



## NXP Breaks Through Integration Barriers for Software-Defined Vehicle Development with Open S32 CoreRide Platform

March 28, 2024 at 4:00 AM EDT

- Industry-first platform combines processing, vehicle networking and system power management with integrated software to address the complexity, scalability, cost-efficiency and development efforts required for next-generation vehicles
- NXP collaborates with market-leading software and tier-1 suppliers to provide an easy-to-use vehicle integration platform that maximizes system performance
- NXP also introduces S32N family of vehicle super-integration processors offering best-in-class real-time performance that enables S32 CoreRide central compute solutions, empowering OEMs with efficient and flexible processing choices

EINDHOVEN, The Netherlands, March 28, 2024 (GLOBE NEWSWIRE) -- NXP Semiconductors N.V. (NASDAQ: NXPI), the worldwide leader in automotive processing, breaks through the integration barriers for next-generation software-defined vehicle (SDV) development with the introduction of its S32 CoreRide platform. The new industry-first vehicle software platform greatly simplifies complex vehicle architecture development and cuts costs for automakers and tier-1 suppliers.

The S32 CoreRide platform brings together NXP's established S32 compute, networking, system power management and ready-to-deploy software from the company's extensive software partner ecosystem. The company is also unveiling its first S32 CoreRide solution for central compute based on NXP's new S32N family of vehicle super-integration processors. It offers safe and scalable combinations of real-time and applications processing as well as vehicle networking.

The rise of SDVs introduces promising yet challenging paths forward. A new software-defined approach is imminent as upgradable features and new revenue streams are in demand across vehicle fleets. The proliferation of hardware-defined variants across different vehicle classes has become impractical to maintain in the modern vehicle architecture development flow.

### S32 CoreRide platform: integration and consolidation

NXP's S32 CoreRide platform represents the next milestone in overcoming the software and hardware integration challenges blocking fast adoption of SDVs. Automakers have struggled to move functions from the traditional multi-ECU to zoned or centralized processing due to software and architectural inconsistencies. The new platform integrates NXP's broad hardware portfolio with software from the world's leading automotive experts across a comprehensive ecosystem, including Accenture ESR Labs, ArcherMind, BlackBerry QNX, Elektrobit, ETAS, Green Hills Software, Sonatus, Synopsys, TTTech Auto, Vector Informatik GmbH, and Wind River as well as tier-1 suppliers like Valeo.

Leveraging the scalable S32 compute in the S32 CoreRide platform, OEMs can consolidate ECUs and develop flexible architectures, from domain to zonal to centralized, that scale across vehicle classes and generations. The platform provides the ability to isolate vehicle functions, helping to ensure freedom from interference between each application and dynamically re-allocate resources so applications do not degrade in performance as they evolve over time. This level of integration and flexibility advances carmakers and tier-1 suppliers to the next point in their development since they can now utilize the S32 CoreRide platform to put more focus on differentiation and the creation of application software for new business models.

"The automotive industry's shift to software-defined vehicles presents unprecedented levels of disruption," said Henri Ardevol, executive vice president and general manager, automotive embedded systems at NXP. "In the last decade, many industries have successfully adopted faster innovation cycles and effectively achieved higher performance at lower cost through tight integration of silicon and software. With NXP's S32 CoreRide platform, automakers can now radically transform their approach to SDV development by adopting a much faster, open development path."

### First S32 CoreRide solutions for central compute based on new S32N family

NXP also introduces its first solutions in the S32 CoreRide platform: the central compute solution based on the new S32N family of vehicle super-integration processors, advanced vehicle networking, system power management, and pre-integrated software from the S32 CoreRide open partner ecosystem. The central compute solution allows automakers to safely and easily integrate many cross-vehicle functions running in isolation-ready execution environments enabled by the S32N family's automotive-grade hardware isolation capabilities.

The scalable S32N family, purpose-built for the highest level of automotive functional safety, offers multiple combinations of real-time and applications processing cores to meet a wide range of automakers' central compute needs. All S32N devices integrate an advanced hardware security engine and multi-port TSN Ethernet switch and CAN hub, with some also supporting Ethernet packet acceleration, AI/ML acceleration, and cost-effective, inter-compute PCI Express services.

The S32 CoreRide central compute solution is optimized to meet the network bandwidth, power delivery requirements and targets ISO 26262 ASIL D functional safety requirements. It can unlock the benefits of SDVs by providing vehicle data intelligence for streamlining deployment and monetization of enhanced capabilities and new services over a vehicle's lifetime.

[Learn more](#) about the central compute solution and the new S32N family.

### Ecosystem voices

Gerd Schäfer, CTO at [Accenture ESR Labs](#)

"Accenture ESR Labs and NXP have a long history of close collaboration. We've been using NXP's technologies for an extensive period and our partnership ensures we achieve the best possible performance required for our embedded software projects to be successful. We are looking forward to explore the wide possibilities of the new S32 CoreRide platform and to significantly ease SDV development, together"

*Xiaodong Zou, EVP of engineering at [ArcherMind](#)*

"ArcherMind warmly welcomes the arrival of NXP's S32 CoreRide platform. A common foundation for the creation of software-defined vehicles radically simplifies integration and allows us to focus on solving the software developers pain points with our FusionWise middleware software solution, adding value for our customers and their end customers."

*Grant Courville, VP of product and strategy at [BlackBerry QNX](#)*

"As the automotive industry moves towards fully software-defined vehicles, the importance of close collaboration between software and silicon vendors becomes even more critical. We are excited to deepen our partnership with NXP and the open S32 CoreRide platform to address this evolution and deliver integrated hardware and software solutions that meet the current and future needs of the industry."

*Mike Robertson, managing director at [Elektrobit](#)*

"This is excellent news for OEMs and tier-1 suppliers making the transition towards software-defined mobility. Tight integration of Elektrobit's safe and secure product portfolio including EB tresos, EB corbos and EB zoneo into NXP's scalable open S32 CoreRide platform fast tracks development as it allows for early prototyping up to production readiness. NXP's and Elektrobit's joint offering results in faster time-to-market, reduced integration complexity and cost."

*Nigel Tracey, VP RTA Solutions at [ETAS](#)*

"Automotive customers need a solid hardware and software foundation that enables them to deliver software defined vehicle innovations to market. ETAS is pleased to be a partner in NXP's open S32 CoreRide platform ecosystem, that brings together leading technologies to provide this foundation. The combination of the broad range of devices offered by NXP's S32 hardware and device driver portfolio with ETAS's high-performance, low-overhead, safe and secure AUTOSAR Classic, Adaptive and hypervisor software, provides a highly scalable solution for use across a wide variety of ECU classes delivering vehicle core functions. With many years of successful NXP and ETAS teamwork, we are looking forward to future journeys with both existing and new customers on the S32 CoreRide platform."

*Dan Mender, VP business development at [Green Hills Software](#)*

"Green Hills is pleased to be an essential integration partner with NXP, offering automotive OEMs and tier-1 suppliers the broadest portfolio of safety and security-certified software solutions in the industry, integrated and optimized for NXP's S32 CoreRide platform. Our production-proven RTOSes, virtualization services and advanced development tools enable customers to elevate their use of the S32 CoreRide platform by enabling ECU consolidation, accelerating complex system development and reducing cost and time to market for the core vehicle functions of mixed-criticality multi-core SDV architectures."

*Jeffrey Chou, co-founder and CEO at [Sonatus](#)*

"Sonatus is fully committed to the S32 CoreRide platform, building on our proven history of delivering tight integration with NXP silicon solutions in mass production for automotive. The Sonatus Vehicle Platform, which accelerates the shift to software-defined vehicles, is performance-optimized for a range of NXP solutions to deliver scalability, flexibility, and speed time-to-market. We are proud to be in production with leading OEMs with the S32G vehicle processor and are actively integrating with the new S32N family to enable the future of automotive architectures."

*Tom De Schutter, VP of engineering, system design group at [Synopsys](#)*

"For 10 years Synopsys and NXP have collaborated through a joint Center of Excellence, providing virtual prototypes validated by NXP. Our longstanding support for the NXP S32 automotive processing platform now includes the newly announced S32 CoreRide platform. This collaboration enables automotive companies with our Synopsys Virtualizer Development Kit for NXP S32N to accelerate their software development and test through the deployment of ECUs and vehicle digital twins of the electronics."

*Dr. Stefan Poledna, CTO and co-founder at [TTTech Auto](#)*

"The coming generations of super high performance SoCs with NXP's open S32 CoreRide platform will fuel and drive the SDV transition. We will provide our Modular MotionWise platform to enable a much faster and more robust integration of the increasingly complex SDV software. This includes standard QM software as well as safety critical software up to ASIL D. This simplification of mixed criticality software integration will enable developers to deliver customer relevant functions much faster."

*Geoffrey Bouquot, CTO and senior vice president strategy at [Valeo Group](#)*

"Valeo's 30 years in software development for vehicles led us to be a key innovation partner for global automotive OEMs and keep us pushing the excellence to an affordable safer, smarter and more sustainable mobility. Collaborating with NXP and joining the S32 CoreRide platform reinforces Valeo's position in the software-defined vehicle global ecosystem. We are proud to be part of this journey and we are thrilled to work together to deliver the best-in-class solutions and a premium software application experience to our customers."

*Dr. Matthias Traub, director product line embedded software and systems at [Vector Informatik GmbH](#)*

"A software-defined vehicle relies on efficient platform-building and fast integration. These can be achieved through pre-configuration and automated workflows in a personalized software factory. We at Vector have the necessary tools, embedded software and know-how to fully support NXP's initiative. This close collaboration will ensure the seamless pre-integration of our Base Layer on NXP's S32 CoreRide platform to simplify the development process on customer side. By shifting the integration process, OEM's and tier-1 suppliers can concentrate on their specific application, saving time and resources."

*Amit Ronen, Chief Customer Officer at [Wind River](#)*

"Wind River has been a software innovator and pioneer in mission-critical systems that require the highest levels of security, safety, and reliability. With NXP's S32 CoreRide platform, we will bring our expertise in tooling, services, and productization, as well as our experience consolidating multiple mixed-criticality workloads on multi-core SoCs, to NXP's expandable automotive platform. Together with NXP, we look forward to further advancing software-defined vehicle development in order to deliver cost efficiencies and drastically reduce time to market for our customers."

## **Availability**

NXP is engaged with automakers and Tier 1s today with initial offerings of the S32 CoreRide platform. Production vehicles leveraging S32 CoreRide capabilities are in development today. First production vehicles are expected to ramp up in 2027.

**Additional links:**

- [Vehicle networking](#)
- [System power management](#)
- [Central compute](#)
- [S32N](#)

**About NXP Semiconductors**

NXP Semiconductors N.V. (NASDAQ: NXPI) brings together bright minds to create breakthrough technologies that make the connected world better, safer and more secure. As a world leader in secure connectivity solutions for embedded applications, NXP is pushing boundaries in the automotive, industrial & IoT, mobile, and communication infrastructure markets while delivering solutions that advance a more sustainable future. Built on more than 60 years of combined experience and expertise, the company has approximately 34,200 team members in more than 30 countries and posted revenue of \$13.28 billion in 2023. Find out more at [www.nxp.com](http://www.nxp.com).

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Source: NXP USA, Inc.