

## AES – Automotive Ethernet Summit China 2021 2021第二届中国国际汽车以太网峰会

### Key Topics 关键词:

Automotive Ethernet, SOME/IP, Cyber Security, SOA, IVI, AUTOSAR, AVB/TSN, Adaptive Design

### Event Highlights 会议亮点

May 20th – 21st 2021, Shanghai China  
2021年5月20日-21日, 中国上海

- ✔ **2** Day's Just for Automotive Ethernet  
2天时间全面关注车载以太网
- ✔ **20+** Hours' Professional Keynote Speech  
超过20小时的大会主题专业发言
- ✔ **20+** Distinguished Speaker Sharing & Discussion  
20位以上行业专家倾力分享与讨论
- ✔ **30+** Automotive Makers' Attendance & Networking  
30多家汽车厂商参会和现场沟通
- ✔ **100+** Media Reports  
100多家媒体联合报道
- ✔ **200+** Delegates from the Whole Supply Chain Including OEMs, Tier1s, Software Providers, Hardware Providers, Etc.  
200位以上参会嘉宾, 覆盖整个产业链包括汽车厂商、一级供应商、软件提供商、硬件提供商等

### Hot Topics 热点话题

- 01 Development Trend of Global Automotive Ethernet Market and Industry Demand Analysis  
国内外车载以太网发展趋势与市场需求分析
- 02 Latest Standard of Automotive Ethernet and Industry Practice  
车载以太网最新标准及其实践
- 03 Advanced Safe and Reliable Automotive Ethernet Test Solution  
先进安全可靠的汽车以太网一致性测试方案
- 04 Case Study: Practical Application of Automotive Ethernet  
案例分析: 汽车以太网的实际应用分享
- 05 Service-Oriented Architecture (SOA) and Establishment of Automotive Ethernet Networks  
面向服务的架构 (SOA) 和车载以太网网络的搭建
- 06 Exploration of Mass Production of China's Automotive Ethernet Solutions  
中国车载以太网方案量产探索
- 07 Ethernet Application of In-Vehicle Infotainment (IVI) System  
车载信息娱乐 (IVI) 系统的以太网应用
- 08 AUTOSAR Ethernet Communication and Adaptive Design  
AUTOSAR以太网通信与自适应设计
- 09 Design and Implementation of IDS for AVB/TSN Networks  
AVB/TSN网络的IDS设计与实现



**AES2021**

**Future Car Innovation Week 2021, Enjoy 2 Leading Summits in Same Hotel:**  
**无人驾驶汽车创新周，2场高端峰会同时召开：**



**AES – 2nd Automotive Ethernet Summit China 2021 ( 5.20-5.21 )**  
**2021第二届中国国际汽车以太网峰会 ( 5.20-5.21 )**



**4th Autonomous Vehicle & AI Cockpit China Summit 2021 ( 5.20-5.21 )**  
**2021第四届无人驾驶及智能驾舱中国峰会 ( 5.20-5.21 )**

**Part of Car OEMs Attendees Previous Year 往届部分参会汽车整车厂家**



**Association Partners & Sponsors Previous Year 往届合作单位和赞助商**



**May 20th – 21st 2021, Shanghai China**  
**2021年5月20日–21日，中国上海**

## Welcome Address 欢迎辞



Automotive electrical systems continue to increase in complexity, a growing number of sensor controllers and connectors are sharing real-time data on a much broader level, thus increasing the demand for network bandwidth.

Traditional vehicle network bandwidth is facing great challenges now. To achieve the network speed demand with lower cost and better performance, next generation cars are turning to deploy Ethernet based communication. Since automotive Ethernet is gradually accepted & approved, automotive Ethernet is developing rapidly. According to Frost Sullivan and Strategy Analysis prediction that this year over 400 million automotive Ethernet ports will be deployed; by 2022, the number of automotive Ethernet ports will exceed all other deployed Ethernet ports totally. In 2025, the market penetration rate of automotive Ethernet will increase to 80%.

Nowadays, how to deploy a safe and stable automotive Ethernet route? What's the latest industry trend of automotive Ethernet?

Focusing on Chinese automotive Ethernet market's hot topics and challenges, AES – the 2nd Automotive Ethernet Summit China 2021 will be held in May. 20th – 21st, in Shanghai China.

As the Top1 automotive Ethernet summit in APAC, AES 2020 brought together OEMs such as SAIC, PSA, Changan, Geely, Great Wall, Jaguar Land Rover, Chery, NIO, ENOVATE, Renault S.A. etc. and more than 30 industry companies to participate. Base on the great success of last year, the 2nd AES 2021 will gather hundreds of industry leaders and experts from car OEMs, Tier1/Tier2 suppliers, Ethernet players, car software and gateway companies, automotive e/e suppliers, test solutions providers, auto cybersecurity providers, etc. exploring automotive Ethernet market opportunities, and sharing the latest practice cases with software & hardware innovation solutions. This summit will be surely a perfect business platform for you and industry professionals to cooperate on auto Ethernet projects!

随着车载电子变得日益复杂，越来越多的传感器、控制器以及接口对共享实时数据带宽的要求越来越高，因此传统车载网络在带宽上面临巨大挑战。为了满足车载网络速度、降低成本、提高网络性能等需求，下一代汽车正在转向以太网通信。随着以太网逐步成为业内共识，车载以太网获得了迅速发展。据全球著名的咨询公司Frost Sullivan和Strategy Analysis预测，今年全球将部署4亿个车载以太网端口；到2022年，全球部署的全部车载以太网端口将超过所有其他已部署的以太网端口总和，2025年，车载以太网的市场渗透率将增加至80%。

如何根据当前发展状况部署安全、稳定的汽车以太网？车载以太网趋势究竟如何？怎样把握主机厂对车载以太网的具体需求？聚焦中国车载以太网市场发展的热点与痛点分析，第二届中国国际汽车以太网峰会将于2021年5月20日-21日在上海举办。

作为亚太区顶尖的汽车以太网峰会，上届AES活动聚集了上汽、PSA、长安、吉利、长城、捷豹路虎、奇瑞、蔚来、天际、雷诺等多家OEM厂商和30多家业内企业共同参与，得到大家的一致好评。在去年成功举办的基础上，本届会议将汇集数百位主机厂商、汽车一二级供应商、传感器、汽车以太网厂商、车载软件和网关公司、汽车电子电器供应商、测试方案供应商、汽车安全企业等行业领袖与专家，共同交流探讨车载以太网市场发展，并分享最新应用案例及核心软硬件创新方案。相信此次峰会必能成为您与众多行业嘉宾针对汽车以太网项目进行商务交流的绝佳平台！

## Who Should Attend? 谁应参会?

### By Industry 按行业

Car OEMs, Tier1/Tier2 Suppliers, Automotive E/E Suppliers, Autonomous Vehicle Developers, Automotive Ethernet, Players, Car Software and Gateway Companies, Semiconductor Design/Manufactures, Telecom Operators, V2X/Automotive Network Companies, Test Solutions Providers, Auto Cable Harness Manufacturers, Auto Cybersecurity Providers, Auto Functional Safety Companies, Government, Industry Alliances  
汽车整车厂商、汽车一级、二级供应商、汽车电子电器供应商、自动驾驶汽车开发商、汽车以太网厂商、车载软件和网关公司、半导体设计制造公司、电信运营商、车载网络通讯公司、测试方案供应商、汽车线束公司、汽车网络安全公司、汽车功能安全公司、政府、产业联盟等

### By Job Title 按职位

CEO, CTO/CISO, President/VP, Executive Director, Technical/Marketing Director, Automotive Department Director, Head Product Development, Head of Automotive Ethernet, Business Development Manager, Test Solutions Manager, Automotive Infotainment Manager, Market Strategist, Applications Manager, Automotive E/E Architect, In-Vehicle Network Designer, Communication Networks Engineer, System Architect, Mechanical Engineer, Embedded Networks & Real-Time Simulations  
首席执行官、首席技术官/首席安全官、总裁/副总裁、执行总监、技术部/市场部总监、汽车部门总监、产品研发负责人、汽车以太网负责人、业务拓展经理、测试方案经理、车载娱乐工程经理、市场策略师、应用经理、汽车电子电器架构师、车载网络设计师、网络通讯工程师、系统架构师、机械工程师、嵌入式网络与实时仿真



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## Day 1 第一天

### Global Automotive Ethernet Standard and Layout 全球车载以太网标准与布局

#### 9:00-9:30 Development Trend of Global Automotive Ethernet Market and Industry Demand Analysis

##### 国内外车载以太网发展趋势与市场需求分析

- ◆ 5G, 10G Automotive Ethernet  
5G, 10G车载以太网
- ◆ Development Trends of Chips and Modules  
芯片和模组发展趋势
- ◆ Features of Advantage and Disadvantage  
主流车厂对车载以太网的实际需求

Mr. Fengmin Tang, Director, CATARC

唐凤敏 先生, 主任, 中国汽车技术研究中心

#### 9:30-10:00 Latest Standard of Automotive Ethernet and Industry Practice

##### 车载以太网最新标准及其实践

- ◆ 100BASE-T1 (P802.3bw) Standard  
100BASE-T1 (P802.3bw) 标准
- ◆ 1000BASE-T1 (802.3bp) Standard  
1000BASE-T1 (802.3bp) 标准
- ◆ 10BASE-T1S (short distance) 802.3cg  
10BASE-T1S (短距离) 802.3cg
- ◆ 1000BASE-RH

OPEN Alliance

#### 10:00-10:30 Connectivity Solutions for Ethernet and Their Standardisation

##### 汽车千兆以太网及其标准化的连接器解决方案

- ◆ Unshielded MTD® Connector and H-MTD® Connector for Both Shielded and Unshielded Cables  
非屏蔽连接器和适配屏蔽和非屏蔽线缆的连接器

Mr. Daniel BOSSENMAIER, Product Director Automotive, Rosenberger

Daniel BOSSENMAIER 先生, 产品总监, 罗森伯格

#### 10:30-11:00 Tea Break 茶歇

#### 11:00-11:30 Case Study: Practical Application of Automotive Ethernet

##### 案例分析: 汽车以太网的实际应用分享

- ◆ Architectural Basic Network Technology Development- Ethernet Design  
架构基础网络技术开发——基础以太网设计
- ◆ Physical Channel Design Requirements, Transceiver Selection and Configuration  
物理信道设计需求及收发器选型及配置
- ◆ Data Link Layer, Network Transmission Layer, Application Layer Function Analysis and Protocol Applicability Analysis  
数据链路层、网络传输层、应用层功能分析及协议适用性分析

Mr. Fadi Zara, Director of Vehicle Development and Electric Vehicles, FAW Group

Mr. Fadi Zara, 车辆开发与电动汽车总监, 一汽集团

#### 11:30-12:00 Service-Oriented Architecture (SOA) and Establishment of Automotive Ethernet Networks

##### 面向服务的架构 (SOA) 和车载以太网网络的搭建

- ◆ Architecture Design Principles and Methods  
架构设计原则和方法
- ◆ Protocol Stack and Software Architecture  
协议栈和软件架构
- ◆ Time Sensitive Networking (TSN)  
基于时间敏感网络的可靠通信 (TSN)
- ◆ SOME/IP (Scalable service-Oriented MiddlewarE over IP)  
SOME/IP 协议

Mr. Huanyu ZHAO, Vice President, vecentek

赵焕宇 先生, 副总裁, 为辰信安

#### 12:00-13:30 Lunch 午餐

### Application Practice and Safety Test of Vehicle Ethernet 车载以太网的应用实践及安全测试

#### 13:30-14:00 Evolution and Transition of Automotive Electronic Architecture System to Central Computing Platform

##### 汽车电子架构体系向中央计算平台演进和过渡

- ◆ How Does Central Gateway Handle Multiple Protocols?  
中央网关如何处理多协议?
- ◆ Protocol Analysis in Electronic and Electrical Architecture  
电子电器架构中的协议分析

Mr. Peng LIU, Automotive Electronics Senior BD Manager, NXP

刘鹏 先生, 汽车电子高级业务拓展经理, 恩智浦

#### 14:00-14:30 Ethernet Cable Connect to The Future of Autonomous Driving

##### 以太网链接构建未来自动驾驶技术

Mr. Huashan Yang, Product Manager, Leoni China

杨华山 先生, 产品经理, 莱尼中国

#### 14:30-15:00 Research on Multi-Safety Critical System based on TSN

##### 基于TSN的安全关键系统技术研究

- ◆ Efficiently Realize Timely Transmission of Key Communication Information  
高效实现关键通信信息及时传输
- ◆ Safety and Reliability  
安全性和可靠性

Dr. Hongchun WANG, Tsinghua University

王红春 博士, 副所长, 清华大学天津高端装备研究院

#### 15:00-15:30 Tea Break 茶歇

#### 15:30-16:00 How does Automotive Backbone Network Realize the Demand from 100M to 1G?

##### 汽车主干网络如何实现从百兆到千兆需求?

Open for Sponsor 赞助商

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## Day 2 第二天

### Advanced Vehicle Ethernet Design, Development and Test Plan 先进的车载以太网设计开发与测试方案

#### 16:00-16:30 Advanced Automotive Data Connection System Meets the Demands of Autonomous Vehicles 先进的汽车数据连接系统, 满足自动驾驶车辆的使用需求

- ◆ Signal Integrity and Electromagnetic Compatibility Specification Test  
信号完整性和电磁兼容性规范测试
- ◆ Time Synchronization and Communication in Redundant Networks  
冗余网络的时间同步与通信
- ◆ Meet the Growing Performance Needs of In-Vehicle Infotainment (IVI) System and ADAS Applications  
满足车载网络, 信息娱乐IVI和ADAS应用不断增长的性能需求

Mr. Tao XU, APAC Product Manager, TE Connectivity  
徐涛先生, 亚太产品经理, TE Connectivity

#### 16:30-17:00 AUTOSAR Ethernet Communication and Adaptive Design AUTOSAR以太网通信与自适应设计

- ◆ SOME/IP Interface Deployment and Conversion  
SOME / Ip接口部署和转换
- ◆ Network Topology Design  
网络拓扑设计
- ◆ Ethernet Cluster, VLAN, Switch Configuration  
以太网群集, VLAN, 交换机配置

DAIMLER 戴姆勒

#### 17:00-17:30 Functional Safety and Cyber Security of In-Vehicle Ethernet 车载以太网的功能安全与网络安全

- ◆ How to Ensure a High Degree of Real-Time Information?  
如何保障高度的信息实时性
- ◆ Ethernet Network and Fault Management  
以太网网络与故障管理
- ◆ Attack Defense  
攻击防御

KeenLab 腾讯科恩实验

#### 17:30-18:00 OEM Talks: Panel Discussion: 车厂专家“论道”-小组讨论: What's the Technical Route Plan of Global leading Car OEMs Regarding Automotive Ethernet? Will the Future Automotive Ethernet Use More and More Chip + Module Model or Will It Be Based on Current Technology Integration of Traditional Wiring Harnesses? How Does In-Vehicle Ethernet Enhance Users' Experience and Make them Willing to Pay for It? 主流车厂对汽车以太网的技术路线是如何规划? 未来以太网更多会使用芯片+模组模式, 还基于现在的传统线束的技术融合? 车载以太网如何提升用户实际体验并使愿意为此买单?

SAIC, Xpeng, GAC, Great Wall, DAIMLER  
上汽, 小鹏, 广汽, 长城, 戴姆勒

#### 9:00-9:30 Pre-Research on In-Vehicle Ethernet Usage Scenarios 车载以太网使用场景预研

- ◆ Automotive Human-Computer Interaction (HMI)  
汽车人机交互
- ◆ V2X Information Interconnection  
V2X信息互联
- ◆ FOTA & OTA  
FOTA与OTA

Mr. Alexander SCHWARZ, Head of Electronics-Architecture Infotainment and Communication, BMW

Alexander SCHWARZ 先生, 车载娱乐负责人, 宝马

#### 9:30-10:00 Exploration and Practice of Unmanned Vehicle TSN Network Solutions 无人驾驶车载TSN网络解决方案探索与实践

- ◆ IEEE AVB/TSN Protocol  
IEEE AVB/TSN协议
- ◆ Network Security Protocol  
网络安全协议

Dr. Hailong ZHU, Project Leader, Purple Mountain Laboratories  
朱海龙先生, 课题负责人, 紫金山实验室

#### 10:00-10:30 Automotive Microcontrollers and Microprocessors for Smart Gateway Solutions ST汽车智能网关方案及产品

- ◆ Secure OTA for Connected Cars  
安全OTA保障网联汽车
- ◆ Smart Gateway ECU and Smart Gateway Platform  
智能网关ECU与平台

Mr. Proton ZHANG, Marketing Manager ADG ADS GCSA, STMicroelectronics

张儒靖先生, 市场经理, 意法半导体

#### 10:30-11:00 Tea Break 茶歇

#### 11:00-11:30 Automotive 1G Ethernet PHY Solution 汽车千兆以太网PHY解决方案

- ◆ Safe Ethernet Switch and PHY Product Portfolio  
安全的以太网交换机及PHY产品组合
- ◆ Energy Efficiency and Cyber Security Features  
能源效率及网络安全功能
- ◆ Realize Simulation-Based EMI Verification and Optimization between ECUs  
实现基于仿真的EMI验证和ECU之间的优化

Marvell 美满电子

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**11:30-12:00 Automotive Ethernet Protocol Stack Application**  
**车载以太网协议栈应用**

- ♦ AUTOSAR Ethernet Protocol Stack (Including Software Architecture, Interface Process), DoIP Introduction  
AUTOSAR 以太网协议栈 (含软件架构、接口流程)、DoIP 介绍
- ♦ SOME/IP Protocol, SOME/IP Module, SD (Service Discovery) Module  
SOME/IP协议、SOME/IP模块、SD (Service Discovery)模块

**iSoft Infrastructure Software 普华基础软件**

**12:00-13:30 Lunch 午餐**  
**Innovation and Application Trends of Automotive Ethernet**  
**车载以太网创新和应用趋势**

**13:30-14:00 Viewpoints of New Automakers: Automotive Ethernet Driven by Autonomous Vehicle (AV) Systems**  
**新势力造车观点：汽车自动驾驶系统驱动下的车载以太网**

- ♦ AUTOSAR Architecture Design  
AUTOSAR架构设计方案
- ♦ Camera Field Application  
摄像头领域应用
- ♦ Extended Exploration of Other Regional Applications  
其他区域应用延伸探索

**Xpeng 小鹏汽车**

**14:00-14:30 Exploration of Mass Production of China's Automotive Ethernet Solutions**  
**中国车载以太网方案量产探索**

**NIO 蔚来**

**14:30-15:00 Data Transmission Medium Vehicle Ethernet Cable Technology**  
**数据传输媒介车载以太网电缆技术**

- ♦ Signal and Stability Analysis of Twisted Pair Cable  
双绞线电缆信号及稳定性分析
- ♦ Shielded Twisted Pair (STP) and Unshielded Twisted Pair (UTP)  
屏蔽双绞线 (STP)非屏蔽双绞线 (UTP)
- ♦ Product Exploration of Coaxial Cable Used in High RF Requirements  
同轴电缆应用于高射频需求的产品探索
- ♦ Plastic Optical Fiber POF Ethernet Application  
塑料光纤POF以太网应用

**Acome**

**15:00-15:30 Tea Break 茶歇**

**15:30-16:00 Ethernet Application of In-Vehicle Infotainment (IVI) System**  
**车载信息娱乐 (IVI) 系统系统的以太网应用**

- ♦ Intelligent Cockpit, Video infotainment System and Ethernet Innovation  
智能座舱影音信息娱乐系统与以太网
- ♦ Infotainment Unit New Operating System Cloud Access Updates and Upgrades  
信息娱乐单元新的操作系统云访问更新和升级

**Mr. Jianxiang LU, Director of Infotainment & Software Development, PATAC**  
**陆健翔 先生, 电子系统及软件部软件开发总监, 泛亚**

**16:00-16:30 Automotive Ethernet Supports Auxiliary Vision Domain Controller Data Transmission and Processing**  
**车载以太网支持辅助视觉域控制器数据传输和处理**

- ♦ Big Data Processing and Transmission  
大数据处理和传输
- ♦ Database Creation Tool  
数据库创建工具
- ♦ Testing and Verification  
测试与验证

**Mr. Xin WANG, Executive Engineering Director, Aptiv**  
**王忻 先生, 亚太区首席技术官, 安波福**

**16:30-17:00 Towards to a Fully Automotive Ethernet-Based Vehicle Infrastructure**  
**迈向基于汽车以太网的完整汽车基础设施建设**

**SAIC Motor 上汽**

**17:00-17:30 Automotive Ethernet Security Enhancement**  
**汽车以太网安全强化**

- ♦ Security of Data Exchange  
数据交换的安全性
- ♦ Support System-Level Functional Safety Compliance  
支持系统级的功能安全合规
- ♦ Prevent Security Threats such as Intrusion, Man-in-the-Middle and Replay Attacks  
防止入侵、中间人及重放攻击等安全威胁

**Mr. Jhenu SUBRAMANIAM, Automotive Ethernet Expert & Cyber Security Manager, Geely**  
**Jhenu SUBRAMANIAM 先生, 汽车网络安全经理, 吉利**

**17:30-18:00 Panel Discussion:**  
**小组讨论:**  
**What Are the Future Innovation Directions of Ethernet? With the Increasing Maturity of ADAS and Autonomous Vehicle Technologies, How to Grasp the Opportunities of Automotive Ethernet Industry?**  
**以太网未来的创新方向有哪些? 在ADAS及无人驾驶技术日趋成熟的趋势下, 如何把握以太网产业机遇?**

**Valeo, SAIC Motor, Aptiv, Magna**  
**法雷奥, 上汽, 安波福, 麦格纳**





## Highlights of Concurrent Summit: 4th Autonomous Vehicle & AI Cockpit China Summit 2021

### 同期活动：2021第四届无人驾驶及智能驾舱中国峰会

-  The Current Situation and Future Development Trend of Global Autonomous Vehicle Technology Market  
全球自动驾驶汽车技术市场现状及未来发展趋势
-  Key Driving Factors for Future Intelligent Driving: Vehicle-Road Collaboration in the 5G/C-V2X Environment  
未来智能驾驶关键推动因素5G/C-V2X环境下的车路协同
-  Technologies and Applications for Mass Production of L4 Autonomous Vehicles  
L4级别自动驾驶汽车量产技术与应用
-  AI Chips Escort the Implementation of L3 Autonomous Driving Technology  
AI 芯片为L3智能驾驶技术落地保驾护航
-  Real Data Conversion of Driving Behavior and Autonomous Driving Simulation Test  
驾驶行为的真实数据转化及仿真测试
-  Super AR HUD and High-Precision Map HDM Navigation Integration  
Super AR HUD与高精度地图HDM导航融合
-  "0 Physical Button Era"-the Development Trend of AI Cockpit Centered on Users  
“0物理按键时代”——以用户为核心的智能驾舱发展趋势
-  Internal Perception and HMI, Gesture Perception and Intelligent Assistant  
内部感知与人机交互、手势感知与智能助理
-  Biometric Technology Application, Biometric Access and DMS, Image Sensing  
生物识别技术应用、生物识别进入与DMS、图像传感
-  Domain Controller Empowers AI Cockpit System  
域控制器赋能智能驾舱系统