

Integration of functional safety and SOTIF analysis in ION BMS platform

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Functional Safety means: “Absence of unreasonable risk due to hazards caused by malfunctioning behaviour of electrical/electronic systems”. It is restricted to any internal E/E errors leading to foreseeable malfunctions derived during analyses.

“ISO/PAS 21448 applies to functionality that requires proper situational awareness in order to be safe. The standard is concerned with guaranteeing safety of the intended functionality — SOTIF — in the absence of a fault.”

With the intention of achieving ISO26262 compliance to ION BMS and also achieving operational safety compliance, ION applies functional safety analysis and SOTIF analysis methods to BMS functions. The challenging part is ION interfaces operational safety and functional safety together while both still being very separate. Which one takes the lead and when? Are they contradicting each other or assisting each other? Are operational safety requirements needed to be ASIL compliant? and if yes which ones? All the challenges are being faced and resolved everyday within ION and not just studied but actually implemented within ION BMS platform

Keywords: Functional safety, ISO 26262, SOTIF, ISO PAS 21448, Electric vehicles, battery management system