



# ENGINEERING SAFETY CONSULTANTS

*The Global Provider of Functional Safety Expertise and Technical Consultancy*

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## Certificate of Conformity to IEC 61508 and Specific Requirements of IEC 62061 Safety Integrity Level (SIL) 3

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### ***Functional Safety of Safety-Related Programmable Electronic Systems***

The **Siemens Based Navigator High Performance Automation System** has been assessed and is considered suitable for use in SIL 3 Safety Functions based on the design and requirements stated in the Functional Design Specification (Issue 2.1, October 2020) and the assumptions, data provided, and conditions given in the subsequent documents:

- Functional Safety Plan (Issue 2.1, October 2020);
- Maintenance Mode Hazardous Risk Assessment (Revision 1.2, October 2020);
- Operation Mode Hazardous Risk Assessment (Revision 1.3, October 2020);
- Safety Requirement Specification (Issue 2.1, October 2020);
- Internal Verification Checklist (Revision 1.2, October 2020);
- List of Parts (Revision 2, September 2020);
- Software Design Specification Siemens Axis Safety and Motion PLC (Issue 1.2, October 2020);
- Software Requirements Specification and Design Document for the Safety PLC and Navigator Control System (Issue 1.1, October 2020);
- Siemens Software Configuration Document (Issue 1.1, October 2020);
- Navigator Software Configuration Document (Issue 2, October 2020);
- Software Verification Testing Plan (Issue 2.1, October 2020);
- Software Verification Testing Checklist (Version 2.1, October 2020);
- Operation and Maintenance of Safety Systems (Issue 2.1, October 2020);
- Validation Plan (Issue 2.1, October 2020);
- Validation Checklist (Version 2, October 2020);
- Modification Procedure (Issue 1, February 2017);
- Competency Register (Issue 2, August 2020);
- Competency and Training Register Spreadsheet (Version 7, August 2020);
- Navigator Software Corrective Action Procedure (Issue 2, August 2020);
- Safety Commissioning Manual (Issue 2.1, October 2020);
- Safety Critical Software (Issue 2.1, September 2020);
- Navigator High Performance Automation System Functional Safety Assessment (E057\_FSA\_62061 Rev. 4, November 2020);
- Navigator High Performance Automation System – Siemens Simatic S7 Safety Functions SIL Verification (E057\_SV003\_Rev. 6, January 2021);
- Functional Design Specification (Siemens) (Issue 2.1, October 2020).

This certificate can cover project-specific systems only if the system's requirements and design fully comply with Functional Design Specification (Issue 2.1, October 2020) and the subsequent documents listed above.

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**The details of the system and the scope of the assessment are outlined below:**

The systems consist of a combination of parts which are SIL 3 High Demand, and parts which are High Demand SIL 1 systems monitored by a Low Demand SIL 2 system, giving an overall SIL 3 system. Safety Functions assessment comprising of:

- Random Hardware Failures;
- Safe Failure Fraction;
- Systematic Capability of Hardware and Software;
- Assessment of Components and Subsystems;
- Established Common Cause Factors.

**System designed and manufactured by:** TAIT Towers, 401 W Lincoln Avenue, Lititz, PA 17543

Managing Director: Simon Burwood  
Member of the IEC 61511 Maintenance Committee (MT61511)  
Assessment Date: November 2020, valid to November 2022  
Certificate: E057\_CT002 rev. 2

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