

Delivering Mixed Reality Innovation to Smart Manufacturing

COMPANY

SCRI-IS

SCRI-IS Technologies offers life asset management services of critical equipment within the bio-pharma industry as well as accelerated life testing, material selection, reliability strategy set-up and on-site training.

The company provides comprehensive experience which ensures that their clients always have the skill sets and knowledge at their fingertips to optimise production capacity, future proof their facility, and deliver projects on time and in budget from a single source.



SCRI-IS
TECHNOLOGIES



Scri-Is Technologies



www.scriis.com

WHY?

PROBLEM TO BE SOLVED

Many Biopharma plants have a large scale of installed valves (5000 or more). Each one needs to be serviced, maintained and documented correctly to avoid problems. The cost of failure is high, but the cost of maintenance is also high. It is estimated that 50% of maintenance activity is consumed by soft parts change out.

Elastomers are rubber-like materials that are useful components within valves as they are flexible and elastic. They ensure that there are tight seals between hard metal surfaces. Elastomers prevent leaks and separate fluids that should never come into contact. Over time, and with harsh temperatures, chemicals, and pressure cycles they are subjected to degradation, elastomers can become brittle and deformed and can fail. They need to be exchanged (ECO service) well before there is a risk of failure, as the consequences could lead to contaminated products or a dangerous breach of the system (Health & Safety). There is a clear need for cost saving measures towards improving the ECO service, where it has been identified that Digital Twin and Mixed Reality technologies could be leveraged to address some of these challenges.



Figure 1. Testing Mixed Reality Digital Twin App in Nimbus Extended Reality Innovation Lab

HOW?

INNOVATIVE SOLUTION

Nimbus researchers explored the convergence of Digital Twin and Mixed Reality technologies. Through the project lifecycle the Nimbus research team demonstrated how preventative maintenance services could be enhanced through a Mixed Reality experience, offering richer mobility, visualisation, interactivity, and data intelligence supporting technicians working in Biopharma.

Nimbus created a mixed reality digital twin application for Hololens 2, where we can display instructional and critical information to field technicians as they service the equipment. A key feature of the Mixed Reality application was to query, gather and publish real-time sensor data associated with mechanical aspects of valves as to support Service Technicians working within Biopharma managing the service provision associated with ECO (Elastomer Change Out).

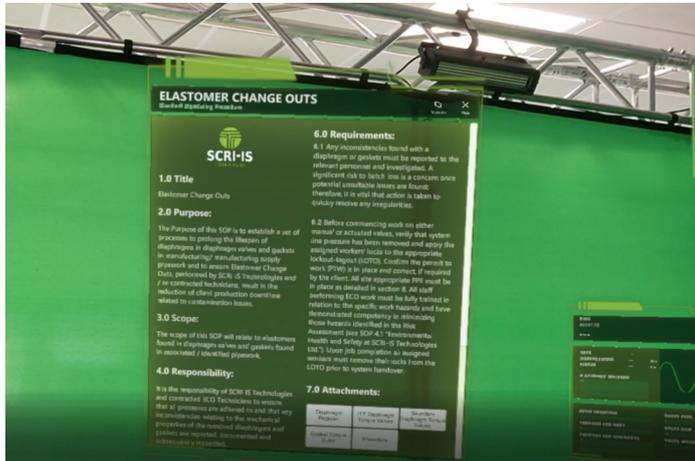


Figure 2. First person view of the Mixed Reality App during interaction and visualisation of Digital Twin 3D model and telemetry data.

IMPACT FOR THE COMPANY

Through leveraging from and developing state of the art Mixed Reality Digital Twin applications Scri-is could envisage the transformative impact such innovative research will have for the pharma manufacturing industry, where their customers can capitalise with significant value in cost and operational efficiencies. This project will allow the client to provide better tools for their technicians in both training and operational phases by also enhancing health, safety and efficiency



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WHAT OUR CLIENT HAS TO SAY

CLIENT TESTIMONIAL

"The Mixed Reality Digital Twin project we worked with Nimbus on became a long sought-after reality for SCRI-IS Technologies as we have been wanting to bring this technology into the bio-pharma industry for a number of years. Kevin, Andrew, Robert and Manuel were all fantastic to work with. They provided us with extensive information on how we could achieve our goals, and how each member of the team were going to deploy their skills by working on individual aspects of the project, ultimately combining them to the finished product we see. All going well, we would love to collaborate again on future projects, as we know that the high standards of work is a key attribute of each member".

Aidan Carroll, Quality Service Manager, SCRI-IS Technologies