



MANUFACTURING SME AND CHALLENGE

Improve Energy Efficiency with related reduction of energy bills in buildings and factories and monitoring of the manufacturing process through IoT gateway



Product quality assessment by using a distributed control network and implementing complex sensor fusion, quality prediction and defect detection algorithms



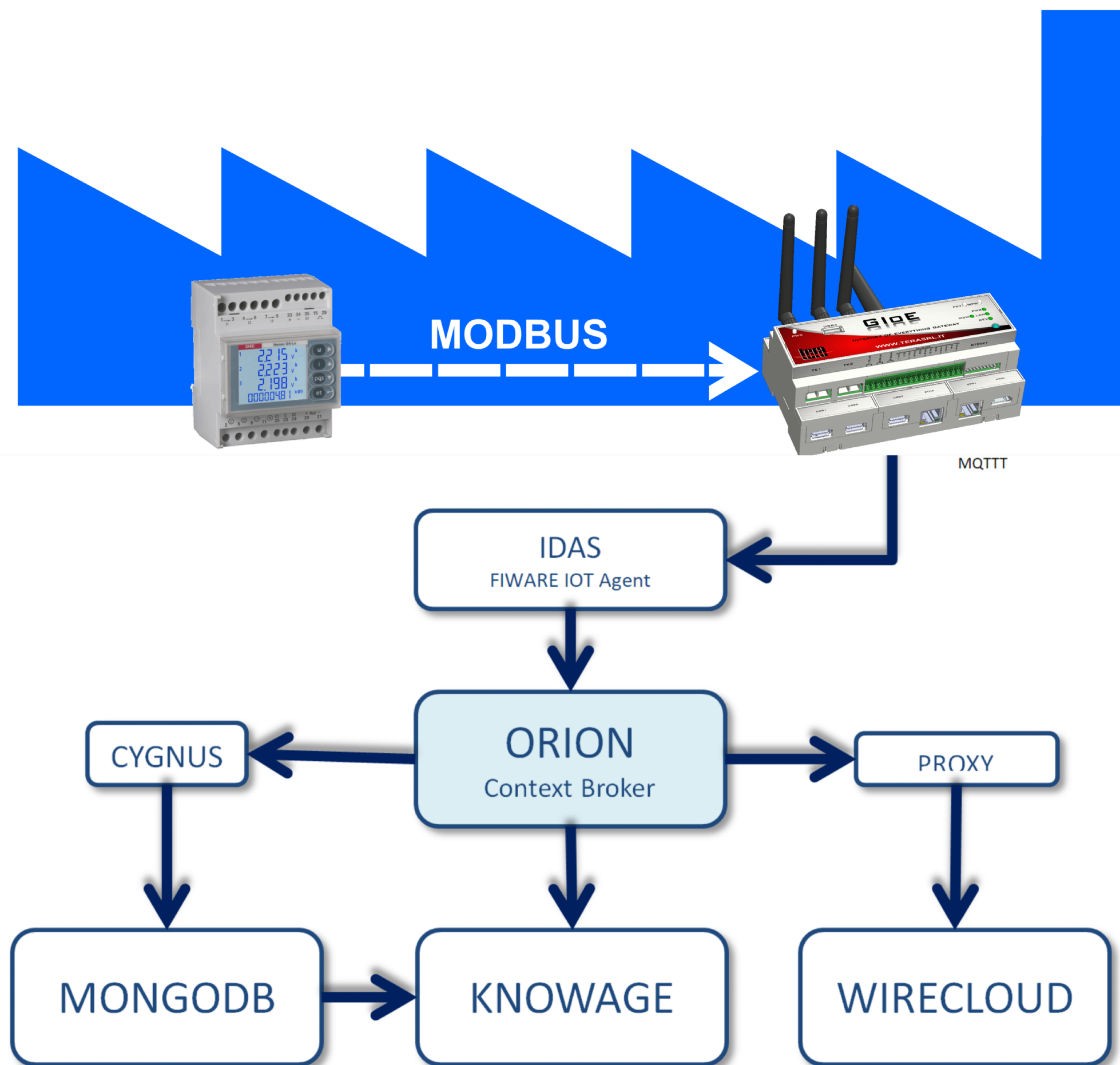
SOLUTION: ARCHITECTURE AND COMPONENTS

The IoT sensors, capable to acquire different data from the machines present in the field.

The GloE Smart Gateway can communicate bidirectionally (MQTT protocol) with sensors and actuators and can be used in different application fields, by implementing the concept of IoT / IoE.

The MIDIH platform, capable to collect, store and analyse the data gathered from the other tiers, giving feedbacks in order to improve the energy efficiency of production steps and alarms based on expected consumptions, production times and production quality.

Based on the presence of the components described above, the general architecture of the DELTA system has been defined following a two-level structure based on the Data in Motion (Industrial IOT) and Data at Rest (Industrial Analytics)

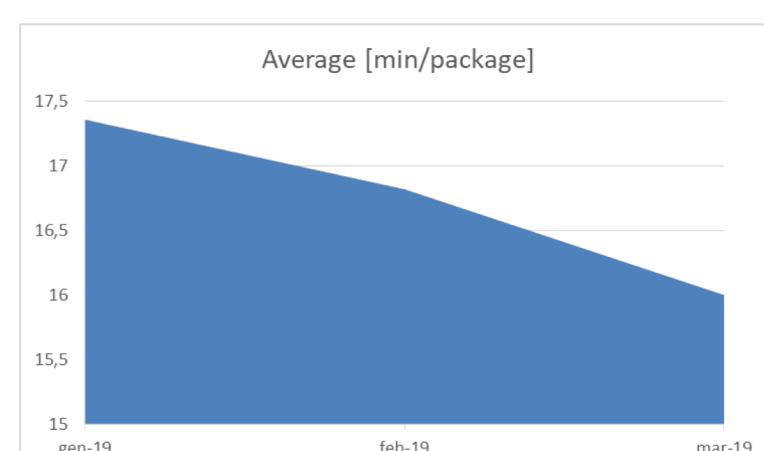
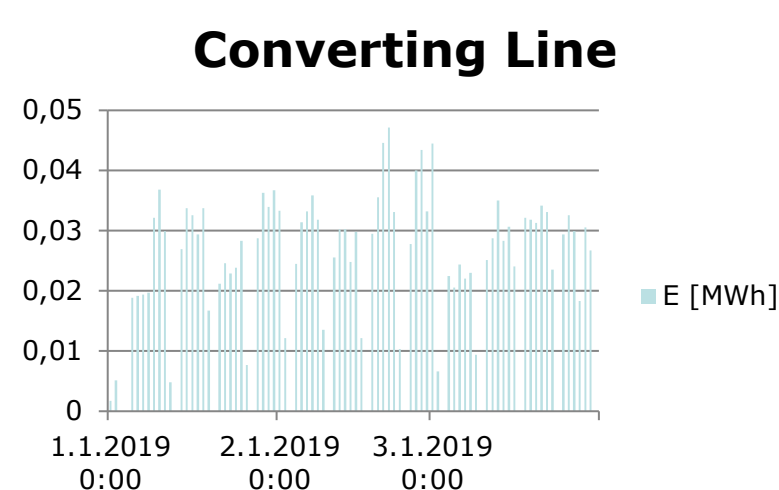
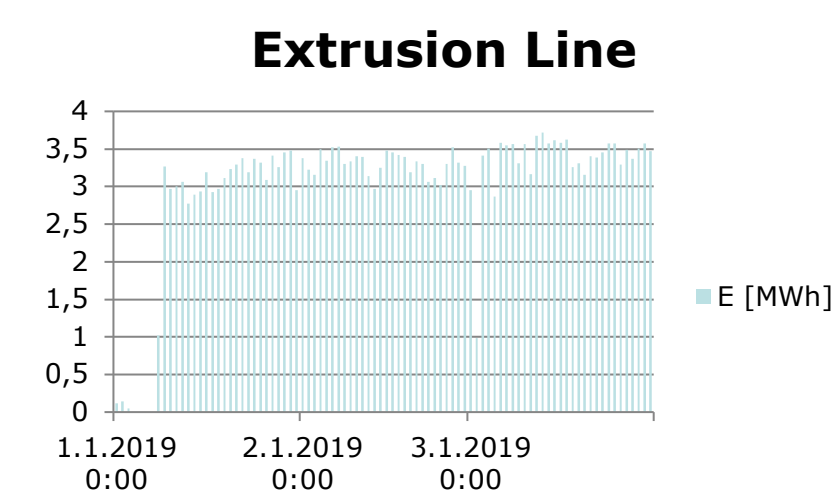
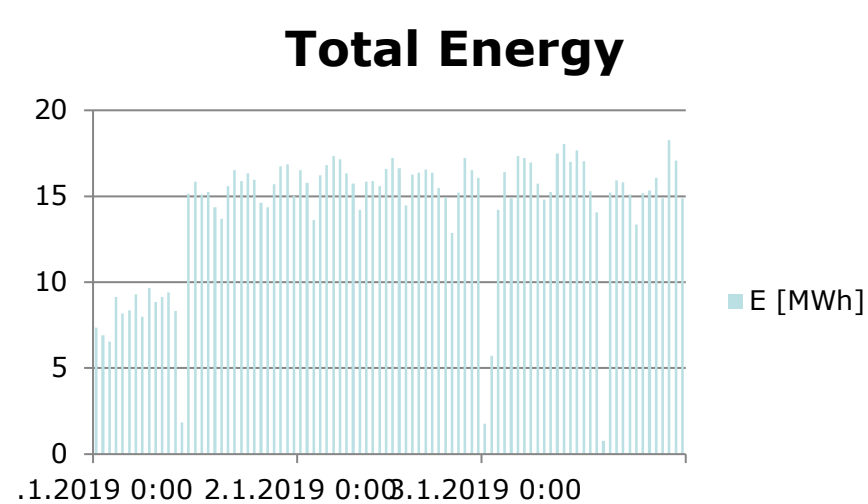


BENEFITS AND LESSON LEARNT

Cyber-Physical Systems provide a valuable benefit in the energy monitoring of manufacturing processes;

Cloud-based solution obtained by the integration of reliable frameworks and tools (like MIDIH components) were of great assistance during the development of the experiment system application for energy efficiency of the production line;

In industries with a production line inside of them, open systems like MIDIH still suffer from the internal security policies and the installation protocols.



OUTLOOK

Enlarge the time for experimentation until one year to retrieve more significant data

The growth of IoT solutions will help industries and SME to:

- ✓ reduce waste rate of non-confirming finished product
- ✓ reduce global energy consumptions of the predictive live/maintenance
- ✓ Improve the awareness about energy efficiency monitoring