5G CAMPUS EDGE POSITIONING

Enabler for more Business & Optimizations

Marc Ritter 12/2020

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Typical Scenario

ECO SYSTEM

Supplier

Logistic

Factory

Logistic

Re-Seller & Retail

| Supplier Zone | Transport Zone | Campus Zone | Transport Zone | Distribution Zone |
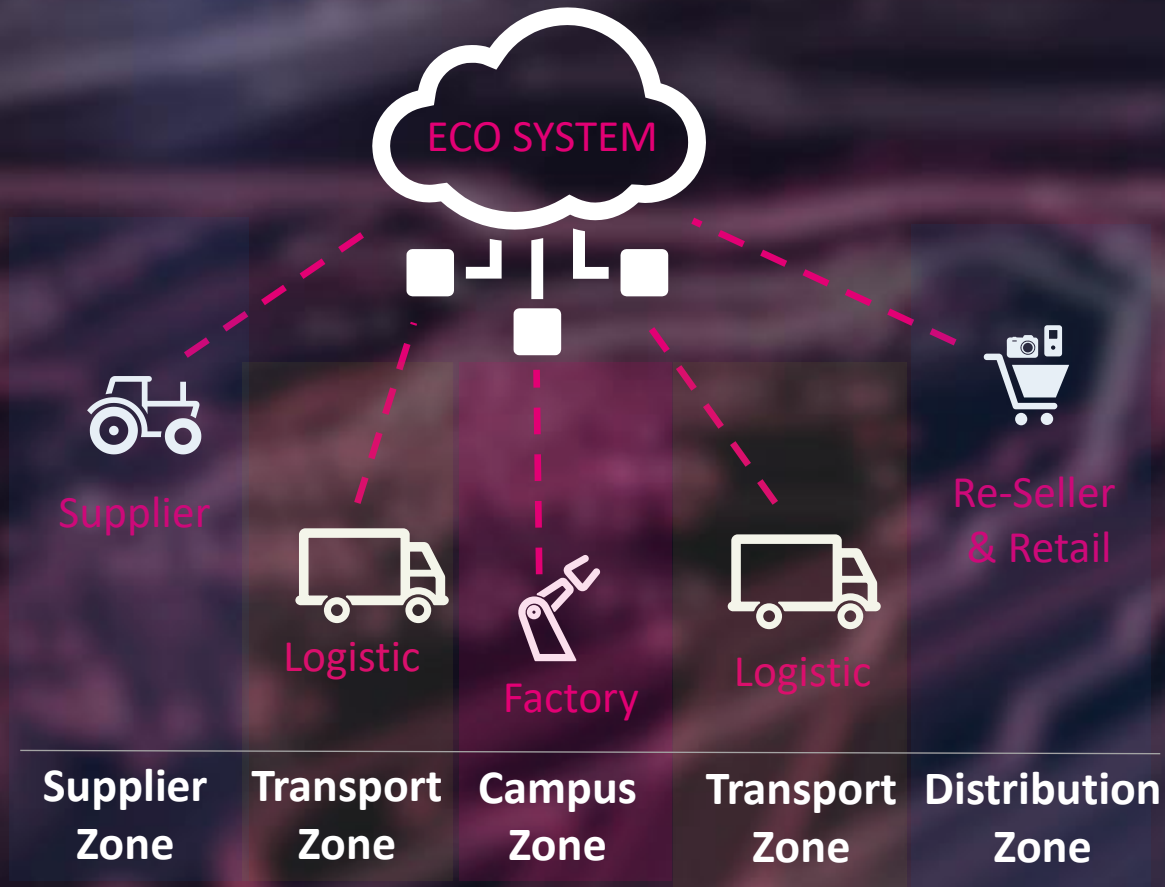
...large number of business partners

...high number of processes

... world-wide supply chains

... more than one 'campus' with var. resources in an ecosystem of various stakeholders

Key Questions

Where is the item just produced?

Where is my bus in the depot? What Lane is used?

Where is the next free charge carrier?

Where is my equipment / asset?

Where is my container in my container network?

Localisation & High Precision Positioning

Is my buffer zone filled with pallets?

Do I have long running assets?

Did my pallet leave the hall?

Is my asset in the data center?

Did the equipment reach its final destination?

Presence Monitoring

Can I optimize my process?

Can I trigger a transport request in case of process deviation?

Can it be integrated into my IT?

How to exchange data in a standarized way?

Situational Awareness & Integration

Challenges

… to get full transparency along the chain

… to optimize shop floor processes

… to optimize (paperless) processes

… to integrate solutions into existing IT

… how to exchange data in a standardized way

Approach

Dedicated Localization Solution

Campus Network

Public cellular network

- **combine existing and future technologies.**

- **choose the right technology for the future.**

- **there is quite a lot of options available**

- **5G/LTE?, BLE?, UWB?**

- **we will help.**

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Campus Edge Suite at a glance

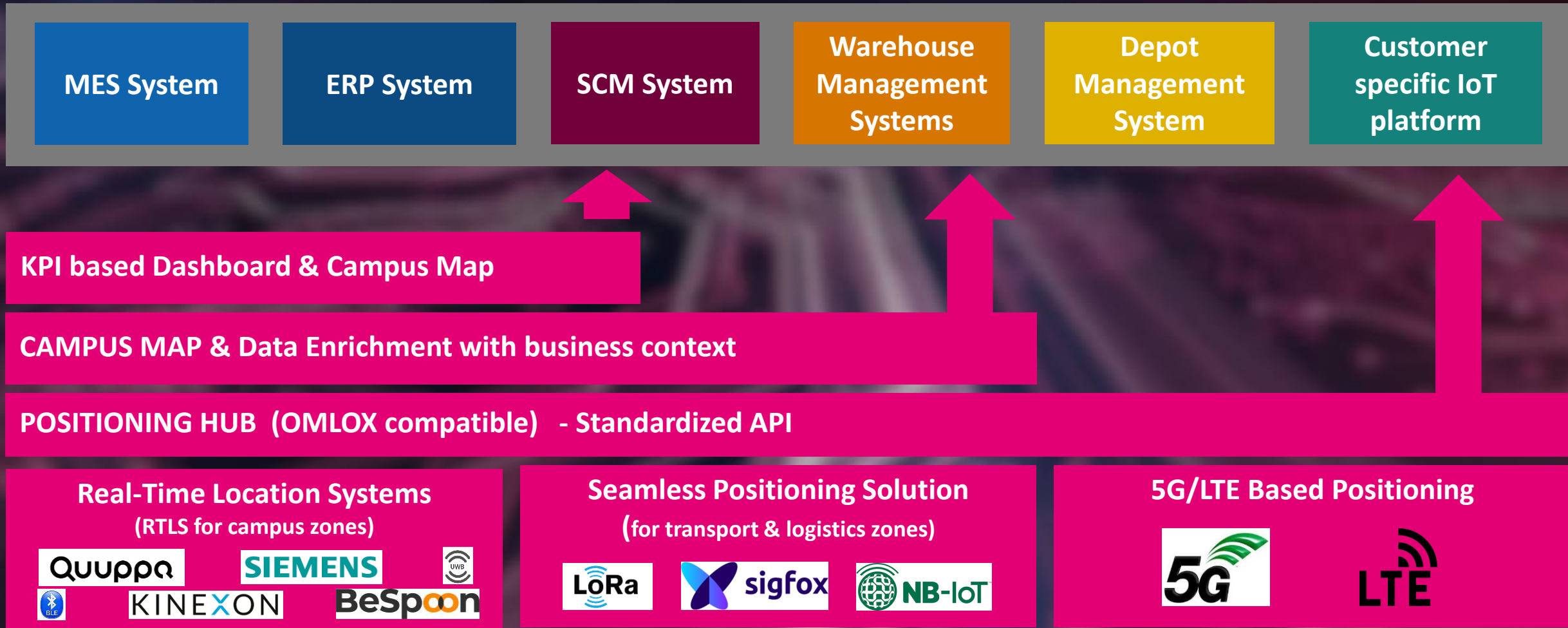| AR / VR	AGV	CAMPUS POSITIONING	Object Recognition
The AR/VR New Work Connector allows the status monitoring and control of industrial machines like Robots, AGVs and IoT devices in near real time with the help of augmented reality (AR).	Autonomos Logistics product is a flexible assets transport system (from A to B) with the capability to personalize extensions based on client's requirements, integration, monitoring and operations.	Campus Positioning Service supports multi-positioning services across all leading technologies including 5G, LTE, UWB, BLE. Via standardized APIs, additional event controlled business services become available too.	Object recognition and intelligent measurement based on computer vision. Objects of almost any kind can be recognized in video streams.

CAMPUS POSITIONING
SOLUTION – BIG PICTURE

| MES System | ERP System | SCM System | Warehouse Management Systems | Depot Management System | Customer specific IoT platform |

KPI based Dashboard & Campus Map

CAMPUS MAP & Data Enrichment with business context

POSITIONING HUB (OMLOX compatible) - Standardized API

Real-Time Location Systems
(RTLS for campus zones)

Quuppa · SIEMENS · UWB · BLE · KINEXON · BeSpoon

Seamless Positioning Solution
(for transport & logistics zones)

LoRa · sigfox · NB-IoT

5G/LTE Based Positioning

5G · LTE

...we select the proper technology

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November 2020

CAMPUS POSITIONING
VALUE SERVICE – HIGH PRECISION POSITIONING

Campus Positioning platform is OMLOX compatible, the new localization standard and provides:

- Combination of existing and upcoming localization technologies & systems
- One administration tool for designing the campus and its zone in seamless manner independent of the positioning system
- Functions supporting real-time and localization precisions up to 10 cm
- Geo-fencing, alarms, gate recognitions, presence monitoring functions
- Services monitoring KPIs (utilization, history, stock, …) to be visualized or transferred to legacy systems or dashboards or …
- Positioning Service providing standardized API for distributing localization information

• **Cost reduction** • **Paperless, documented processes** • **E2E Solution possible including RTLS, DEVOPS,..**

• **Ready for 5G an other available technologies** • **Ready to meet different use case requirements** • **Ready to be integrated in existing and upcoming processes and systems**

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Finally:
Let's talk business –
not technology

Thank you.
Questions, please.

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Interesting Links:

T-Systems Campus Edge Solutions. – YouTube

T-Systems Campus Edge-Lösungen - YouTube

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