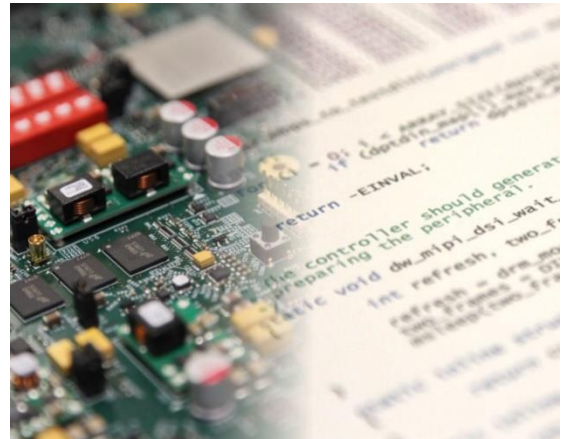


Embedded Software Development

Quality embedded software is increasingly vital as a differentiator for your technology solution. A software team that can understand the technical and commercial requirements of your product is key. The Sondrel team can work with you to turn your requirements into a comprehensive package tailored to your solution.

Products continue to increase in complexity, therefore the quality, flexibility and implementation of your software requirements will determine the ultimate success of your design in the marketplace.

Sondrel's software team comprises of device driver and virtual platform developers, with experience in providing embedded software expertise to deliver your projects.



Areas of Expertise

- **Video IP:** HDMI RX/TX, Decode, Encode, I2P, Display drivers up to 8k resolutions.
- **Camera Interfaces:** MIPI, HiSPi.
- **Peripherals:** USB2/3, Ethernet, SPI NOR/NAND, Parallel NOR/NAND, I2C, I2S, SD.
- **System IP:** IOMMU, NoC QoS, eFuse, OTP NVM, DMA and DDR controllers.
- **CPUs:** MIPS, ARM, META, ST.
- **OS:** Linux, VxWorks, FreeRTOS, Nucleus, ThreadX, uC/OS, MeOS, ENEA OSE, ST OS21.
- **Bootloaders:** Proprietary and U-boot.
- **Performance analysis:** Both invasive and transparent methods (using fabric or Network on Chip data where available).
- **Virtual Models:** We provide models and frameworks for fast software prototyping.
- **FPGA:** We translate designs into FPGA for testing against real hardware.

Team Capabilities

Software

- Driver development for real time devices using FPGA, virtual platforms, emulation or silicon where available.
- Porting of drivers or complete operating systems.
- Firmware design, implementation, and testing, including secure and verified boot firmware.
- New product PCB bring up including advanced debug and laboratory skills.
- Review of hardware design and architecture for software performance.

Virtual Platforms

- Developing new c based models at appropriate levels of abstraction.
- Integrating hardware models into a platform framework that closely matches the target platform.
- Advanced driver / model debug capability.

Advanced Skills

- Advanced architectural design for complex systems.
- Advanced debug skills built up from debugging multi CPU, multi-threaded systems.
- Software optimisation skills for tuning task priorities, scheduling, interrupt handling and semaphore usage.
- Performance and functional stress testing to evaluate the effects of latencies and bandwidth.

Recent Projects

- Multi-cluster coherent Video analytics platform with CNN.
- Multimedia SoC for professional video equipment.
- Advanced audio streaming BSP for wireless speakers with exceptionally accurate synchronisation.
- DAB/Connected Radio SoC.
- Laser projection video SoC.

Code Quality

We are proud of our high code quality – strict coding standards and best practice approaches are followed.

- Mandatory peer review before merging code changes.
- Continuous integration builds for each commit.
- Continuous integration runs where a suitable Virtual Platform, FPGA, or Silicon target exists.
- Comprehensive bug tracking and reporting methodologies.
- Where permitted by the customer we up-stream drivers to the Linux kernel.
- We share both our source trees and internal review systems with our customers for true transparency.

Next Steps



Call us today on
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info@sondrel.com