

critical software

SOLUTION BRIEF | MEDICAL DEVICES

Implementation of SDC Using the Vector SDC Stack

A proven, ready-to-use foundation for interoperable medical devices, reducing implementation effort and time to market.

Enabling IEEE 11073 SDC (Service-oriented Device Connectivity) unlocks secure interoperability between medical devices and creates the foundation for connected healthcare environments. Yet implementing the standard from scratch requires significant time, expertise, and development effort.

Critical Software partnered with Vector to address this directly, integrating an embedded SDC provider application based on Vector's IEEE 11073 SDC Stack and Integration Kit, deployed natively on an embedded medical-grade board.

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What We Built

Rather than implementing the standards from scratch, our engineers configured and integrated a stack that already provides the full SDC framework.

Interoperability was successfully demonstrated with an independent SDC consumer based on another SDC stack, using standard SDC mechanisms — WS-Discovery, MDPWS, and BICEPS — without the need for custom adaptations.

Medical Device

Device Specific Application (SDC Provider)
Vector SDC Stack
Board, OS & Sensors

Integration in Practice

Integrating Vector’s IEEE 11073 SDC Stack and Integration Kit delivered concrete engineering benefits throughout the implementation: reduced implementation effort, trust configured rather than coded, a certification head-start, proven interoperability, a footprint designed for constrained environments, and single-vendor delivery.

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What Each Partner Brings

Critical Software — domain expertise in IEEE 11073 SDC, embedded medical-device engineering, and regulated software delivery; reusable, proven SDC integration patterns; and security assurance spanning risk analysis, secure communication, and penetration testing.

Vector — a production-grade SDC Stack & Integration Kit supporting provider, consumer, and hybrid roles; safe and secure by design, integrated into the Vector software ecosystem; and CANoe-based tooling for simulating and testing complete SDC use cases from device to network.

Next Steps

With Critical Software and Vector, manufacturers can focus on medical innovation instead of SDC infrastructure and setup. The partnership delivers an efficient foundation, stronger safety, faster certification, and a shorter path to market for SDC-enabled products.

Contact the Medical Devices team
at Critical Software to start your SDC journey at
medical-devices@criticalsoftware.com

