

RA Ecosystem Partner Solution

File Systems

Flash and external media support



Solution Summary

HCC offers five FAT file systems, each designed to achieve the best balance of performance and resource utilization in their targeted embedded configuration. Three of these file systems share a common API to ensure portability, and all can interface with any type of sector-based media.

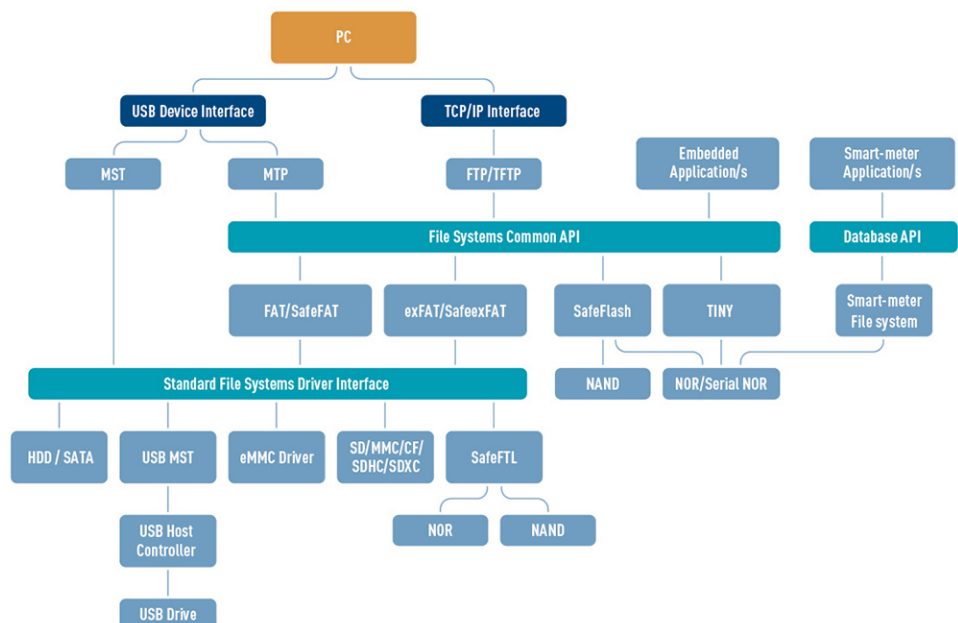
HCC also provides components needed for efficient management of NAND or NOR flash devices. HCC's advanced fail-safe SafeFTL Flash Translation Layer presents a logical, sector-based interface to any application or file system.

Drivers for external media such as SD, (e)MMC, CompactFlash and USB Mass Storage complement HCC's File Systems and Flash support offering. Support is now available for [RA MCUs](#).

Features/Benefits

- FAT: optimized for use in embedded applications that need to attach FAT 12/16/32 compliant media
- THIN: a FAT system for embedded MCUs with limited system resources
- SafeFAT: enhanced FAT, ensures file system integrity upon unexpected reset or power loss
- exFAT: optimized for use with flash memory such as USB flash drives and SD cards
- SafeexFAT: enhanced exFAT, ensures file system integrity upon unexpected reset or power loss

Block Diagram



Target Applications

- | | | |
|------------------------|------------------------|---------------------|
| ■ IoT devices | ■ Industrial equipment | ■ Medical equipment |
| ■ Mass storage devices | ■ Data logger | ■ Test equipment |
| ■ HID machine | ■ Measuring equipment | ■ Barcode reader |

About HCC

HCC Embedded develops deeply embedded software components “out of context”, which ensures that they can be used as core elements of any system, including those engineered to meet stringent requirements for safety, quality and portability. Built on a foundation of quality, HCC has a product portfolio of more than 250 embedded components, with deep competencies in reliable flash management, fail-safe file systems and IPv4/6 networking stacks with associated security protocols, as well as a comprehensive suite of USB host and function software.

HCC has developed a wide range of reusable software components for use in deeply embedded systems. HCC Embedded products are used, without modification, in thousands of customer projects with over 30 different RTOSes, in 8, 16, 32 and 64-bit systems, big- or little-endian, including many Renesas architectures/microcontrollers and tool chains.

HCC provides product support for the entire range of Renesas RA microcontroller variants and evaluation kits.

Safety Elements (out of Context)

ISO 26262-10 defines a SEooC as a method for using components in a vehicle where the components were not originally designed for that specific project. This methodology can be applied to both hardware and software elements. HCC is setting a new level for development by using the SEooC approach to build software Safety Elements.

HCC creates each SEooC with a full V-Model process following ISO 26262-6, which can be mapped to other safety processes such as ISO 61508, IEC 62304, and DO-178C. Each SEooC is supported by full software lifecycle processes, such that they can be integrated with the OEM’s safety development process. The development process includes full traceability between DOORS-based requirements and test cases, as well as traceability between the requirements, design, and implementation.

SafeTCPIP, developed to ASIL/B, is HCC’s first SEooC product.

For the complete embedded development lifecycle

HCC’s embedded engineering team has expertise in many areas of deeply embedded systems development. With indepth knowledge in file systems, flash management, networking and communications protocols, HCC’s development services team has built over 2,000 customer projects for a wide range of target environments across all industries.

Our 20 years of developing embedded software to high standards, independent of particular RTOS or tool-chain architecture, enable our engineering team to add focus and quality to specific challenges during product development.

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A list of fully authorized distributors is available on www.hcc-embedded.com

HCC has built its organization on quality (ISO 9001:2015 and ISO 27001 certified) to deliver quality solutions.



ISO 27001: 2013 CERTIFIED
HU-MSZT-ISMS/042-39



ISO 9001: 2015 CERTIFIED
HU-MSZT-503/1367-1286

Embedding Excellence

Networking

File Systems

Flash
Management

USB