

Arm Functional Safety Partner Program Green Hills Software

Case Study



Arm Functional
Safety Partner
Software & Tools

Application Areas

- + Automotive
- + Avionics
- + Industrial
- + Railway
- + Medical
- + Agricultural

Links

- + [Arm Functional Safety Partnership Program](#)
- + [Arm Safety Technologies](#)
- + [Green Hills Software](#)

Goal

Green Hills Software enables electronics manufacturers to achieve the highest levels of certified functional safety for their automotive, avionics, industrial, railway or medical systems. Decades of experience are combined with safety-certified real-time operating systems, development tools and middleware to lower the cost and decrease the time to develop and deploy safety-critical systems.

Challenge

Beyond functional requirements, today's electronic systems that perform safety-critical tasks face the added challenge of achieving safety goals. This additional effort and expertise to define, design and implement safety elements is expensive, time-consuming and requires expertise outside of a company's core competence. The consequences of failure can be loss of human life, revenue loss or bruised brand reputation.

Solution

Green Hills Software's solutions are certified software products/technologies and expert services to help companies implement fault avoidance and fault control to achieve the highest levels of safety for automotive (ISO 26262 ASIL D), avionics (DO-178C DAL A), industrial (IEC 61508 SIL3), railway (EN 50128 SIL 3) and medical (ISO 62304).

- + Safety RTOS – INTEGRITY® real-time operating system with its unique partitioning architecture is the safe and secure foundation for critical systems, pre-certified at the highest levels as Safety Element out of Context (SEooC).
- + Safety RTOS – INTEGRITY-178 real time operating system for mission-critical, safety-critical and secure (MILS & MLS) avionics systems.
- + MULTI® Development Tools – C/C++ Compilers, Tool Chain and Run-time Libraries. Qualification certificates for ASIL D and SIL 3.
- + Safety Board Support Package – Enables safety applications to use hardware services such as BIST, CBIST, PIST, to implement the system's safety concept. The Safety BSP is certified in context with the customer's system.

Services

The experienced safety team at Green Hills Software offers the following services:

1. Safety Workshops to create a Safety Concept Definition tailored to the customer's system, including risk assessment and hazard analysis (HARA).
2. Green Hills generates crucial certification evidence for the customer to use during certification with TÜV or exida. Alternatively, the customer can enlist Green Hills to work directly with the certification body.
3. Design and management services customized to specific customer needs.

Benefits

- + Enables customer to focus on their core business, instead of distracting their teams
- + Lowers program risk by leveraging an experienced safety team
- + Controls the risk of program schedules and reduces costs compared to many customer-only home-grown approaches

Applications area details

- + Automotive: ISO 26262 ASIL A through D
- + Avionics: FAA DO-178B/C DAL A
- + Industrial: IEC 61508 SIL 3
- + Medical: Class II and Class III medical devices
- + Railway: EN 50128 SWISL 4
- + Security: EAL 6+ High Robustness SKPP

How does the product/solution/service relate to Arm technology?

Since 2003, the safety offerings from Green Hills have supported Arm-based SoCs from leading processor manufacturers and leveraged [Safety-related Arm IP](#) in many areas including [Safety Test Libraries](#), MMU, DDR, system MMU, fault detection, ECC and safe-separation virtualization. [See here for more details.](#)