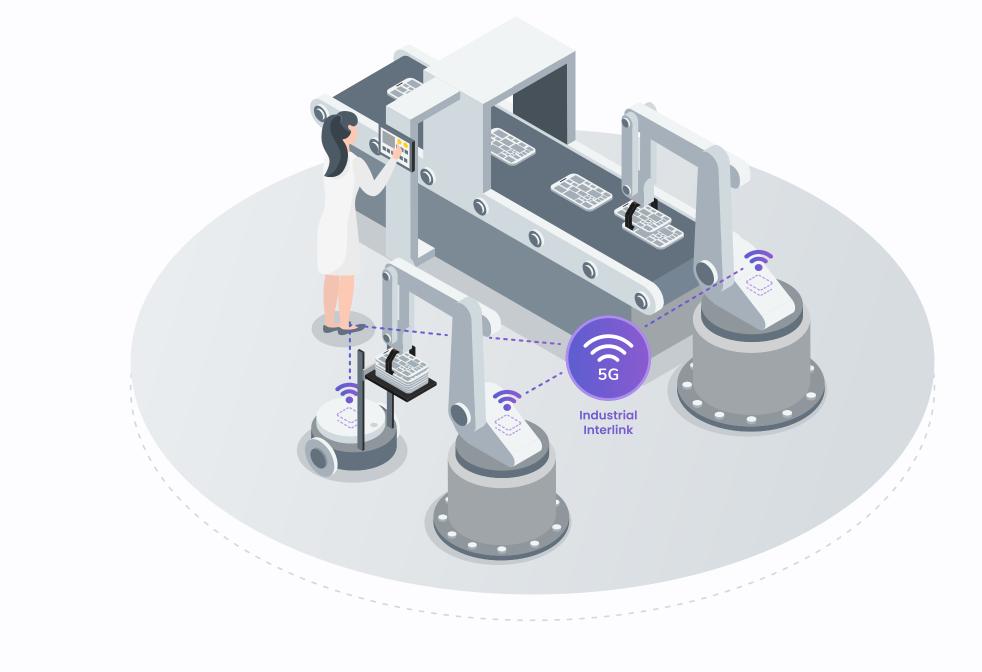
EdgeQ Pensado FOAM Movandi CellWize

Edge Computing Software

Samsara Seeq FogHorn BrightM Claroty

Industrial IoT Solutions

Aperio Augury Nozomi ReadyRob ClearBlade



UNIQUE VALUE PROPOSITION

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CTHINGS.CO 5G IOT SOLUTIONS

TO CONNECT ALL

- OUR SYSTEM is a BRIDGE that ENABLES effective use of 5G in industrial domain
- **OUR HARDWARE** is **SUSTAINABLE** with **LONG LIFECYCLE** and wide range **USABILITY**
- OUR PLATFORM is OPEN for integrations, EXPANDABLE, and BEST FIT for PURPOSE





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5G IoT Market

40.2B USD*

5G Industrial IoT Market

15.7B USD*

CAGR

79.1% y/y

26.6M EUR

*Data delivered as for 2026 from :marketsandmarkets.com



Qualified Sales Funnel for now > 2023

BUSINESS MODEL

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WHAT?	HOW?	CHANNE
5G loT/EDGE Hardware	One-off or Revenue Sharing	loT Solut Provide
Software License	B2B license	IoT Solut Integrat
Platform Subscription	Monthly or Yearly Fee	Telco Oper

IELS?

WHERE?

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erators

Industrial Enterprises

Utility Companies

Municipalities

WHO WE ARE?

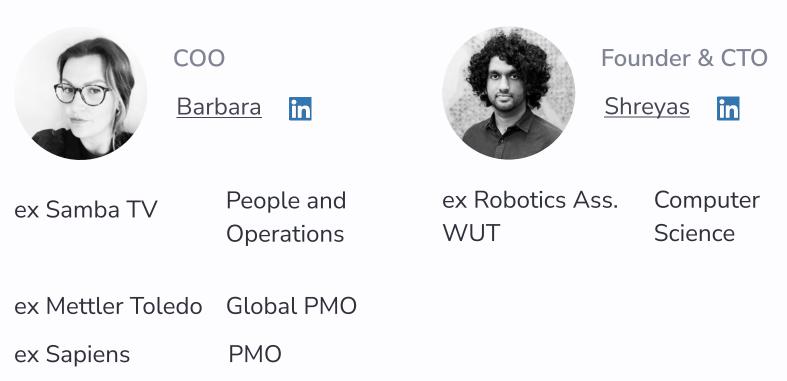
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Founder & CEO Arnold in



Founder & CSO
<u>Aleks</u> in



ex Samsung	Technology	ex Phoenix Contact	Sales	ex Samba TV
ex Qucell	PdM	ex Telekom Austria	Sales	
ex T-Mobile	Solutioning	ex Nokia	Solutioning	ex Mettler Toled
ex Nokia	Sales BDM	ex Zumtobel	Sales BDM	ex Sapiens

VISION

CREATE UBIQUITOUS TECHNOLOGY THAT RESIDES IN BACKGROUND OF OUR LIVES, ASSISTING ALL ASPECTS OF IT

We're stepping in the lineup with the industry to enforce their capabilities by providing ultra-fast 5G technologies, diminishing losses, and implementing beyond extraordinary hardware/software solutions to those who are willing to reach beyond their day-to-day results.

+ 20 EXPERTS RnD, Sales, Marketing, Growth

TRACTION & NEEDS

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2020

2021

<u>Investment</u> <u>& sales plan:</u>	investment : €580k funnel : €18k FTEs : 8	investment : €220k funnel : €570k FTEs : 25	in fu F
<u>Main activities:</u>	RnD MVPs: • 5G GW • Radar	RnD, Marketing Trials & Pilots: • 5G Suite • Utilities Radar	
<u>Markets:</u>	Poland Denmark	Poland, Denmark, Sweden	Po
<u>Partner & clients:</u>	Tele2, NID ApS	Tele2, Orange, T-Mobile NID ApS, VaSyD, Valmont and more	

2022

investment : €2M funnel : €14M FTEs : 35

RnD, Marketing, Sales Commercial launch:

- 5GSuite
- Utilities Platform
- IoT Platform

Poland, Denmark, Sweden, DACH

2023

investment : €5M funnel : €28M FTEs : 50

Scale-Up, Expansion Commercial:

- 5G Al Suite
- Utilities Platform
- IoT Platform

EUR, US

CONTACT

a.wierzejski@cthings.co



CTHINGS.CO 5G IOT SOLUTIONS

APPENDIX



The global 5G Industrial IoT market size is expected to grow from USD 0.5 billion in 2020 to USD 15.7 billion in 2026, at CAGR of 79.1% *

Reasons for this:

- Growing demand for connected devices in industrial environment,
- Increasing need for highly reliable network connectivity,
- Growing awareness for predictive maintenance,
- Government initiatives for smart cities,
- Growth in data traffic owing to increasing number of IoT devices across manufacturing industries.

In Europe, the global 5G industrial IoT market is predicted to hold the second-largest share over the forecast period.



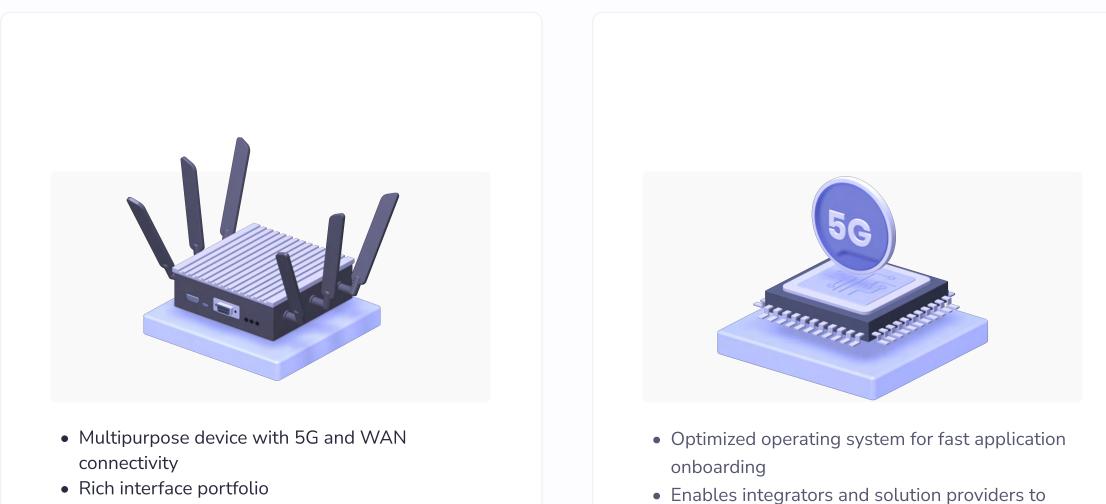
HOW IT WORKS - 5G Suite of Solutions

ALL-EMBRACING TOOLSET THAT ENABLES 5G IOT USE CASES

utilize the potential of 5G

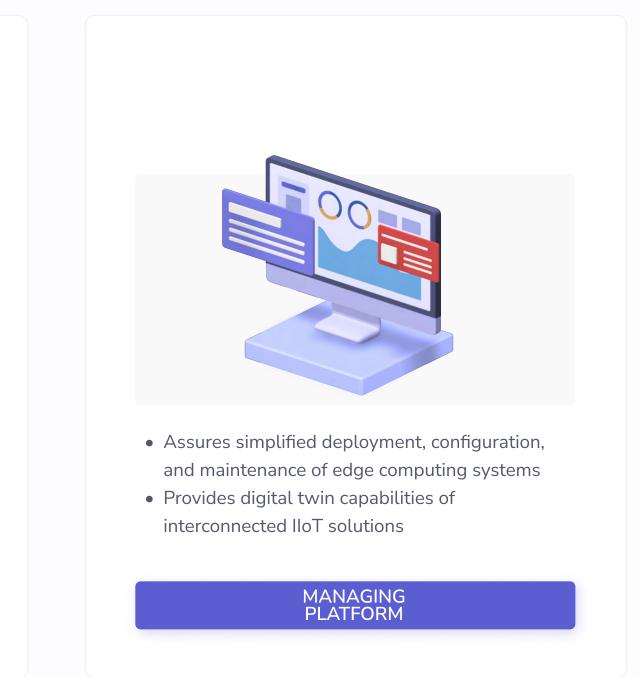
OPERATING

SYSTEM



• High processing power at the edge

DEVICE



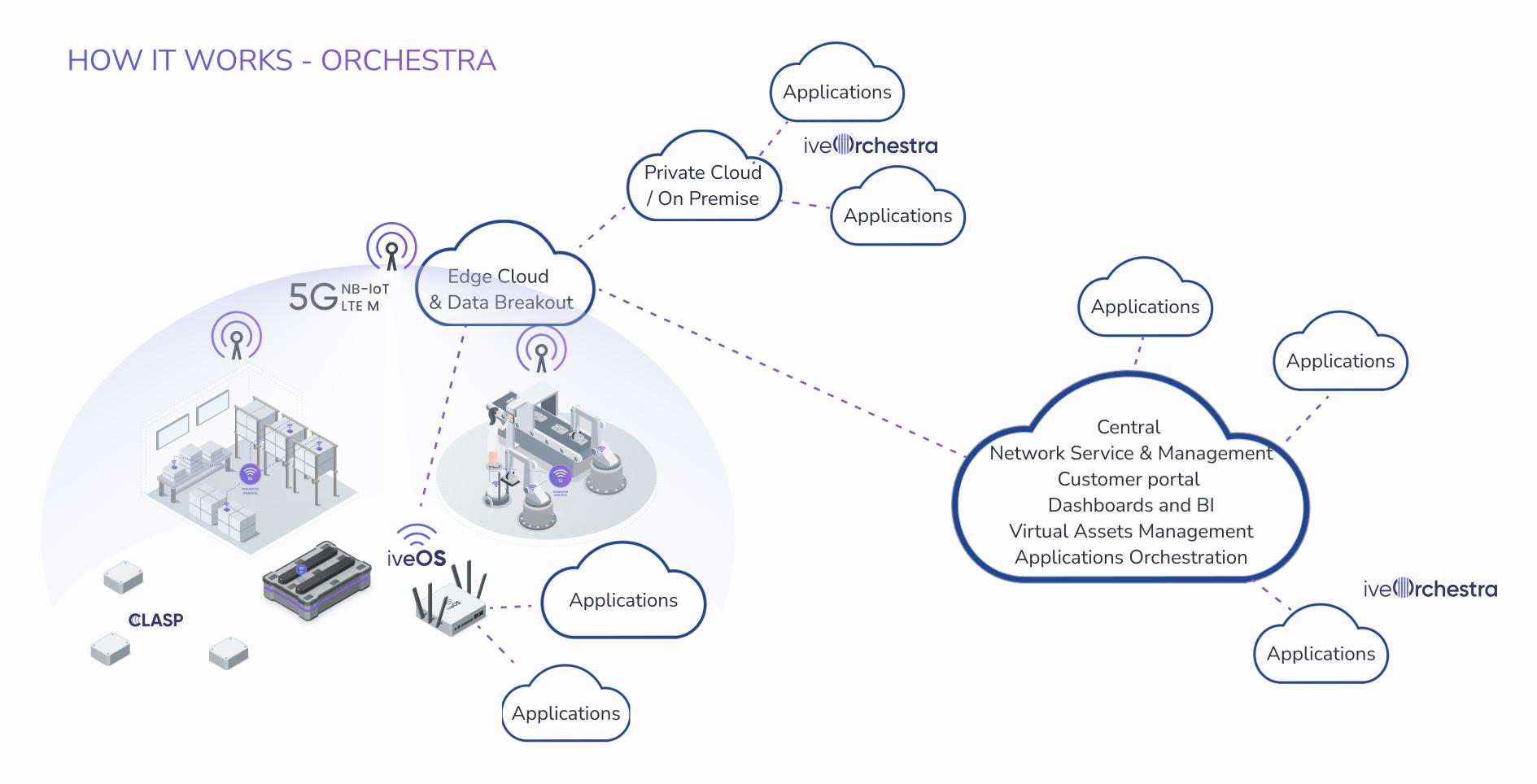
HOW IT WORKS - 5G Suite of Solutions



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- > https://www.hubraum.com/what-will-factories-of-the-future-be-like/
- > <u>https://sse.lodz.pl/2021/02/15/say-hi-to-the-edge-computing-that-serves-value-to-industry-4-0/</u>

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	Physical ID	T - 20490067	QUECTEL RM500Q	
	Туре	Industrial 50 IoT Gateway	Manufacturer Quectel	
	Group	ND	Type/Model RM500Q	
	Location	Olsztyn, ul. Kmicica 21	Firmware revision 1234	
			IMEI 35-419002-389644-3	
	Coordinates	55.683773, 12.523383		
	Manufacturing date	15.04.2020	RADIO MODULE C	,
	Deployment date	12.01.2021	RADIO MODULE D	
	Last seen online	09.02.2021, 12:37		
	Interfaces and Comment		Current Networks	
	Interfaces and Commands			
	Tab One	Tab Two Tab Three	NETWORK 1	
	1 Wireless LAN adapter Loca	al Area Connection* 3:	NETWORK 2	
	2 Media State	Media disconnected	Connection Technology 59 NB-IoT LTE M	
	3 Connection-specific DNS 4 Wireless LAN adapter Loca		Tracking Area Code (TAC) 3124 1363 3123 6441	
	5 Media State	Media disconnected		
	6 Connection-specific DNS 7 Ethernet adapter VMware	Network Adapter VMnetl:	Cell ID (Cl) 35421	
	8 Connection-specific DNS	S Suffix .:	T3324 Active Time 2 s	
	10 IPv4 Address	: fe80:56556.14d6:dd94:c2011/J6 192.158.86.1	T3412 Periodic TAU 1 h	
	11 Subnet Mosk	255.255.255.0	Signal Strength (RSSI) -30 dBm	
	12 Default Gateway 13 Ethernet adapter VMware	Network Adapter VMnet8:		
	14 Connection-specific DNS		Signal Strength (RSRP) -140 d8m	
	14 Connection-specific DNS	: fe80::2814:3e0:3def:9a85%6	Signal Strength (ISNP) -140 dam Signal Strength (SINR) -60 dBm	
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	14 Connection-specific DNS 15 Link-local IPv6 Address	: fe80::2814:3e0:3def:9a85%6	Signal Strength (SINR) -60 dBm	
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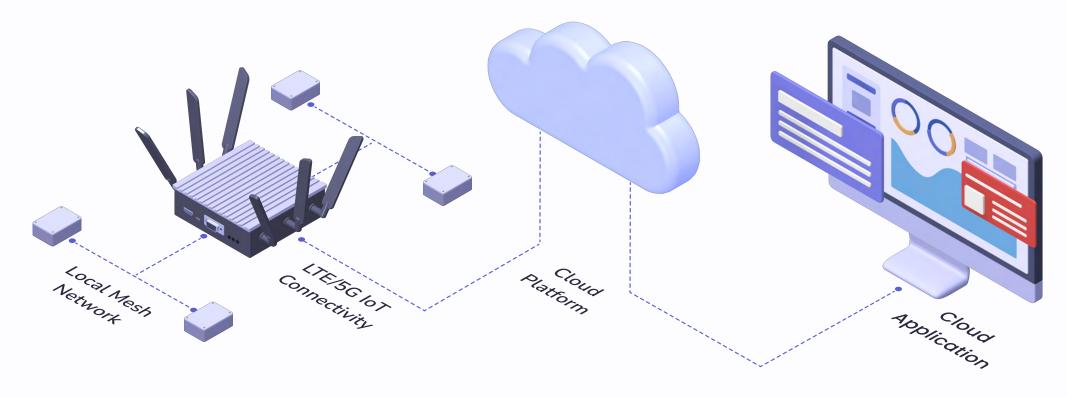
OUR SOLUTIONS - CLASP

ONLINE INVENTORY MANAGEMENT

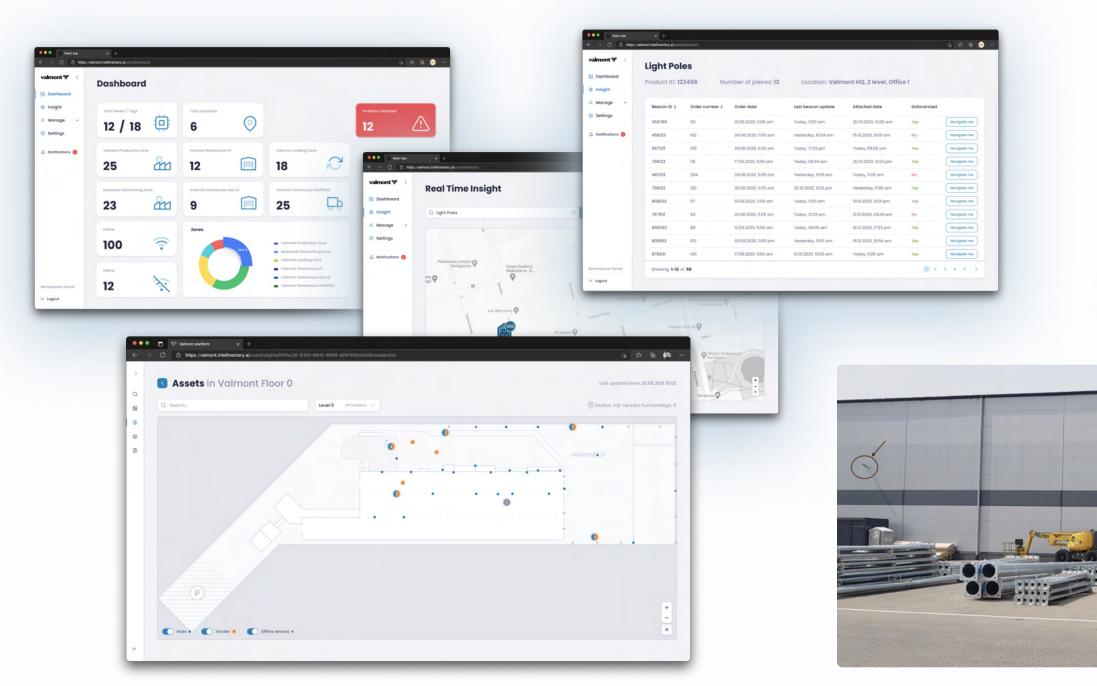
Smart nodes and trackers create a local mesh network of self-localizing components. Data is being gathered by edge computing 5G IoT Gateway device and pushed to Cloud Platform.

- 5G as wireless standard
- Cloud infrastructure
- Open Data APIs
- Data brokering

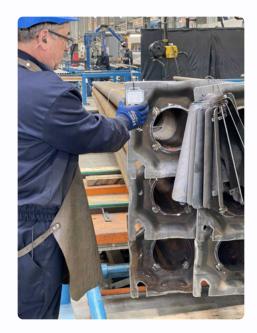
- Wide integration
- Cybersecurity
- Remote maintenance
- Assets management



REFERENCE



https://businessinsider.com.pl/firmy/biznes-spiety-trytytka-to-nie-powod-do-wstydu-polsko-austriacki-start-up-pokazuje-ze/wrfzec0









OUR SOLUTIONS - CLASP

SMART UTILITIES MANAGEMENT

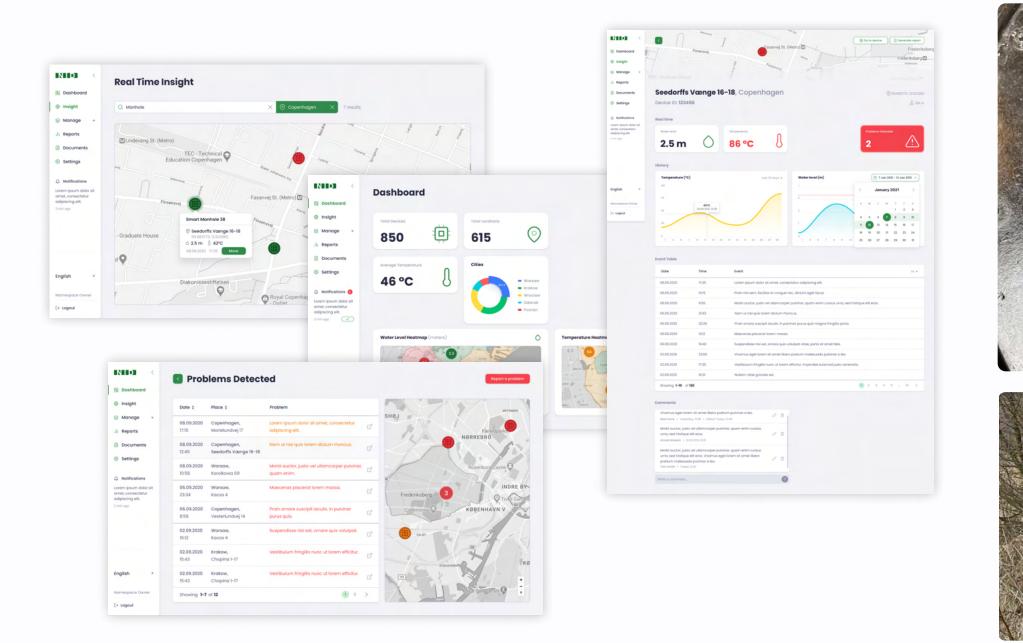
Simple yet highly advanced solution for smart water management. Enables remote monitoring of water levels and real-time data analysis from many distributed locations. Can be used to monitor water, sewage or any other liquid.

- LTE / 5G conectivity
- Smart manhole covers
- Open Data APIs
- Cloud platform & appliaction

- Cybersecurity
- Remote maintenance
- Assets management
- Wide integration



REFERENCE



https://tele2iot.com/case/connecting-manhole-covers-managing-sewage-systems/

https://www.mynewsdesk.com/se/vasyd/news/smarta-brandposter-digitaliserar-va-branschen-421248



AREA OF INTEGRATIONS

5G CAMPUS

Dedicated enterprise infrastructure to connect and orchestrate all sorts of systems and applications.

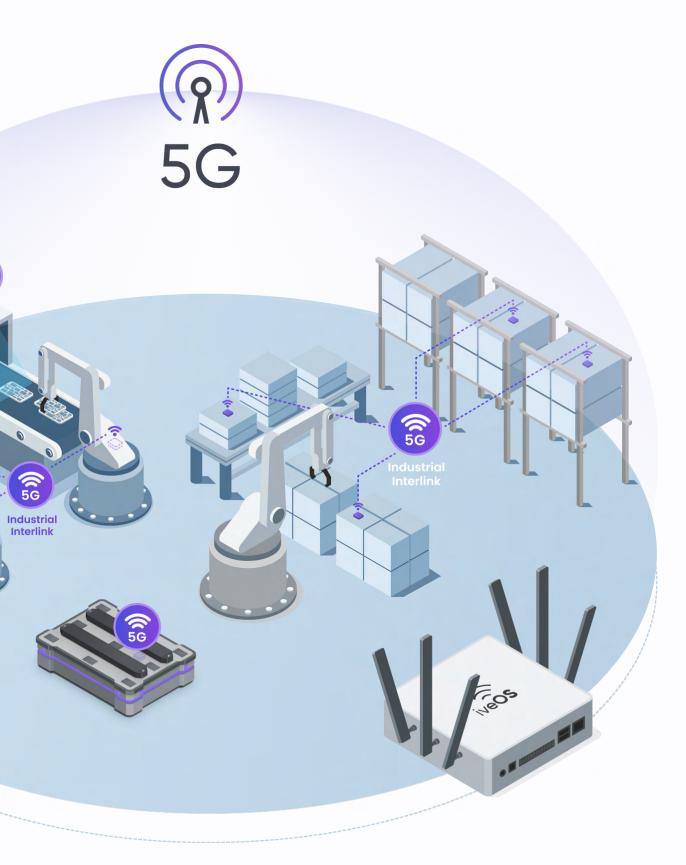
Provides extreme wireless connectivity with high bandwidth, low latency and massive capacity for IoT solutions.

Allows to digitize real-time operations with high SLA, performance, and cybersecurity.

Enables new IoT applications:

- Remote machine control
- Assets tracking and indoor navigation
- Wide range of IoT sensors all types of data collection
- Quality Assurance with HQ video analytics at edge

Industrial IoT era brings new challenges to integrate wide range of systems under the umbrella of a simple, yet comprehensive orchestration, monitoring, and control. 5G elevates innovative IoT applications to unmatched performance and reliability.



INTEGRATIONS - 5G CONNECTED COBOT

COBOT

Collaborative robot that is used for assembly operations

Save assembly and production time, increase production through automatization. The cobot is equipped with industrial sensors and 5G AI innovative device with dedicated high performance MPU for edge computing of machine learning algorithms





 \square

Automation of assembly management

Save operations time in processing

Speed up execution of actions

X

Cut labor cost









Decrease downtime losses Increase safety and security

INTEGRATIONS - 5G CONNECTED AGV

AGV

Automate and optimize the internal transportation

Save operations time in intralogistics. Collaborative and autonomous AGV safely maneuvers around all kinds of obstacles. The robot can navigate autonomously and choose the most efficient route to its destination, thanks to real time 5G data transmission





Automation of logistics management

Save operations

time in processing

X



Speed up execution of actions

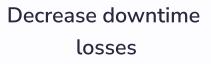
A

Cut labor cost









Increase safety and security

Note

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