

MYNXG® TRACOSENSE M2M MAKE YOUR PRODUCT SMART SOLUTION

The key for the creation of better services towards the customer is answering basic questions about the usage of the products. The MyOmega “Design Thinking” process is focused to create true value by providing improvements for the customer products and the complementary services around the products. MyOmega “IoT solutions” are creating digital values by providing measurable product improvements.

TracoSense M2M is designed with two lead customers:

- World market leader for pumping solutions, the goal is to offer better services around the pump, transparency about the usage of the pump, better control of the important spare part business, creation of maintenance and design services.
- Innovation leader within the food industry, who wishes to improve the services towards its customers, to control the transport of the food, to improve the fleet management of its “barrel containers” and to control the “Kanban Processing”.

The MYNXG® TracoSense M2M offers a product monitoring solution that solves:

- Monitoring of products during the entire product lifecycle.
- Acquisition of key data and product states out of any location.
- Lowest possible operation and communication costs.
- Predictive maintenance and improved customer services.
- Remote maintenance and Over-the-Air system updates

MAKE YOUR PRODUCT SMART CASE FOOD / BEVERAGE

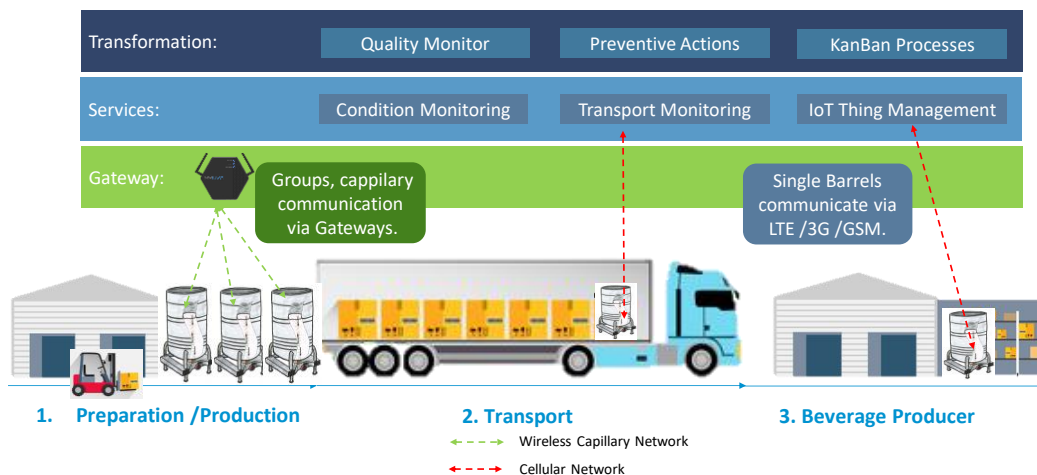


Figure 1: TracoSense makes your product smart, example food / beverage containers

TracoSense M2M offers a smart service portfolio to control food /beverage containers:

- Transformation processes including quality control, preventive actions in case of failures and a managed “Kanban” are available within the ERP system.
- Condition logs of temperature, air pressure, humidity values are available at any point in time.
- Intelligent gyro, magnetic and tilting sensors register movement of the barrels.
- Transport monitoring provides the location information of all goods, during the processing, at transport and during the consumption at the customer.
- The containers report the fill level during production and consumption to allow a better prediction of the Kanban process, this results into a better fleet management.
- MYNXG “Thing Management” provides access to the containers at any time.

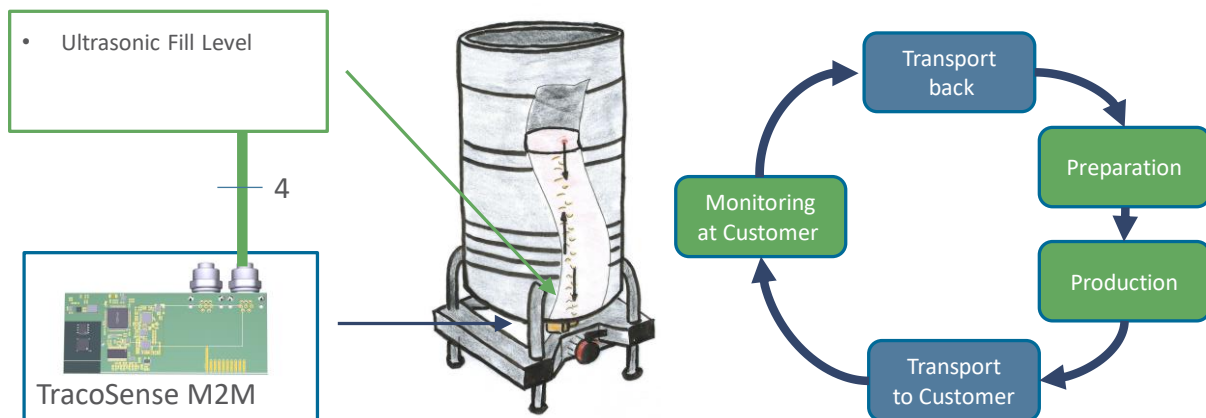


Figure 2 TracoSense M2M adapting intelligent sensors

TracoSense M2M® is the key to provide unique services:

- TracoSense® is utilizing different ways to communicate.
 - Capillary, free communication via gateways, for any bulk of containers.
 - Communication, towards the service layer via LTE,3G, 2G whenever needed.
- TracoSense is intelligent and recognizes the status with the help of the digital sensors.
- A typical Kanban process could be: during the preparation, the sensor is recharged and mounted. After the barrel is lifted, the sensor is awaiting that the barrel will be filled. The fill level is monitored during the filling process. The container is waiting before transport, during transport the container reports frequently the location on the transport route. During the consumption at the customer site, the fill level is monitored, after the barrel is empty the transport back is supervised.
- The fill level is monitored via an ultrasonic sensor, the “time of flight” from the sensor at the bottom of the barrel, to the reflecting surface and return is measured and the fill level is calculated.
- MYNXG service layers offers a cost optimized solution, only the barrels that utilize M2M (LTE, 3G and 2G), are charged with mobile rates, while all other barrels consume less monitoring costs, this is possible through a specific MYNXG tariff structure.

MAKE YOUR PRODUCT SMART CASE PUMPS

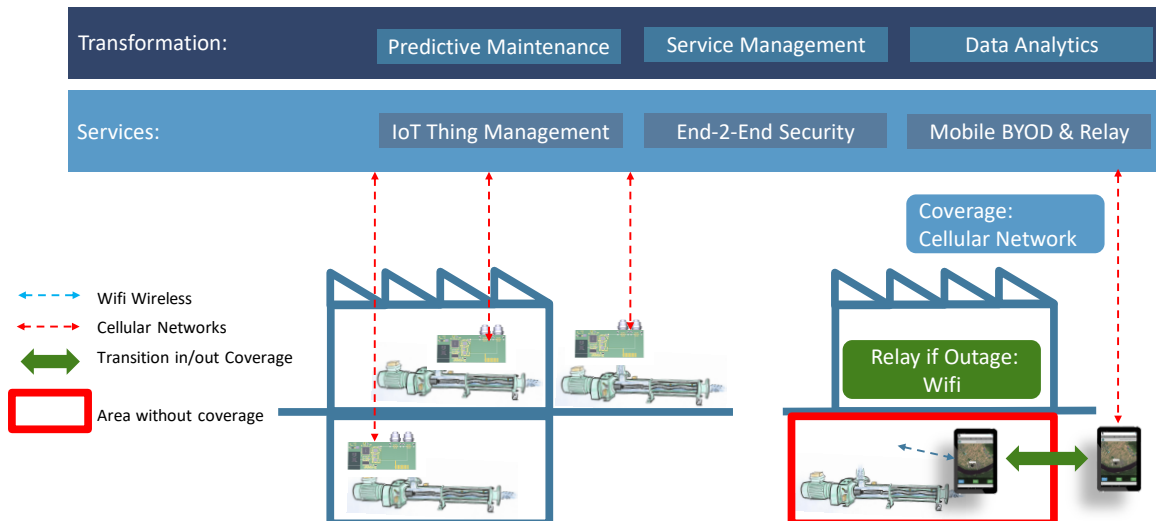


Figure 3 TracoSense M2M, Monitoring of Pumps

TracoSense M2M solves additional challenges:

- The pump is usual a part of a bigger hosting system. Typical this system is very well managed and control data are available at the system control of the hosting system.
- The pump manufacturer could provide however better services and higher benefits to the host, if he could get more and better data about the pump.
- The pumps are very often installed and managed by third parties. The manufacturer of the pump does very often not even know the location, the medium he pumps nor the conditions.
- Progressive cavity pumps are requiring maintenance and spare parts. This maintenance and spare part services could be customer and usage tailored, provided through the manufacturer.
- Very often pumps are located multiple floors underground without any mobile coverage.

The TracoSense M2M® Sensor is changing the game:

- TracoSense® is providing End-2-End security through “Trusted Platform Modules”, a “small electronic safe” that hosts the sensor specific keys.
- Specific secure protocols and a full ISO 27001 based security solution offer a reliable basis that ensure host systems to be fully End-2-End secure.
- Based on this trusted system, the TracoSense M2M is operating fully self-sustained, power is provided at the motor of the pump, all sensing is done fully isolated, the solution communicates End-2-End secure towards the pump manufacturer.
- No production or operation secrets of the host are reported, only pump relevant data, the location and the load of the pump. The data is offered by the manufacturer of the pump towards the host, including newly developed service packages.
- Data analytics and service predictions are created towards the host, allowing the host a better prediction of his service needs and costs.
- Service applications provided, on standard tablets linked with the existing ERP systems, allow services. The host service personnel, can access data even at the pump, 3 floors below the ground level, take the data via “RELAY” and report the data into the system.

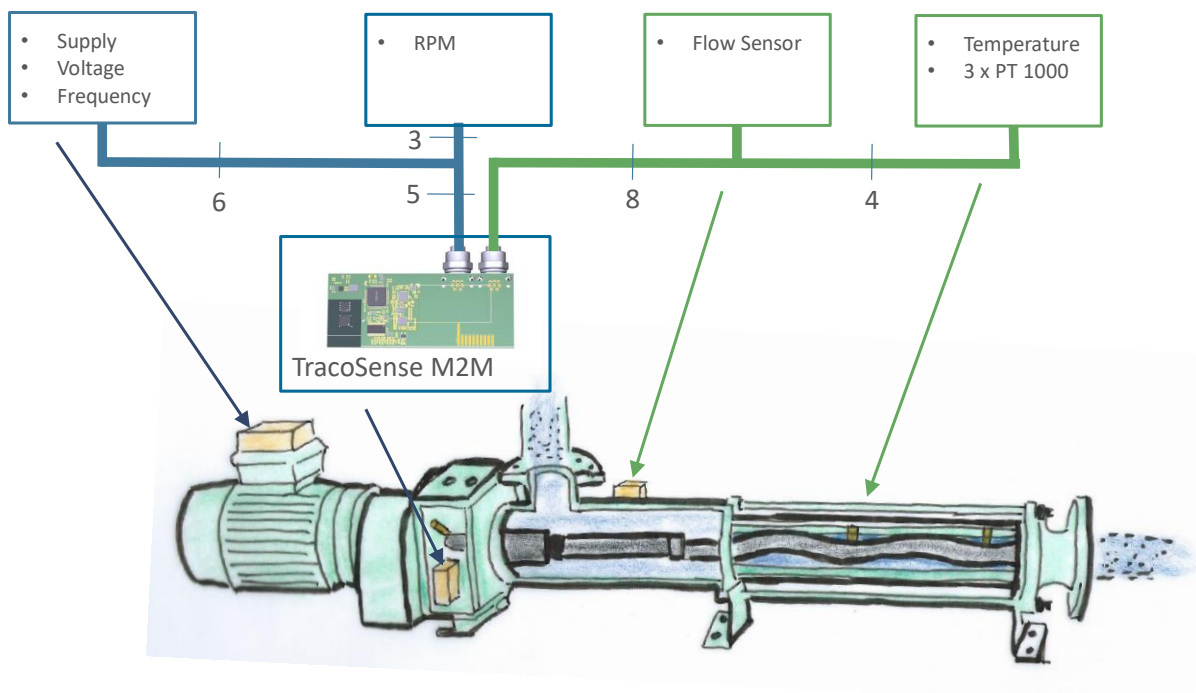


Figure 4 TracoSense M2M fully autonomous installation at a progressive cavity pump.

TRACOSENSE M2M

The entire TracoSense® is built on MyOmegas world leading sensor know how and MYNXG® US patented IoT and network management technologies. The solution utilizes for the Industry 4.0. SAP HANA as the ERP system of choice.

- Fully autonomous sensor solution.
- Adaptive sensor for smartest power management and lowest possible operational cost.
- Rechargeable battery or power supply through “satellite boards”.
- 3-way communication:
 - Capillary free ISM band to communicate via gateways;
 - Cellular LTE,3G,2G to communicate direct to the cloud
 - or wireless “Relay” via WIFI and mobile.
- Battery operation with up to 6-month standby time.
- End-2-End Security based on Trusted Platform Module (TPM).
- Processing power through ARM Cortex M4 CPU.
- Digital on board sensors to control the TracoSense M2M operation.

Digital Sensors for Movement, Gyroscope, Temperature, Humidity, Ambient Light.

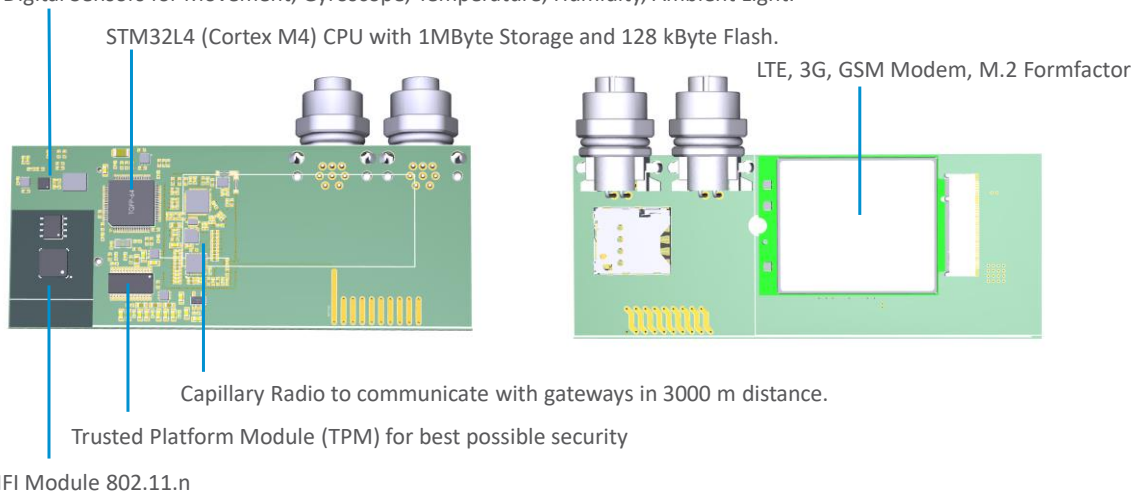


Figure 5: TracoSenseM2M Solution, smarter sensors for products and processes.

MYNXG TracoSense M2M basic kits and solution elements:

- MYNXG TracoSense M2M industrial grade IP65 dust and water protected sensor.
- MYNXG TracoSense M2M Dimensions 110 x 60 x 55 mm (L,W,H).
- MYNXG TracoSense satellite boards to measure parameters of e.g. asynchronous motors.
- MYNXG TracoSense SW for Android® Mobile Tablet or Phone.
- MYNXG TracoSense SW package to connect your product via SAP as a Service.
- MYNXG Service Layer to create worldwide coverage at minimum operational expenses.
- MYNXG Gateways to provide smart edge computing solutions.
- TracoSense M2M support to create, install and operate your IoT solution.

MYNXG Design Thinking:

- MyOmega offers “Design thinking” workshops and tailored solutions for your needs. We are the agile development partner for your IoT Industry 4.0 solution.
- Please contact MyOmega to create more value out of your products.