Functional Safety in Electronic Systems: Principles and Applications

GLOSSARY

Rev 1.0

ALARP As Low As Reasonably Practicable

ASIC Application Specific Integrated Circuit

ASIL Automotive Safety Integrity Level

BFR Base Failure Rate

BIST Built-In Self-Test

CCF Common Cause Failure

CM Common Mode

COTS Commercial Off-The-Shelf

CPU Central Processing Unit

CRC Cyclic Redundancy Check

DC Diagnostic Coverage

DFA Dependent Failure Analysis

DTI Diagnostic Test Interval

ECC Error Correction Code

EMC ElectroMagnetic Compatibility

EMI ElectroMagnetic Interference

E/E/PE Electrical/Electronic/Programmable Electronic

EEPROM Electrically Erasable Programmable Read-Only Memory

ETA Event Tree Analysis

EUC Equipment Under Control

FHTI Fault Handling Time Interval

FIT Failures In Time

FMEA Failure Modes and Effects Analysis

FMEDA Failure Modes, Effects, and Diagnostic Analysis

FPGA Field Programmable Gate Array

FSR Functional Safety Requirements

FTA Fault Tree Analysis

FTTI Fault Tolerant Time Interval

HARA Hazard Analysis and Risk Assessment

HAZOP HAZard and OPerability analysis

HD High Demand

HFT Hardware Fault Tolerance

HMI Human-Machine Interface

HW Hardware

IEC International Electrotechnical Commission

ISO International Organization for Standardization

LD Low Demand

LFM Latent-Fault Metric

MooN M out of N channel architecture

MRT Mean Repair Time

MTBF Mean Time Between Failures

MTTF Mean Time To Failure

MTTR Mean Time To Repair

OEM Original Equipment Manufacturer

PE Programmable Electronic

PFD Probability of Failure on Demand

PFH Probability of Dangerous Failure per Hour

PL Performance Level

PLA Programmable Logic Array

PMHF Probabilistic Metric for Hardware Failure

PST Proof Test

QM Quality Management

RAM Random Access Memory

RF Residual Fault

ROM Read-Only Memory

RPN Risk Priority Number

RTL Register Transfer Level

RTOS Real Time Operating System

SFF Safe Failure Fraction

SIL Safety Integrity Level

SOTIF Safety Of The Intended Function

SRS Safety Requirements Specification

SW Software

TSR Technical Safety Requirements

UML Unified Modeling Language

VHDL Very High Speed Integrated Circuit Hardware Description Language

V&V Verification and Validation

XML eXtensible Markup Language