

# Enerthing

Smart Power to Data

*5G.NRW Woche - Digitale Konferenz*

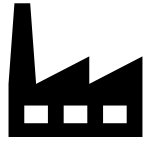
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*27.10.2020*



# Market demand & Customer Value



## Industry 4.0

### Intralogistics

- Process optimization



### Production

- Optimization
- Planning



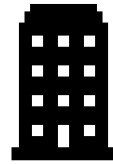
### Process

- Control
- Predictive maintenance



### Safety

- Presence detection



## Smart Buildings

### Energy Efficiency

- Demand dependent operation



### Utilization

- Room usage
- Asset localization



### Comfort

- Air Quality
- Illumination



### Safety & Hygiene

- Presence
- Hygiene



## Solution

Sensing



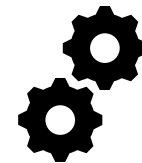
Location



Analytics



Control





# Battery-based IoT is...



~0.5mW for  
2 yrs

**Constrained in Power**



Battery replacement is  
expensive or impossible

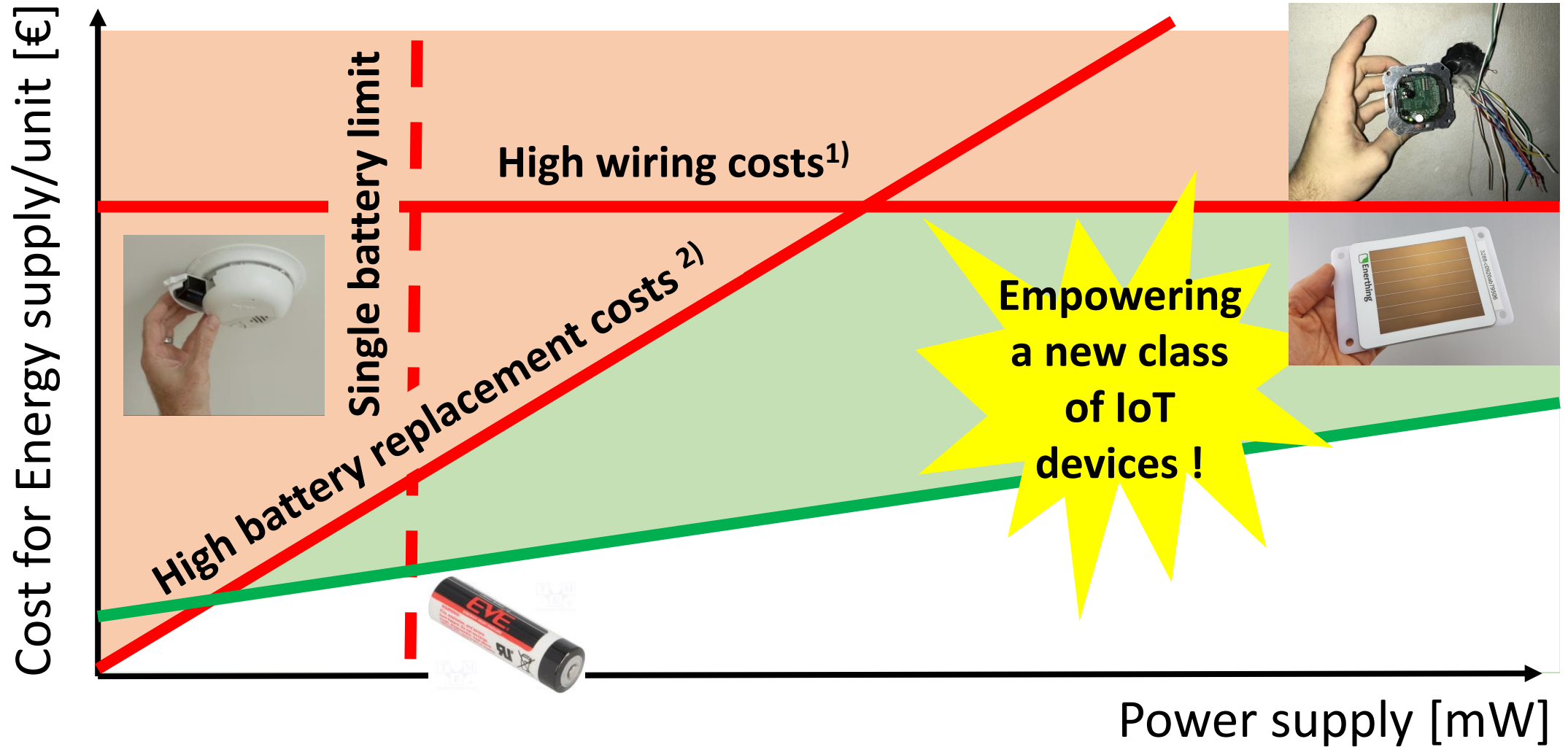
**Not scalable**



Battery- and electronics  
waste

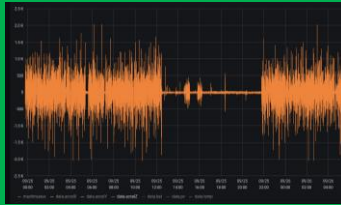
**Not sustainable**

# The Solution – New light energy harvesting



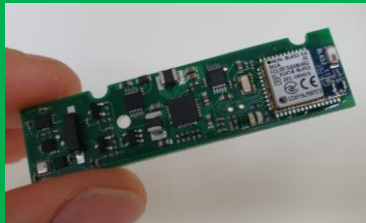
# Enerthing's IoT Platform – Smart Power to Data

## Cloud & Software



- Advanced data analytics
- Intelligent power management

## IoT Devices



- Efficient design
- Versatile multi sensor system
- Onboard processing
- Advanced power management

## Photovoltaic Technology



- Highly efficient
- Highly scalable production
- Patented
- Sustainable

High Quality Data  
Best Performance:  
Data Quality & Price

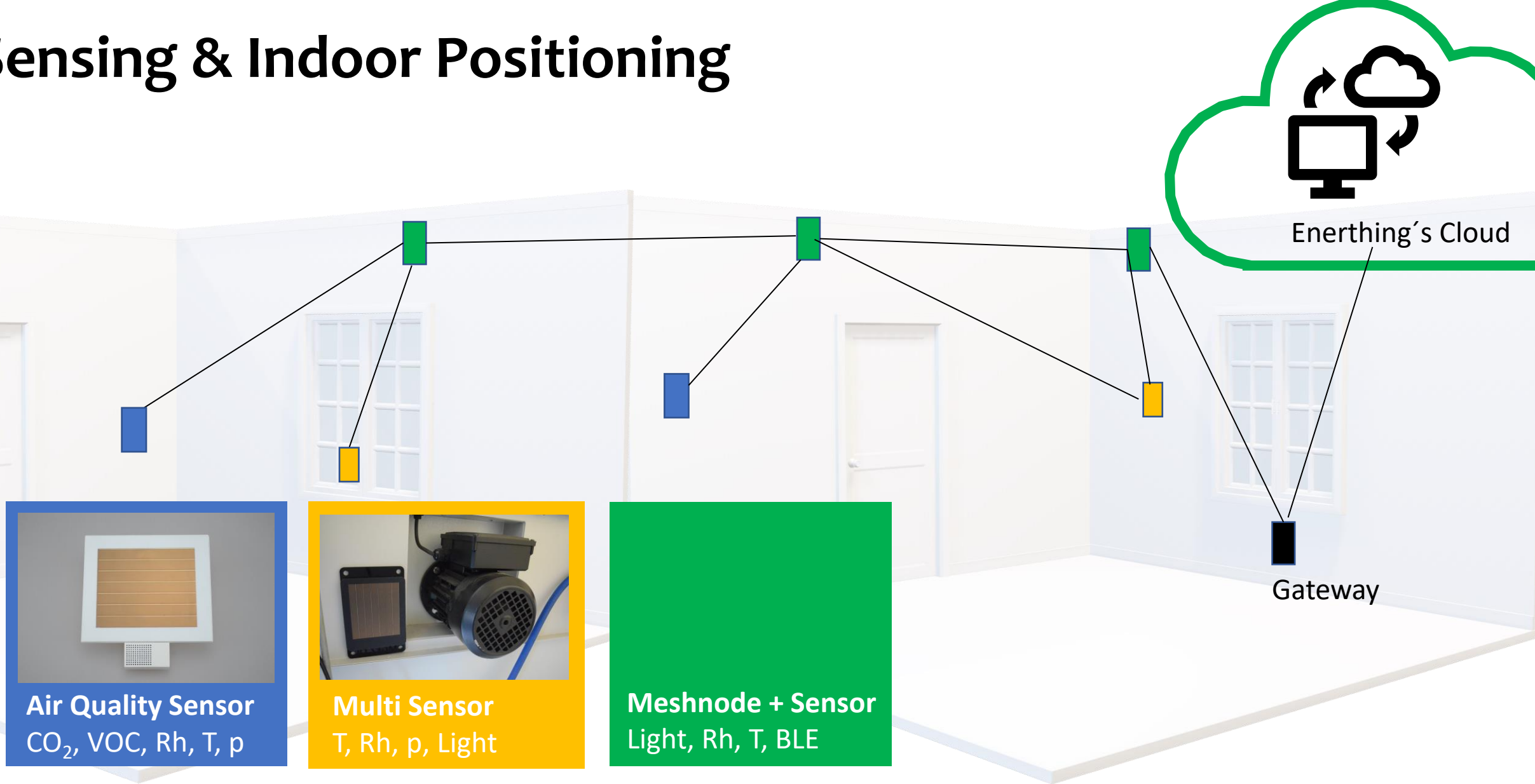


Industry 4.0



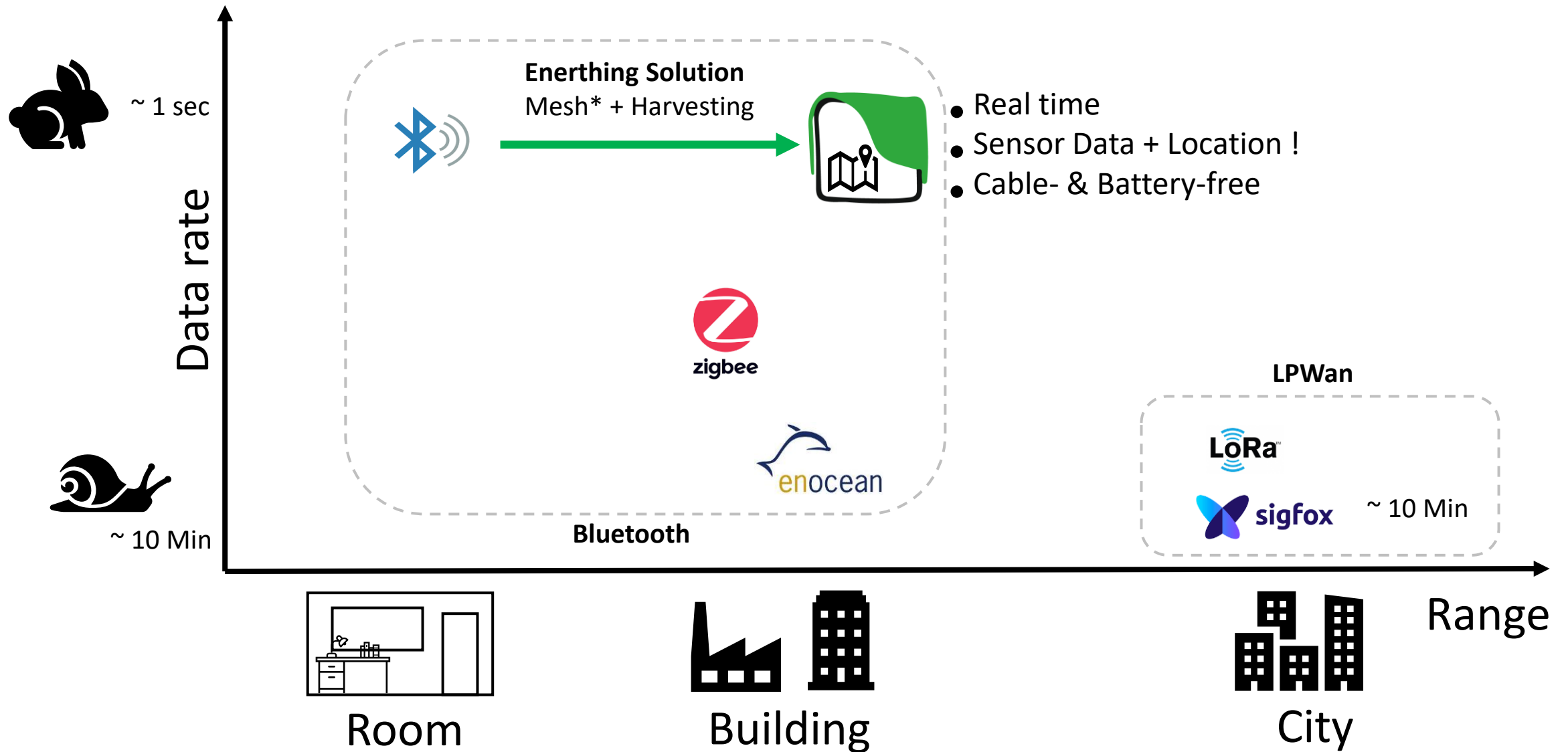
Smart Buildings

# Sensing & Indoor Positioning





# Bluetooth Mesh Connectivity



# Smart Buildings



# Back to Office – Covid19 prevention by CO<sub>2</sub> sensing



## Covid19 is transmitted by aerosoles

- CO<sub>2</sub> concentration is a suitable measure for aerosole concentration
- Basis for controlled venting



## CO<sub>2</sub> Sensor Solution

- Simple installation
- No battery replacement
- Scalable for office buildings

## Enerthing Cloud

- analytics
- power management



## Controlled venting

- Recommendations for window based venting
- Proof of appropriate venting by historic CO<sub>2</sub> data
- Connection to building control

# Covid-19 prevention by controlled venting



- Establishing effective venting procedures based on CO<sub>2</sub> data
- The risk for a Covid-19 infection can be reduced by controlled venting
- Historic data of air quality can prove good venting in case of a covid-19 infection
- Air quality data can be taken into account for classification during contact tracing

# Industry 4.0

# Use case – Machine Data Acquisition (MDA)

Digitization of hundreds of machines within a few days

- Simple retrofit
- Real time data
- No wiring or battery replacement



**Multi Sensor Platform  
powered by indoor light**

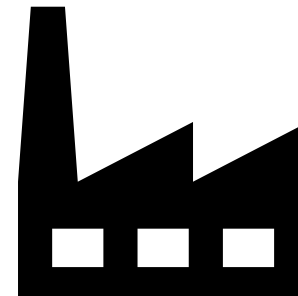


**Data &  
Settings**



**Enerthing Cloud**

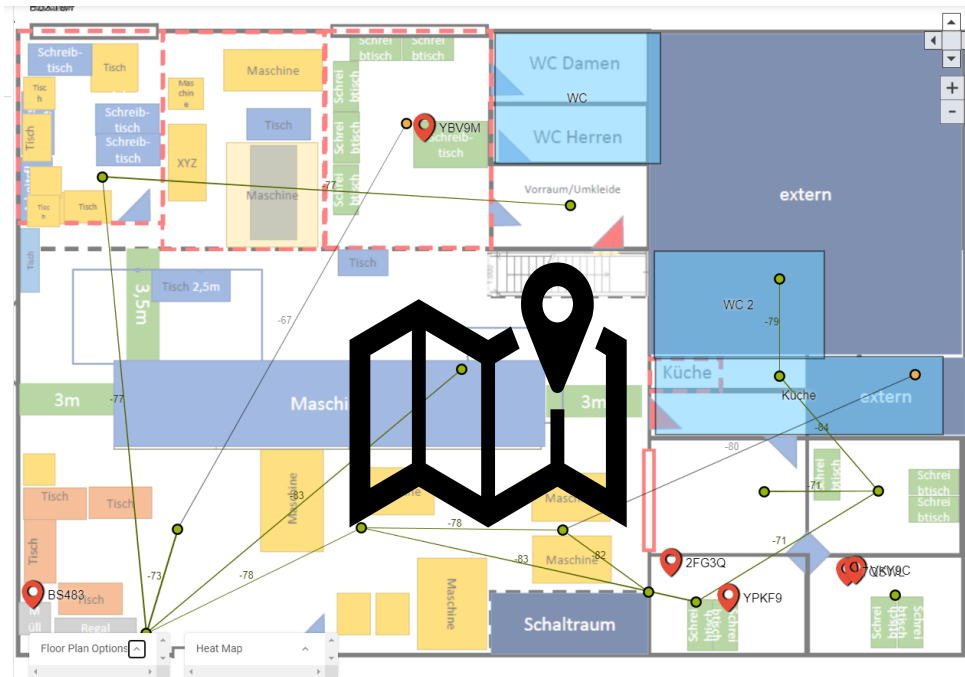
**Valuable Data**



- Machine down time
- Condition monitoring
- Product counting

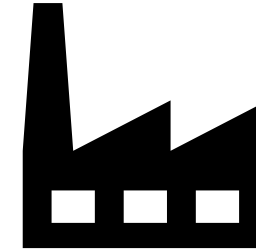


# Use case – Asset tracking



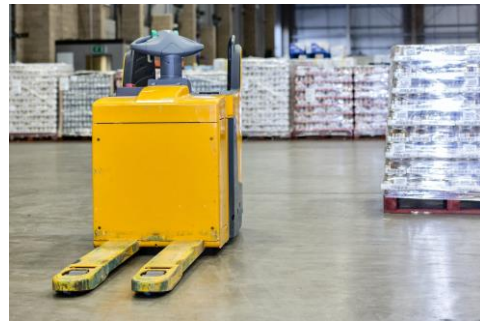
## Tracking of assets

- Less searching
- Optimized production
- Better utilization



## Asset Tag

- No battery replacement
- Additional sensors
- High performance by high power



## Tracking Solutions

- High & medium resolution (0.5m – 2m)
- Simple installation without wiring (medium)
- No battery replacement

# Relevance of 5G for massive IoT installations

- Increasing data volume is expected from wireless sensors on the shop floor
- One network is preferred over many different networks
- Data security will be highly important