



# USE CASE: LHP DELIVERS CLIENT FUNCTIONAL SAFETY PLAN IN MS PROJECT TIMELINE

CASE STUDY



# CHALLENGES

Prior to LHP, the original equipment manufacturer (OEM) could not effectively predict when they truly needed to start an application-specific program integrated with functional safety as part of the development lifecycle. This organization began its ISO 26262 journey two years prior with significant financial resources at its disposal. While the customer had a great base of technical knowledge in place or in development, they also would benefit from a company such as LHP, with real-world experience within this standard.

The project's mission was to provide an MS Project timeline, which could back calculate the necessary start date for functional safety program development, based on a start-of-production date provided. In ISO 26262 lingo, they needed a safety plan; one that identifies all the work products required, who does what by when, how much effort is required, and what task is dependent upon another. This was no easy request, given the size and complexity of the customer's development process, plus a high Automotive Safety Integrity Level (ASIL) rating to boot.

# THE SERVICES DELIVERED

LHP delivered all requirements set out by the customer – no easy feat, to say the least. The standards were high, established upfront within the proposal. Unfortunately, the customer had been burned by others on different functional safety projects. Although, from LHP's perspective, the customer had every right to make the requests they did. The client was, after all, leaning on LHP to make good on what LHP signed up to do. And that we did.

NOTE: LHP encourages this upfront thinking and can initiate its own Phase 0 project, which defines these types of requirements for its clients.

## ABOUT THE PROJECT

### Industry

- Automotive and Commercial Vehicle; >\$20 billion OEM in its product portfolio (also a Tier 1 supplier to vehicle OEMs)

### Company

- Multinational corporation that designs, manufactures, and distributes engines, filtration, and power generation products.

### Tools/Technologies/Skills

- Microsoft Project (MS Project)
- ISO 26262:2018 Standard
- ISO 26262:2018 Functional Safety and Project Planning Expertise

### Goals of the Project

- Deliver the customer's first program-specific functional safety plan in a functioning MS Project timeline
- Predict the program's required start date based on the end date; start of production
- Demonstrate the impact of team size on a program's start date
- Provide a timeline capable of estimating program costs

### Application Area

- Diesel Engine Development

The product delivered was a comprehensive safety plan, including two complimentary documents, provided in the format requested by the customer. Also, the customer was incorporating the Safety Element out of Context (SEooC) approach, adding an extra level of complexity to the safety plan. It required and contained each of the ISO 26262:2018 parts relevant to a vehicle OEM and its system OEM product – in this case, Parts 2 through 7.

The MS Project timeline contained all of the relevant work products for the ASIL C program, including the WP identification, a work breakdown structure, the task dependencies and the effort for each task. The timeline also contained the duration with start and finish dates, the resources necessary to execute such a project, and finally, the additional supplemental data required as the project progresses through the lifecycle. The complimentary MS Word document contained the accompanying safety plan requirements, which present better in tabular form, such as the roles and responsibility definitions, confirmation-measure independence, tool list documentation, along with appendices and other sectional callouts.

A separate “value-add” timeline was provided by LHP to demonstrate a later start date as achievable if the number of resources increased within the program. This was not a part of the scope, but one LHP thought important to highlight since the OEM could significantly delay the start for the functional safety activities. Given the OEM’s size and magnitude, the extra resources could be a realistic scenario, depending on the program size.

## HOW SERVICES HELPED

The global corporate functional safety manager initially engaged LHP to build this safety plan as an “...insurance policy,” per his words. This manager realized the value this “insurance policy” could bring, yielding a two-fold benefit: 1.) predictive capability to communicate to the organization and management, and 2.) a company-wide template, capable to plan functional safety activities once tailored for each specific program. Because of the upfront time required to fully craft the deliverables, the onus was on LHP to deliver within a small window before the simulation data was required. We delivered on time and under budget.

During the final review, the customer was surprised, in a good way, as to the technical detail and content presented within the safety plan. They credited LHP as to doing “great work.”

## RESULTS, ROI, & FUTURE PLANS

The customer realized early on that the upfront cost would be trivial if LHP could pull off the deliverables set out by the customer. As they described it, this initial safety plan would become the benchmark template for future program planning. Likewise, the customer could input its resource costs, turning the plan into a tool to estimate overall functional safety costs.

But don’t take our word for it. In fact, the customer awarded LHP 5 out of 5 on LHP’s customer satisfaction survey for “the overall value of LHP’s services.” Hands down, we can and will deliver to your company’s functional safety needs. Inquire today.