Industry puts weight behind Cmsis software standard for Cortex

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MAJOR SEMICONDUCTOR companies have already pledged their support to Arm's new software interface standard for Cortex-based microcontrollers, and product launches are being prepared in time for Embedded World in Nuremberg in March.

The standard is known as Cmsis (for Cortex microcontroller software interface standard), and acts as a vendor-independent hardware abstraction layer for the Cortex-M series.

"Embedded developers re-use code heavily," said Reinhard Keil, Arm's director for MCU tools. "But purchased code and code from other sources is not often integrated into the project. That is because there is no standard, so we came up with a standard that solves this."

Cmsis should let silicon vendors and middleware providers create software that can be easily integrated. It should also reduce the learning curve for new microcontroller developers.

Creating software is seen as one of the major costs in the embedded industry. Standardising the software interfaces across all Cortex silicon vendor products has the potential to reduce this cost significantly, especially when creating projects for new devices or migrating existing software to a Cortex-based microcontroller from other vendors.

"Our goal is to reduce complexity," said Keil. "This will give a consistent software framework to allow easy deployment of the code that has been written by the different vendors. And we already have Misra compliance for safety requirements."

Fabless semiconductor company Luminary Micro was involved in developing Cmsis.

"It is the software that takes the time," said Luminary's chief marketing officer Jean Anne Booth. "We will have full Cmsis support on our Stellaris microcontrollers early next year."

ST Microelectronics, which has standardised on Cortex for its 32bit microcontrollers, has also given its backing to Cmsis.

"There is a greater good," said Jim Nicholas, general manager of STM's microcontroller division. "It serves all our interests if we collaborate so our customers have flexibility. We cannot allow differences with our competitors to undermine our customers' routes to market."

NXP is sampling with it LPCAxx family of Cortex products and is planning general availability early next year, which is why it has been involved in developing Cmsis. And Atmel and Toshiba are planning announcements.

IAR Systems says its compilers are already Cmsis compliant and by next year its development kit will be using Cmsis.

"We think Cmsis is a very important part of the software development world," said Mike Skrtic, IAR's Arm account manager. "Never have we seen anything like this. The 8051 would have benefited very much from something like this."

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Segger founder Rolf Segger added: "Our goal is to support Cmsis fully by the time of Embedded World. We are very happy about this standardisation process because about half our work is writing board support packages and making sure our software runs on different boards and chips. With this, we hope to spend less time or even no time on this."