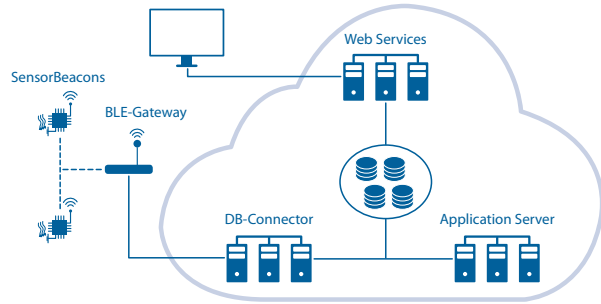
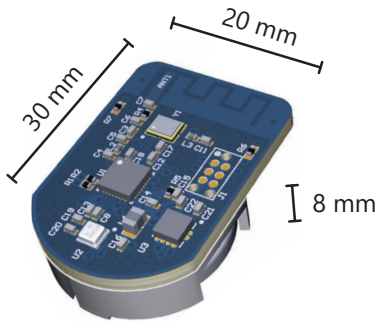


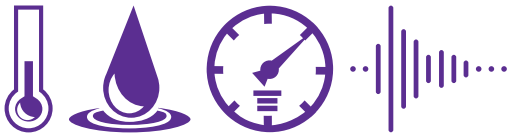
SensorBeacons & SensorCloud

New IoT Powered Concepts for Smart Manufacturing, Condition Monitoring and Predictive Maintenance



SensorBeacon

Measurement of i.e. temperature, air pressure, humidity and acceleration in three axes



Characteristics

- Wireless (battery operated, radio transmission)
- Ultra low power technology with BLE
- Indoor range approx. 10 m – 20 m
- Many beacons possible at the same time
- Easy to install and connect via gateway to IoT platform
- Battery lifetime up to five years
- Power consumption example:

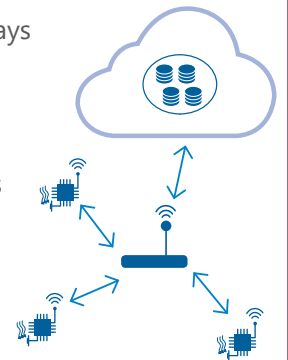
Communication Interval	Battery Life (230mAh Capacity)
1 sec.	> 8 months
30 sec	> 4 years

SensorCloud

Connection of SensorBeacons via BLE-Gateways

Small cell coverage by gateways:

- Minimization of radio interference and thus increase of possible throughput
- Flexible coverage of an area of any size
- Radio signals remain in the production hall
- Seamless roaming between gateways



Architecture – Central Data Base

- MongoDB
- NoSQL
- Supports sharding (horizontal scalability)
- Supports replication (Increased availability due to mirror server)

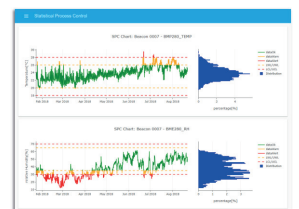
Web Interface (Client)

- Web application, runs in browser, therefore cross-platform (tablet, PC etc.)
- Safe communication via https
- Data can be quickly visualized (chart templates)
- Web applications allow complex evaluations
- Multi-client / multi-user capable

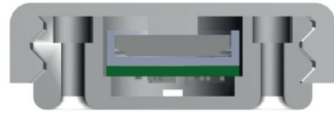


Use Cases

- Monitoring for transport & storage
- Smart Manufacturing & process monitoring
- Retrofitting of sensors to existing systems without cabling effort
- Monitoring of high-quality products during production and lifetime
- Tracking of products or mobile equipment in production
- Implementation of predictive maintenance concepts by measuring loads/abnormalities
- Simple execution of control or test measurements, even simultaneously at many different locations ...



Housings



Housings with screw mounting or magnetic fastening available

Firmware

Environmental - <Env_SBG_V2.3>

- SensorBeacon provides environmental data
Temperature: -40 °C - 85 °C (± 1.0 °C)
Pressure: 300 hPa - 1100 hPa (± 1.0 hPa)
Rel. humidity: 0 % - 100 % (± 3 %)
- Battery lifetime: 1s datarate: 4 months
60 s datarate: 4 years
- Datarate can be adapted to user requirements

Spectrum - <Acc_Env_SBG_V2.8>

- SensorBeacon provides acceleration in three axis
Resolution: 4 mg
Datarate: 50 Hz
- Beacon provides environmental data every minute
- Auto-Sleep: SensorBeacon shuts down acceleration measurement while not moved
- Battery lifetime: active mode: 2 weeks
sleep mode: 14 months

Acceleration - <Acc_Env_SBG_V2.7>

- SensorBeacon provides acceleration in three axis
Full scale range: ± 8 g (± 5 %)
Resolution: 1 mg
Data rate: 10 Hz
- Beacon provides environmental data every minute
- Auto-Sleep: SensorBeacon shuts down acceleration measurement while not moved
- Battery lifetime: active mode: 1 month
sleep mode: 14 months

Shock - <Acc_SBG_V2.5>

- SensorBeacon internally measures acceleration in three axis with 200 Hz and provides highest value every 100 ms
- Battery lifetime: 60 hours

 SensorBeacon never sleeps

Customized versions available

Bundle 1

- Access to the cloud platform and its standard routines (dashboard, visualization, data export, threshold surveillance) for 3 months
- 1 gateway
- 2 SensorBeacons (freely selectable from above shown firmware pool)
- 2 user accesses

495€
(plus VAT)

Bundle 2

- Access to the cloud platform and its standard routines (dashboard, visualization, data export, threshold surveillance) for 3 months
- 2 gateways
- 10 SensorBeacons (freely selectable from above shown firmware pool)
- 5 user accesses

1.152€
(plus VAT)

FuehlerSysteme eNET International GmbH
Roethensteig 11
90408 Nuremberg
Tel: +49 911 37322-140
Fax: +49 911 37322-111

www.fuehlersysteme.de
industrie4.0@fuehlersysteme.de



FuehlerSysteme eNET International
The Brand for Sensor Technology