IDP: IOT Architecture Design for the Construction World 4.0

Initial situation

The digitalization and networking of construction sites interlocks the construction industry with a current annual turnover of approx. 107 billion euros, telecommunications with a turnover of approx. 60 billion euros and construction and building material machines with a turnover of approx. 14 billion euros. The establishment of smart products and services for tapping efficiency potentials and developing innovative business fields is a central field of action in the technological leadership of Industry 4.0. If the construction site processes would be digitalized to the 4.0 approach, then all material flows, machine movements and equipment stocks on the construction site are to be recorded. This could only be done via the Internet of Things (IoT) for the objects. Here is the value of the objects clustered, i.e. more complex hardware and sensors could be used for expensive objects. Cheap items must be traceable with low-cost technology like barcodes.

Objective

IOT architecture consists of different layers of technologies supporting IOT. It serves to illustrate how various technologies relate to each other and to communicate the scalability, modularity and configuration of IOT deployments in different scenarios. As mentioned in the initial situation, the needs from construction industry for technologies and for IOT structure differ from other industries i.e. automobile industry. In this IDP study, we would like to discuss and develop an IOT architecture specially used for the construction industry. As foundation, analyzed requirements from the construction industry would be offered and the hardware solutions from state of art to the technology in the future are available.

Requirements

- Reliability and Engagement
- Independent and structured way of working
- Interest in researching and developing IOT solutions
- We would recommend the visit to our lecture material flow and logistics to get the basic principles of logistics.

Contact

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