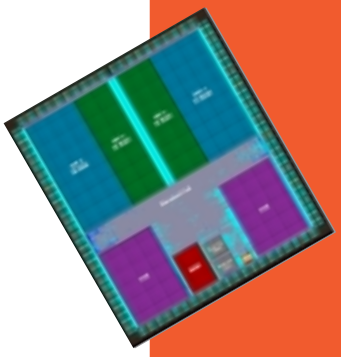
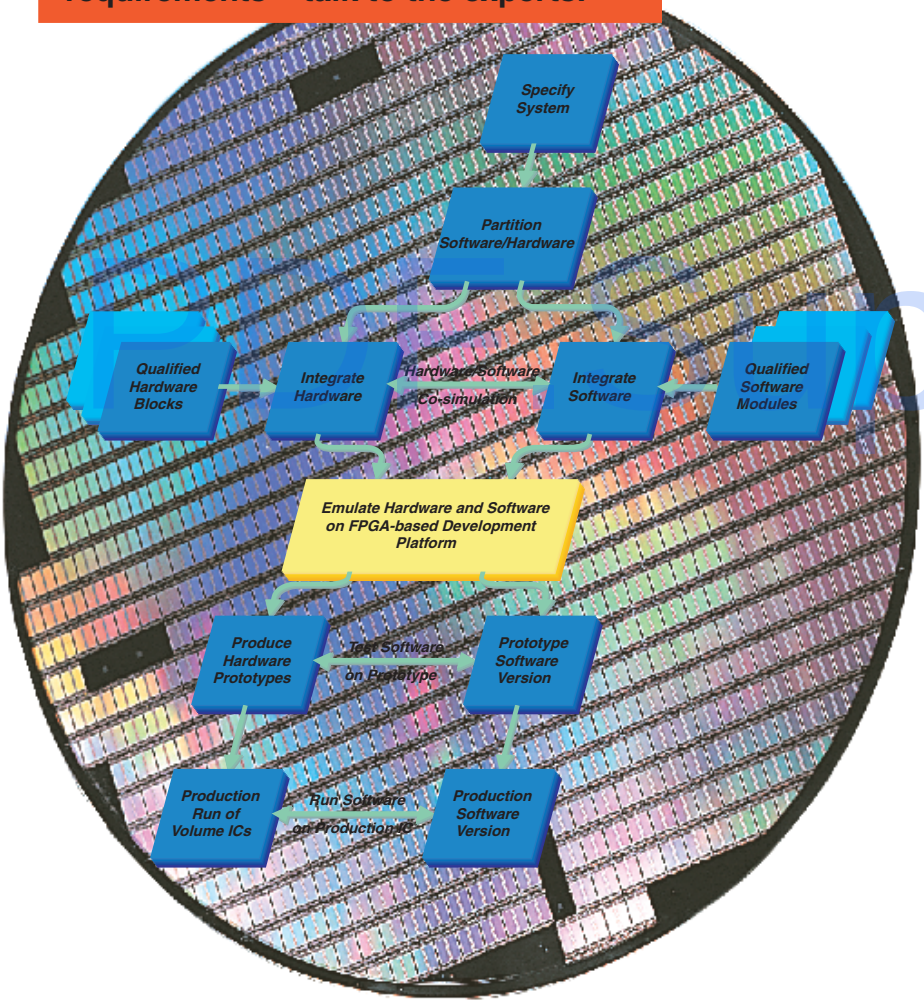
ATMEL

YOUR PARTNER FOR

SYSTEM LEVEL INTEGRATION



For a single-chip solution to your most exacting application requirements – talk to the experts.



You have a product concept that you must bring to the market in the shortest possible timescale. Its functionality is highly complex, requiring an optimum mix of hardware and software. It must be low-power, small, fast, adaptable – and low-cost.

In partnership with Atmel, you can turn your idea into a system-on-chip…

- **Rich library of qualified IP blocks and ASSPs for rapid, low-risk integration**
- **Configurable MCU-based development platforms for system emulation**
- **Advanced DSPs, RISC MCUs and plug-compatible peripherals for your basic system architecture**
- **Open operating systems including Multos™, Linux®, Windows® and Java™ for rapid application software development**
- **Application-specific cores such as image capture arrays, voice and line codecs**
- **Standard interfaces such as USB, ISO 7816 (Smart Cards), I²C, PCI and CAN for immediate compatibility with external devices**
- **Proven track record on some of the most advanced single-chip products in the industry**

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0746D-04/00/12M

Atmel understands that to get a highly complex system-on-chip to today's market, you need an optimal mix of hardware for power and software for flexibility. You need to take full advantage of re-usable IP blocks. Everything must plug together seamlessly. To launch your system in its limited market window, you need to do as much as possible in parallel: development and integration of blocks, hardware/software co-simulation, system emulation at operational speed, rapid prototype fabrication, fast ramp-up to volume.

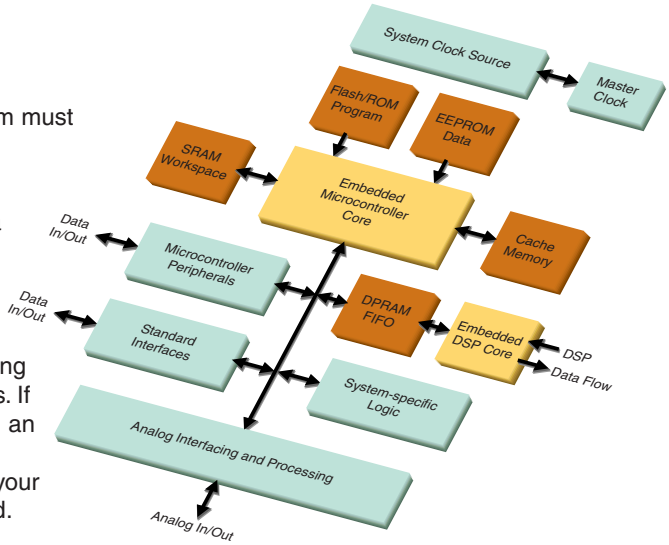
Atmel can provide all of this. We can apply our expertise at every step of the SLI design flow.

System Specification

We listen, carefully. Once we understand clearly what your system must do, we're up and running.

Partition Hardware/Software

We apply our experience from a number of market-leading hybrid MCU/DSP architectures to advise you on the best block configuration and signal flow for your system. Multiple software streams exchanging data via FIFOs are well known to us. If necessary, we put you in touch with an expert in software development for embedded systems to ensure that your application runs exactly as intended.



Typical architecture of a system-on-chip

Integrate Hardware

Atmel has one of the richest libraries of qualified blocks in the industry. They range from advanced DSP and RISC MCUs with plug-compatible peripherals to optical image sensors, baseband signal processors and whatever configuration of RAM, ROM, EEPROM or Flash memories you require. You can contribute the IP blocks that make your device unique.

Our HDL-based design flow is supported on all leading CAD tools.

Integrate Software

Our MCUs support Linux®, Windows®, MULTOS™, Java™ and other open operating systems, and all our peripheral blocks are supplied with software device drivers. This leaves you free to concentrate on the application level. Our application software libraries provide many basic functions.

Advanced software development tools help you at every step. You can simulate hardware and software together – giving you a precise indication of how your application will run on its platform, before anything is committed to silicon.

A plus: our MCU cores are industry-leaders in code compactness from C or C++ source. This keeps on-chip program memory to a minimum.

Emulate Hardware and Software

Experience shows that most SLI problems are due to the interaction between modules, particularly between hardware and software. This has led us to develop the centerpiece of our system-on-chip (SoC) design flow – an FPGA-based emulator that runs your system software at close to operational speed. We select the closest match to your system architecture from one of our MCU-based platforms and map system-specific blocks onto an FPGA. The result is a very close approximation to how your IC will perform in operational use.

This emulation platform enables you to refine your system, both hardware and software, while avoiding the cost and delays of prototype re-spins.

Rapid Prototyping

We map your design onto the latest in CMOS with embedded NVM silicon technology and advanced packaging, and produce the prototype at one of our state-of-the-art fabrication plants. There are no outsourcing delays. Running the software serves to confirm what has already been established in emulation – it's a right-first time system.

Volume Production

We can apply our worldwide fabrication capacity to ramp your product up to volume in whatever timescale you require.

Support

Our network of expert support engineers in all time zones is there give you whatever help you need to ensure that your application works as specified.