

A path to Operational Excellence: Multi-Purpose Dynamic Simulation with 3D Immersive Technology

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Summary

Dynamic Simulation has evolved over recent years. This has enabled simulation technology and Multi-Purpose Dynamic Simulator (MPDS) to be applied widely. The next generation of simulation uses 3D immersive technology integrated into the core MPDS of the process. This enables the view of the external operator to be simulated with that of the control room operator, creating a unique platform to support integrated operations.

This presentation outlines how the MPDS of a process can be used for different activities, integrated with 3D immersive technology to achieve operational excellence.

Problem

The MPDS will assist with process design and support engineering case studies. It will then evolve to assist in the development of operational procedures, before testing the DeltaV System. Resulting in a faster commissioning, reducing the overall schedule. The system can then be used for training, assessment and maintenance support.

Solution

The MPDS is developed then integrated with a replica of the DeltaV System. Providing a realistic representation of the process in a simulated environment. The 3D technology, based upon actual design data of the facility is then connected into the DeltaV System. All components are integrated using OPC, providing a robust and versatile MPDS.

Results & Benefits

Benefits are quantified into two areas, those related to operations and engineering. They include identifying operating constraints at the conceptual design phase,

commissioning tool. Providing competency & abnormal situation management tool. Will also provide familiarisation with the plant via 3D technology and integrated operations with the production asset, supporting operational excellence.