Capital Project Execution
Case Study

SLM®
Safety Lifecycle Manager

The Digital Approach to Capital Project Execution

Introduction

There are several areas where Capital Project Execution has failed to modernize and take advantage of technology in the areas of HAZOP, LOPA, SIL Assessment, and SIL Design.

Traditional, stand-alone tools are independent, rely on manual data transfer, and are managed across multiple Engineering discipline. Current tools have become costly to maintain and may no longer be competitive compared to similar Commercial Off-The-Shelf tools.

Objective

The Client decided to evaluate continuing to use the current work process and technologies versus planning for their eventual retirement by moving deliberately and strategically toward a fully integrated safety life-cycle tool in accordance with their quest for digitalization.

The expected outcome were efficiencies gained for managing Capital Project Execution Activities in compliance with IEC 61511 full safety life-cycle requirements via a non-proprietary, commercial-off-the-shell software.

Challenge

Limited access to relevant evergreen data	Poor data quality assurance practices	Limited visibility via reliable reporting

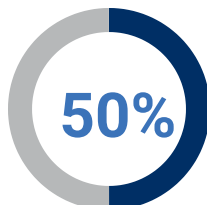### Focus

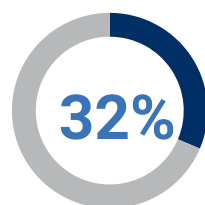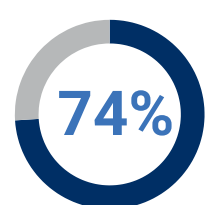| HAZOP study execution and importing	LOPA rationalization	SIF design and verification

3K
Man hours saved during engineered design

50%
Earlier SIF Design Resolution

32%
Less time to complete the SRS

74%
Reduction in functional safety man hours

Major Integrated Energy Company Testimonial

"As a firm believer in the data centric approach, I became increasingly frustrated with the way we were managing our functional safety process due to the multiple tools, databases, and spreadsheets we had to manage. After searching for Data Centric Functional Safety, I ran across Mangan Software's Safely Lifecycle Manager, an application that carries functional safety all the way from the HAZOP through SIF Design and through Run and Maintain. After a lengthy evaluation process, we opted to run a Pilot with Mangan SLM on our newest project. SLM did not disappoint, as we saved thousands of manhours and months of schedule due to increased efficiency, and the elimination of manual data transfer between tools. We are now using SLM on all our Deepwater projects in the GoM." - Chad Clement, Process, Instrumentation, Controls & Electrical Engineering (ICE) Team Lead

MANGAN Software Solutions

SLM®
Safety Lifecycle Manager

Driving Towards a Standardized Enterprise-Wide Digital Transformation

Benefits Realized Through:

Data Management Efficiencies/ Quality Assurance:

- Streamlined data entry and data transfer
- Efficient LOPA rationalization such as Copying/cloning LOPA scenarios allowing for efficient use of engineering time
- Set up specific task lists for a standardized approach to the verification process
- Increased design accuracy leading to a reduction in re-work

Progress Monitoring

- Developed progress reports for monitoring and resource planning support

Access to data:

- Collaborative work process through clean sharing of information to multiple departments making process safety data available for immediate use by all parties

Results:

An Executive Summary by the organization's Senior SIS Focal point and Senior Instrumentation/Manufacturing SME concluded that **SLM was a viable, fit-for-purpose replacement for several stand-alone software tools** currently being used for Analysis and Design activities, providing the desired **integrated approach to data management across the entire Safety Lifecycle.**

SLM made process safety **data available immediately eliminating manual data transfer** from one application to another for LOPA, SIF Design, SIL Validation and the associated rework typically required for updates to the HAZOP/LOPA. **completing deliverables ahead of schedule and under budget**.

By **consolidating critical process safety information platforms and work processes**, engineering, operations and **leadership can make quicker and informed decisions**; Shifting the organization to a more **data centric approach.**

The client ultimately executed a **Global Enterprise Agreement** that enables them to **deploy SLM** across their integrated upstream, downstream, and midstream lines of business.

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