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Smart Mobility and Automotive Semi- Annual Update

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1H 2018

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Automotive Semi-Annual Update: 1H 2018

Autonomous Driving Partnerships, Solid-State LiDAR Sensors, Sensor Data Crowdsourcing, Modular Hardware Architectures, HMI, 802.11p and 3GPP Rel.14 V2X, Bi-Directional V2G, OEM Mobility Explosion, New Mobility Experiences, Multi-Modal Smart Mobility

Rinspeed Snap Concept



BMW Wireless Charging



- **Autonomous Driving:** Level 4/5 targeted for 2022 onward. Public-use trials underway in United States (Uber/Waymo/GM). Intel-Mobileye, NVIDIA, and Baidu gaining significant traction. Samsung launches DRVLINe platform. Simulation becomes a must-have for Audiovisual (AV) development.
- **Sensing:** “Vision first” based architectures have consolidated position. Solid-state Light Detection and Ranging (LiDAR) moving from trials and investment to formal supplier relationships (Innoviz /BMW). Crowdsourcing of datasets to deliver new connected car services (SENSORIS)
- **Architectures:** Adoption of centralized compute platforms and domain controllers to simplify architectures. Modular approaches will help scale and maintain autonomous vehicles (Rinspeed Snap / Toyota ePalette, DRVLINe) as well enable the vehicle to assume multiple use cases (personal transit, delivery, and retail)
- **Vehicle-to-Everything (V2X):** Both Dedicated Short-Range Communications (DSRC) and Cellular V2X (C-V2X) continue to gain momentum. Toyota, VW, and Hyundai opt for DSRC, while Ford partners with Qualcomm for C-V2X deployment . Groupe PSA also leaning toward C-V2X
- **Electric Vehicles (EVs):** BMW first to implement wireless charging. Internal Combustion Engine (ICE) bans in place for 2030/2040 in multiple countries, increasing focus on Vehicle-to-Grid (V2G). Most Original Equipment Manufacturers (OEMs) will offer EV options on all models by 2030.
- **Smart Mobility:** OEMs go down partnership route (Ford, Toyota ePalette), rideshare investment in other mobility modes (bike sharing)

Key Competitor Activity

Competitor Highlights

- Autonomous Driving**
 - Intel-Mobileye secures contract to supply 8 million autonomous vehicle platforms to a European OEM
 - NVIDIA Drive Pegasus selected by Bosch and Daimler for robo-taxi implementations
 - NVIDIA launches Constellation simulation solution
 - Audi partners with Cognata for AV simulation
 - Samsung announces DRVLINe autonomous platform
- Automotive Sensing**
 - Innoviz secures contract to supply BMW from 2021 onward in association with Tier One Magna
 - FLIR open-source thermal image annotated datasets to catalyze Artificial Intelligence (AI) development
 - ERTICO publishes first SENSORIS standard for sensor data sharing
- Automotive Architectures**
 - Toyota ePalette demonstrates modular Hardware (HW) for use case differentiation
 - Rinspeed Snap demonstrates modular HW for use case differentiation
 - Valens launches chipset to support long-range Peripheral Component Interconnect Express (PCIe) connectivity
 - NVIDIA, VW, Aquantia among founding members of NAV Alliance for next-gen in-vehicle Ethernet
- V2X**
 - Toyota and Lexus to launch DSRC in United States
 - Hyundai invests in DSRC developer Autotalks
 - Ford partners with Qualcomm to deploy C-V2X
- EVs**
 - BMW selects WiTricity for wireless charging
 - BP acquires Chargemaster (United Kingdom)
- Smart Mobility**
 - HERE launches HERE Mobility
 - Uber launches Jump bike share initiative
 - Lyft acquires Motivate, launches Lyft Bikes

Driverless Smart Mobility



Source: Toyota

Suggested Additional Reading

- Transformative Connected Car Services Built on Data Crowdsourcing ([AN-2605](#))
 - Smart Mobility Maintenance: Modular Hardware, OTA Updates, and Prognostics ([AN-2601](#))
 - Global Ridesharing Vendors Competitive Assessment ([CA-1238](#))
 - Hot Tech Innovators: Automotive Electrification ([PT-1877](#))
 - Biometrics in Automotive ([PT-1789](#))
 - Webinar: Smart Mobility, Smart Cities, and Smart Home: the Holy Trinity for Automated Living? ([PT-2144](#))
 - Vehicle and Mobility Market Data ([MD-MOBI-102](#))
 - Connected Car Market Data ([MD-CCAR-102](#))
 - Advanced Driver Assistance Systems Market Data ([MD-ADAS-112](#))