

## On-Chip Monitoring/Analytics

As part of our comprehensive “shift left” approach Sondrel has been accredited as a Design Services Partner to support customers in implementing the soft RTL of **UltraSoC’s** versatile monitoring and analytics IP.

The UltraSoC IP delivers significant benefits to your SoC in both development and security. It can improve the quality of your design, de-risk the entire development process, and in the case of an IoT IC, provide a ‘bare metal’ security system.

The **post-silicon debug and validation** is one of the most onerous tasks in the SoC development process. By incorporating this IP into your SoC design, Sondrel can deliver a significant “shift left” in your SoC development program.

For your **Internet of Things (IoT) IC**, hardware-based on-chip monitoring and analytics technology can be used as a toolkit to build security systems that function entirely independently of the main system.



## Verification Benefits

- Significant “shift-left” in debug and verification process
- Faster TTM, better quality results
- Spot quickly even intractable bugs that only surface in real-world operation
- Provides a holistic, independent view of the entire chip
- A method to performance-tune device under real-world operating conditions

## Security (IoT ICs) Benefits

- solution that fits well with the “multilayer” IoT security approach
- non-intrusive and remains robust even if the system’s conventional security measures are compromised
- can be used standalone or as a complement to traditional security mechanisms such as encryption and E-Fuse protection
- does not affect system performance and is very difficult to subvert or tamper with

## Technical Details

UltraSoC provides a complete suite of silicon IP and software for post-silicon debug, performance monitoring, optimization, analytics and hardware-based security. It is vendor-independent, works non-intrusively and at wire speed. The UltraSoC portfolio includes IP blocks to support all major CPUs, protocol-aware probes for common buses and interconnects and support for custom logic.

UltraSoC provides a holistic, system-level view of the complex behaviors within today's SoCs that helps engineers develop and optimize SoC hardware and software in the lab and in-field. By incorporating UltraSoC IP into a device, designers can intelligently monitor, understand and control the activity of any on-chip structure – including custom logic, buses, and CPU cores from leading vendors such as ARM, MIPS, CEVA and Cadence/Tensilica.

- SoC monitoring / analytics
- Reduces post-silicon debug/verification burden
- Enables system optimization (CPU, power)
- Integrates with any tool flow
- Silicon IP and software tools
- Non-intrusive, wire speed
- Reveals hard-to-find bugs, deadlocks
- Extends to in-field performance monitoring

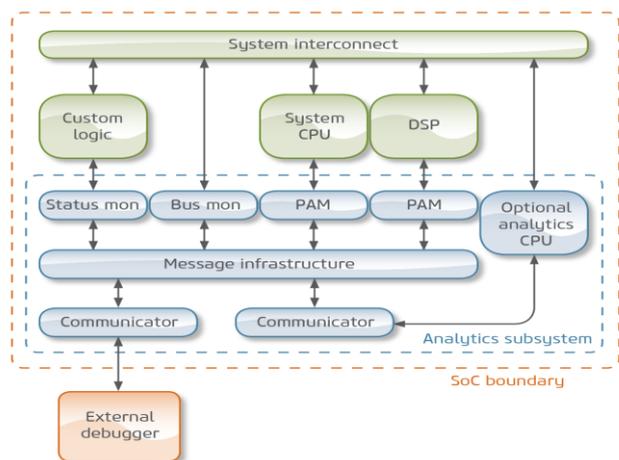
*UltraSoC turns on-chip data into actionable information, accelerating SoC time-to-revenue, improving product quality and de-risking the entire development process*

## Process & Delivery

Our skilled engineering teams, located in Europe and Asia offer fixed price project or team augmentation IC design services for verification, DfT insertion and physical implementation. Sondrel are experts on digital and mixed-signal devices from 180nm to 16nm. Our teams have been trained to verify and implement the UltraSoC IP ideally as part of a wider engineering support for your SoC.

Extensive domain knowledge of communications, automotive and M2M/IoT. Partnerships and collaborations with other IP vendors, fabs and EDA suppliers allow us to provide a full ASIC service on both digital and AMS designs.

Various business models can apply with respect to the UltraSoC IP. You may wish Sondrel to procure and implement under its master license agreement. You may wish to negotiate the license and royalty directly and then pas the IP to Sondrel. We are flexible and aim to offer the best advice and support for your project.



### Next Steps



Call us today on  
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