Digital Twin of an outdoor Warehouse system in Construction 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 material machines with a turnover of approx. 14 billion euros. The establishment of smart products and services for enhance efficiency 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 more digital methods like digital twin should be applied to the construction site.

Objective

Different from the stationary industry, the construction companies always have an outdoor “warehouse” on the construction site to restore the building materials. To digitalize the process, diverse IOT technologies have been tested under different scenarios. One of the most efficient and economical methods is the RFID application. Combined with the GPS technology, the current information could be communicated with the digital twin of the warehouse in the cloud. In this IDP study, we could test the approved IOT technologies together. Then we would check up a Web based digital twin of the warehouse in a construction company. After that, further development should be made on its back end. Finally, the application should be transferred from a public server to a secured server.

Requirements

- Reliability and Engagement
- Independent and structured way of working
- Interest in researching and developing IOT solutions
- Interest to learn or have experience in Back End development

Contact

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