

CASE STUDY

Material Tracking for Manufacturing



Use case for Real Time Location Systems from NEAA member, Virtual Manufacturing



SULZER

"The journey to achieve digital transformation is made up of discrete steps which use technology as an enabler. The challenge for this project was to deliver a cost-effective solution which allowed Sulzer to see, in real time, where "work in progress" and other assets are in the long, engineered to order, manufacturing process. Now we've solved the immediate problem we can start to add additional value by analysing the millions of data points to assess where the next improvement opportunity could be."

Andrew Percy / **CEO** / **Virtual Manufacturing UK Ltd**

"We selected Virtual Manufacturing to deliver our material tracking solution due to their understanding of our needs and their ability to work collaboratively on a solution. From Day one after commissioning, we achieved our objectives and we're now starting to explore with Virtual other areas where we can expand functionality and get more insights from the data generated."

Andrew Anderson / **Head of Planning & Scheduling** / **Sulzer Pumps**

Background

Sulzer Pumps is a manufacturer of rotating equipment for the energy industry. As a manufacturer of "engineered to order" pump packages, their factories handle numerous unique components being worked on across the entire shop floor before final assembly. Project lead times can be lengthy, and operating a just-in-time supply chain presents operational challenges.

As a consequence, Sulzer asked Virtual Manufacturing to develop a solution that allowed components, and other assets such as forklifts, to be tracked in real time.

Approach and Solution

Working with its hardware partner, Quuppa, Virtual Manufacturing developed Gazpacho Material Tracking to solve Sulzer's operational challenge.

Given the need for low latency coupled with high accuracy Quuppa hardware was selected. This hardware utilises a unique blend of Bluetooth Low Energy (BLE), Angle of Arrival (AoA), and Angle of Departure (AoD) methodologies, alongside advanced location algorithms developed over more than 15 years.

Virtual Manufacturing then created a customised front end to integrate ERP data with location data. By merging these data sources, this enabled the facility to pinpoint items based on user queries such as 'where are all the components associated with Project X' or 'where is the shaft for Project Y.' This solution delivered the initial project objective of "deliver a solution that helps locate components in real time".



GAZPACHO

DIGITAL TWIN

Outcome and Advantage

Sulzer was highly pleased with the solution and the resulting cost savings, prompting them to expand the pilot to encompass three additional factories. The scope was also developed to allow operators to trigger a digital Andon, allowing supervisors to pinpoint the location of employees requiring support.

What's next? Virtual Manufacturing is now looking at further development opportunities to support manufacturing analytics, with two projects currently in the pipeline. Firstly, examining the utilisation of historical tracking data to generate factual spaghetti diagrams to support improvement activities. Secondly, exploring how to leverage data science to analyse vast amounts of ERP and Material Tracking data to unlock potential future improvements.

• **Strategic Direction** • **Route to Market** • **Capability Improvement** • **Knowledge Transfer** • **Sector Engagement**

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