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BIG IDEAS FOR EVERY SPACE

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RENESAS AUTOMOTIVE DAYS 2021

Virtual Live Sessions | October 5 through December 3

More than 10 virtual live sessions on the latest CASE (Connected, Autonomous, Shared & Services and Electrification) Era are presented by Renesas executives, subject matter experts and partners at the Renesas Automotive Days.

Join us to learn how Renesas' technologies can help you to accelerate development in your new designs.

Date	Time	Place	Registration Fee
October 5, October 21, November 4, November 18, December 2 (EST, CET)*	09:00 onwards (EST) 15:00 onwards (CET)	Virtual	N.A
October 8, October 22, November 8, November 18, December 3 (IST, SGT)*	13:00 onwards (IST) 15:30 onwards (SGT)		

*Renesas Automotive Days are spread across five different days, covering different topics on each automotive day. One registration will enable you to access all five Renesas Automotive Days.

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Automotive Day 1 – Keynotes and Strategies Aligning with CASE ERA

Date and Time	Content Abstract	Speaker
October 5 09:00-09:20 (EST) 15:00-15:20 (CET) **October 8** 13:00-13:20 (IST) 15:30-15:50 (SGT)	**Value Proposition of Renesas Automotive Business in the CASE Era** Megatrends such as connectivity, automated driving, and electrification will continue to grow strongly even in the global trend of COVID-19. Especially the need for electrification is expected to grow rapidly as the decarbonization and the SDGs are becoming major topics in recent years. Against this backdrop, the automotive E/E architecture is undergoing a major evolution. In this session, we will introduce Renesas' approach to these changes in the automotive environment and how we can support our customers.	**Takeshi Kataoka** Senior Vice President General Manager of Automotive Solution Business Unit Renesas Electronics
October 5 09:20-09:50 (EST) 15:20-15:50 (CET) **October 8** 13:20-13:50 (IST) 15:50-16:20 (SGT)	**Renesas Automotive Digital Product Strategy in the CASE Era** As vehicles become more IoT enabled and include more sophistical safety related features, advanced and innovative solutions are required to support new vehicle architectures. Additionally, software updates have become indispensable to realize a sustainable vehicle in the long term, and software development cost and engineering resources have become major issues. To respond to such market changes, we will introduce Renesas' SoC / MCU core technology, development environment, and solutions in collaboration with ecosystem partners.	**Naoki Yoshida** Vice President Automotive Digital Products Marketing Division Automotive Solution Business Unit Renesas Electronics
October 5 09:50-10:20 (EST) 15:50-16:20 (CET) **October 8** 13:50-14:20 (IST) 16:20-16:50 (SGT)	**Renesas Automotive Analog Product Strategy in the CASE Era** Recent trends in the automotive industry have been referred to as "CASE", Connected, Autonomous, Shared & Services and Electrification. Renesas has included another significant trend of evolving E/E architectures to arrive at "CASE+E". These substantial transitions within the automotive industry demand more development resources than ever while requiring an even quicker time to bring products to market in the face of growing competition. These challenges require solutions that can reduce development cost and shorten the design cycle for start-ups and manufacturers against newcomer in emerging markets. With this competitive and quickly developing landscape in mind, we introduce Renesas analog and power solutions through Winning Combinations consisting of starter kits and an ECU reference design.	**Shunichi Kaeriyama** Vice President Automotive Analog Product Marketing Division Automotive Solution Business Unit Renesas Electronics

Automotive Day 2 – Connected

Date and Time	Content Abstract	Speaker October 21	Speaker October 22
October 21 09:00-09:25 (EST) 15:00-15:25 (CET) **October 22** 13:00-13:25 (IST) 15:30-15:55 (SGT)	**Single-Chip Gateway Solution with Rich Connectivity to Enable Next Generation Car Server** The automotive gateway is becoming increasingly important to realize the ADAS and automated driving. As the amount of data to be dramatically increased, it is necessary to route the data in the in-vehicle network safely and securely. In this session, Renesas will present a brand-new products for automotive gateways with the advanced communication and security functions.	**Michael Spandick** Assistant Manager Automotive Digital Products Marketing Division, Automotive Solution Business Unit Renesas Electronics	**Vivek Vasantha** Manager Automotive Strategic Sales Division, Automotive Solution Business Unit Renesas Electronics
October 21 09:25-09:40 (EST) 15:25-15:40 (CET) **October 22** 13:25-13:40 (IST) 15:55-16:10 (SGT)	**Analog Product Solution to Define EE Architectures in the Next Generation of Connected Cars** In this session, we will introduce a Renesas PDB (Power Distribution Box) solution that contributes to the implementation of next generation E/E architecture through the use of IPDs (Intelligent Power Devices). This fuse-replacement solution allows for the replacement of the classic "melting" fuse, enabling more extensive power net routing and fuse placement options not possible in vehicles today. These intelligent automotive switches introduce the ability for direct MCU control for reset-ability, output state diagnosis and power net current measurement that can be used to determine SoH (State of Health) of the controlled wiring harness. Together, fuse-replacement using Renesas IPDs and effective wire harness SoH calculations offer a world of new options for E/E architectures.	**Keith Larson** Senior Manager Automotive Analog Product Marketing Division, Automotive Solution Business Unit Renesas Electronics	**Amit Kumar Sharma** Manager Automotive Strategic Sales Division, Automotive Solution Business Unit Renesas Electronics
October 21 09:40-09:55 (EST) 15:40-15:55 (CET)	**High Performance Computing - Beyond the Edge and Back Again** High-performance, or scalable computing is quickly becoming one of the hottest topics in automotive today. The whole industry is looking to capitalize on the expertise developed by the largest global cloud service providers to deploy, manage and control runtime environments. If successful, scalable computing promises to revolutionize the automotive computing landscape. However, automotive is a unique market with distinct requirements. Foremost among these is the need for vehicle to operate in a manner that is both safe and secure. In this session, we will explore key concepts and best practices that should be considered when adapting the cloud model to automotive.	**Justin Moon** Senior Director OEM Direct Engineering Blackberry Limited *Renesas Partners*	
October 22 13:40-13:55 (IST) 16:10-16:25 (SGT)	**Enabling Connected Solutions by Co-Innovation** Global connected car market is projected to grow at 24% CAGR, OEMs are looking for quick TTM and integration of intelligent features. Renesas R-Car Consortium is amplifying effect of eco-system partnerships and bringing best of hardware and software into the automotive market. Being Active R-Car Consortium and engineering service partner, QuEST is working on multiple connected solution on R-Car platform that can be offered to OEMs as near ready solutions. This presentation introduces ready and ongoing Renesas + QuEST connected solutions enabled on R-Car platform and roadmap for OEM to bring advance features to their vehicles.	**Tinku Jose** General Manager Automotive Sales QuEST Global *Renesas Partners*	
October 21 | 09:55-10:10 (EST) | 15:55-16:10 (CET) **October 22** | 13:55-14:10 (IST) | 16:25-16:40 (SGT) Questions & Answers (Live)			

Date and Time	Content Abstract	Speaker	
November 4 09:00-09:25 (EST) 15:00-15:25 (CET) **November 8** 13:00-13:25 (IST) 15:30-15:55 (SGT)	**Solving OEMs Dilemma to Compromise between Deep Learning Performance versus Low Power & Safe Operation for Autonomous Drive Vehicles** E/E architecture systems for next-generation cars are evolving around electrification and autonomous driving. Current high end autonomous drive systems consume up to 12% of battery having a drastic negative impact on EV autonomy. OEMs are looking for realistic scenarios to address this power challenge while considering the economic aspect to offer a wide range of ADAS and AD features for their car platform where NCAP requirements remain the main volume driver. Renesas R-Car V series provides performance optimization by heterogeneous computing of automotive devices with low power and safe operation. This presentation will explain the current solution based on R-Car while providing an outlook of future solutions under development.	November 4 **Eric Pinton** Director Automotive Digital Products Marketing Division, Automotive Solution Business Unit Renesas Electronics	November 8 **Madhunandan Maithili Sharan** Staff Engineer Automotive New Business Creation Division, Automotive Solution Business Unit Renesas Electronics
November 4 09:25-09:40 (EST) 15:25-15:40 (CET) **November 8** 13:25-13:40 (IST) 15:55-16:10 (SGT)	**Analog Product Solution for ADAS and Autonomous Driving System** In this session, we will introduce Renesas RADAR, LiDAR and camera system devices for AD/ADAS applications. Renesas offers core devices for this application, not only the intelligent sensors but also the Renesas R-Car SoC and R-Car compatible power management IC (PMIC). We will also introduce our Winning Combinations that implement these key devices, allowing users to accelerate product development and expedite time-to-market.	November 4 **Keith Larson** Senior Manager Automotive Analog Product Marketing Division, Automotive Solution Business Unit Renesas Electronics	November 8 **Vamsi Gurrala** Assistant Manager Automotive Strategic Sales Division, Automotive Solution Business Unit Renesas Electronics
November 4 09:40-09:50 (EST) 15:40-15:50 (CET)	**eCUBE Development Platform by Lacroix Impulse (eSoftThings)** eCUBE is a hardware (HW) development platform that allows ADAS developers to save precious time and effort when they prototype and they evaluate their innovative use cases having a need for in the loop camera sensors already enabled and tuned. The development platform comes with eVIEW, eVISION and eTUNE software components already integrated and it can be used on a table or integrated in a test vehicle allowing the developer to concentrate on the application software. eVIEW enables the video pipeline from multiple camera sensors to the display pipeline for different use cases with an open API allowing the ADAS developer to retrieve the frames directly in Linux User Space. eTune enables the control of the HW ISP registers and provides a user-friendly interface to tune parameters on the fly. eVISION is an example of a neural network detector trained for Vulnerable Road User detection and ported on the Renesas R-Car V3H Computer Vision hardware accelerators.	 **Vincent Leduby** Director Lacroix Impulse A3 Business Line Lacroix Electronics Cesson, SAS *Renesas Partners*	
November 4 09:50-10:00 (EST) 15:50-16:00 (CET)	**AutoBrains' Unsupervised AI Solutions for ADAS & AD** • ADAS and AD solutions based on unsupervised learning approach realized on the Renesas R-Car V3M/V3H SoCs. • Vision-based & sensor fusion with Radar application executed on the R-Car V3x SoCs. • Product roadmap for NCAP 2020-2025 and beyond. • New concepts how to unlock the problem of perception in L4-L5 levels.	 **Barak Matzkevich** COO AutoBrains Management AutoBrains Technologies Ltd. *Renesas Partners*	 **Idan Grunbaum** VP Platforms AutoBrains Management, AutoBrains Technologies Ltd. *Renesas Partners*
November 8 13:40-13:50 (IST) 16:10-16:20 (SGT)	**Challenges of ISP Tuning and Image Quality for Vision-based Perception Systems** Cameras in ADAS and AD systems are becoming increasingly vital for overall perception around the vehicle. Although the entire vision system is attributed by optics, sensor, image signal processor and AI algorithms, the influence of these components on final image or video quality on overall perception performance is critical. Powerful hardware-based image signal processors (ISPs) such as in Renesas R-Car V3x is an extremely complex system especially in the context of ADAS/AD where demand to achieve final image quality is challenging due to varied use cases including both viewing applications (surround view, camera monitor systems etc.) and machine vision applications (pedestrian detection, traffic light detection, lane detection etc.). It is essential to appropriately tune or optimize ISP blocks such that best possible vision system performance is achieved. However, tuning an ISP is not a straight-forward task and requires relevant expertise and sophisticated tools to configure ISP parameters especially in the embedded environment both in lab and field environment. This presentation will explain some of the process and challenges of tuning the automotive ISP in the context of automotive vision use cases and how having a sophisticated tuning tool environment helps in achieving the desired image quality by leveraging R-Car V3x ISP.	 **Radhesh Bhat** Director of Technology Automotive BU PathPartner Technology Pvt Ltd *Renesas Partners*	
November 8 13:50-14:00 (IST) 16:20-16:30 (SGT)	**Renesas and LUPA Accelerate Automotive Smart Camera Development with Open Platform Turnkey Solutions** The current market dynamics with new emerging OEM customers and electrification create new demand for supply chain and flexibility both on technical solution and business model. Most smart camera turnkey solutions on the market today take a black box solution approach, making it challenging for OEMs and Tier 1s to address changing market demands and slowing down development. With EagleCAM featuring Renesas R-Car SoCs & Power devices, Renesas and LUPA introduce an open turnkey solution that delivers flexible, high-performance perception while shortening time to market and reducing the bill of materials (BOM) costs focusing on these new market and industry demands. In addition: the demand for automotive safety solutions is at an all-time high, by integrating the low-power, high-performance R-Car SoCs into our EagleCAM smart camera platform, we are making it easy for OEMs to add novel safety and driver comfort features to their next-generation vehicles. Our flexible approach speeds up product development cycles while enabling a safer, more fun driving experience for end customers. In the presentation the market trends in addition with the industry demands and requirements shall be shared. Here the system level perspective is key on ADAS & AD system trends.	 **Benjamin May** CEO Lupa Electronics (GmbH) *Renesas Partners*	

November 4 | 10:00-10:15 (EST) | 16:00-16:15 (CET)
November 8 | 14:00-14:15 (IST) | 16:30-16:45 (SGT)
Questions & Answers (Live)

Automotive Day 4 – Cockpit

Date and Time	Content Abstract	Speaker	
November 18 09:00-09:25 (EST) 15:00-15:25 (CET) 13:00-13:25 (IST) 15:30-15:55 (SGT)	**Higher Integration with R-Car Gen3e for Car Infotainment, Digital Cluster, and Integrated Cockpit** Especially for entry to mid IVI and digital cluster systems, developers are looking for cost-efficient solutions that allow them to minimize their bill of material and development efforts. The new Renesas R-Car Gen3e SoC family addresses these needs, offering a seamless upgrade path from the popular Gen3 with higher system performance and enhanced integration, fast boot, and FuSa capabilities. The presentation will introduce the R-Car Gen3e line-up and will show various examples how to achieve higher integration and functional safety, based on the embedded real-time CPU core, other hardware accelerators, and a related software package.	**Peter Bechberger** Director Automotive Digital Products Marketing Division, Automotive Solution Business Unit Renesas Electronics	**Tian Peng Lee** Field Application Engineer Automotive Strategic Sales Division, Automotive Solution Business Unit Renesas Electronics
November 18 09:25-09:35 (EST) 15:25-15:35 (CET) 13:25-13:35 (IST) 15:55-16:05 (SGT)	**Analog Product Solution for IVI/Cluster System** In-Vehicle Infotainment (IVI) systems and digital clusters are under ever-increasing price pressure, from component costs to development effort. In this session, we will introduce solutions to meet both of these challenges by introducing Renesas power management ICs (PMICs) and integrated timing ICs with proven compatibility with Renesas R-Car SoCs. We will also introduce our Winning Combinations that implement these key devices, allowing users to accelerate product development and expedite time-to-market.	**Keith Larson** Senior Manager Automotive Analog Product Marketing Division, Automotive Solution Business Unit Renesas Electronics	**Mohammed Yaseen** Manager Automotive New Business Creation Division, Automotive Solution Business Unit Renesas Electronics
November 18 09:35-09:50 (EST) 15:35-15:50 (CET)	**Leveraging All Cores to Deliver an Immersive eCockpit Experience** Join this session to discover the combination of Renesas' powerful R-Car family SoCs with Qt's automotive offering to deliver an immersive eCockpit experience in 2021 and beyond. As the demand for enhanced user experience (UX) and convenience in connected vehicles has been growing in a $28B global automotive HMI market, it is imminent in today's market and other mobility solutions to offer customers the UX input with interactive applications that were too expensive to implement previously. These applications include 2D/3D, animations, cluster UI, ADAS, navigation, media player, and other interactive environments. Learn more about: • R-Car Family offering of high-performance SoCs • Qt's HMI/Graphics tools for the automotive software market • Architecting eCockpit software to take advantage of all available cores for an immersive UIUX • Demo of a scalable HMI using Cortex A & R on R-Car with Qt for MCUs	**Åsa Forsell** Senior Product Manager Automotive, The Qt Company *Renesas Partners*	
November 18 13:35-13:50 (IST) 16:05-16:20 (SGT)	**Ecockpit Trends, Architecture & Challenges** Vehicle Digital Cockpit is trying to consolidate multiple traditional ECUs in a single system. Consolidation of ECU also needs proper partitioning and architecture of sub systems. This session will cover ecockpit ECU related: • Market trends • OEM needs and requirements • Architecture options • Architecture challenges • Tata Elxsi solution based on Renesas R-Car H3	**Vikrant Bhangay** Practice Head – Digital Cockpit Transportation Business Unit Tata Elxsi *Renesas Partners*	
November 18 | 09:50-10:05 (EST) | 15:50-16:05 (CET) | 13:50-14:05 (IST) | 16:20-16:35 (SGT) Questions & Answers (Live)			

Automotive Day 5 – xEV

Date and Time	Content Abstract	Speaker	
December 2 09:00-09:40 (EST) 15:00-15:40 (CET) **December 3** 13:00-13:40 (IST) 15:30-16:10 (SGT)	**Products and Solution for xEV Market** The xEV market is expected to grow significantly due to the increasing awareness of environmental issues and legislated CO_2 reduction policies. In this session, we will introduce products for traction motor inverters and battery management systems, key systems for electrified vehicles. Discussion will include how Renesas is contributing to the acceleration of customer development through our Winning Combination system solutions.	December 2 **Keith Larson** Senior Manager Automotive Analog Product Marketing Division, Automotive Solution Business Unit Renesas Electronics	December 3 **Srinivas Krishna Menon** Senior Manager Automotive New Business Creation Division, Automotive Solution Business Unit Renesas Electronics
December 2 | 09:40-09:55 (EST) | 15:40-15:55 (CET) **December 3 |** 13:40-13:55 (IST) | 16:10-16:25 (SGT) Questions & Answers (Live)			

Content of the Automotive Days is subject to change without any prior notice. We seek for your kind understanding.