



January 2024

1001 – 2024

CES 2024 – FLASH REPORT

Consumer Electronics Show

About SBD Automotive

Management & technology consultants to the automotive industry for over 20 years

Our expertise:

Connected

Autonomous

Shared Mobility

EV

Cybersecurity

Anti-theft



Click to find out more

Our role:

As our industry faces...

We provide our clients with...

Uncertainty



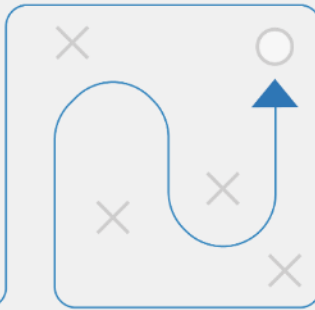
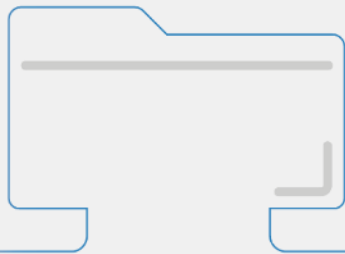
Data



Insight



Advice



Seeing Beyond Data

Turning data into actionable advice



Research Portfolio



Consulting Services



Contact Us

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- Last Mile Delivery
- Navigation
- Occupant Monitoring
- Shy Tech
- Sustainable home tech
- VTOL



Customer Feedback
Provide your feedback to
SBD regarding this report





Introduction

A brief introduction to the Consumer Electronics Show and this flash report



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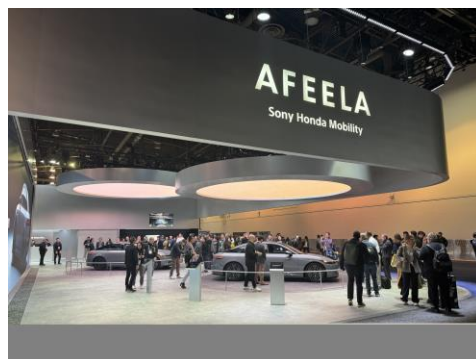
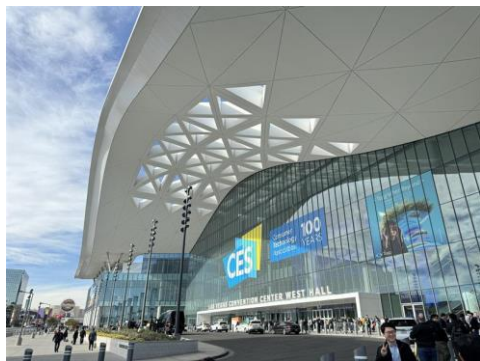


What was CES 2024?

The 2024 edition of CES was held in Las Vegas from 9 – 12 January. The aim of the event is to give businesses the opportunity to showcase their novel technologies and for professionals working in the electronics and automotive sector to network. There was dedicated areas for startups to show their products or services.

CES is held every year and in 2024, the event was split between the Las Vegas Convention Center and in Las Vegas city center. CES is attended by vehicle manufacturers, technology companies, consumer electronics companies and software providers.

This report provides a summary of the main trends from CES 2024. This includes OEM trends, latest research announcements, novel products, and significant announcements.



Report Focus

Our 2024 CES Premium Report provides a summary of the key automotive conferences, trends, products, and announcements from OEMs, suppliers and start-ups who attended the event.

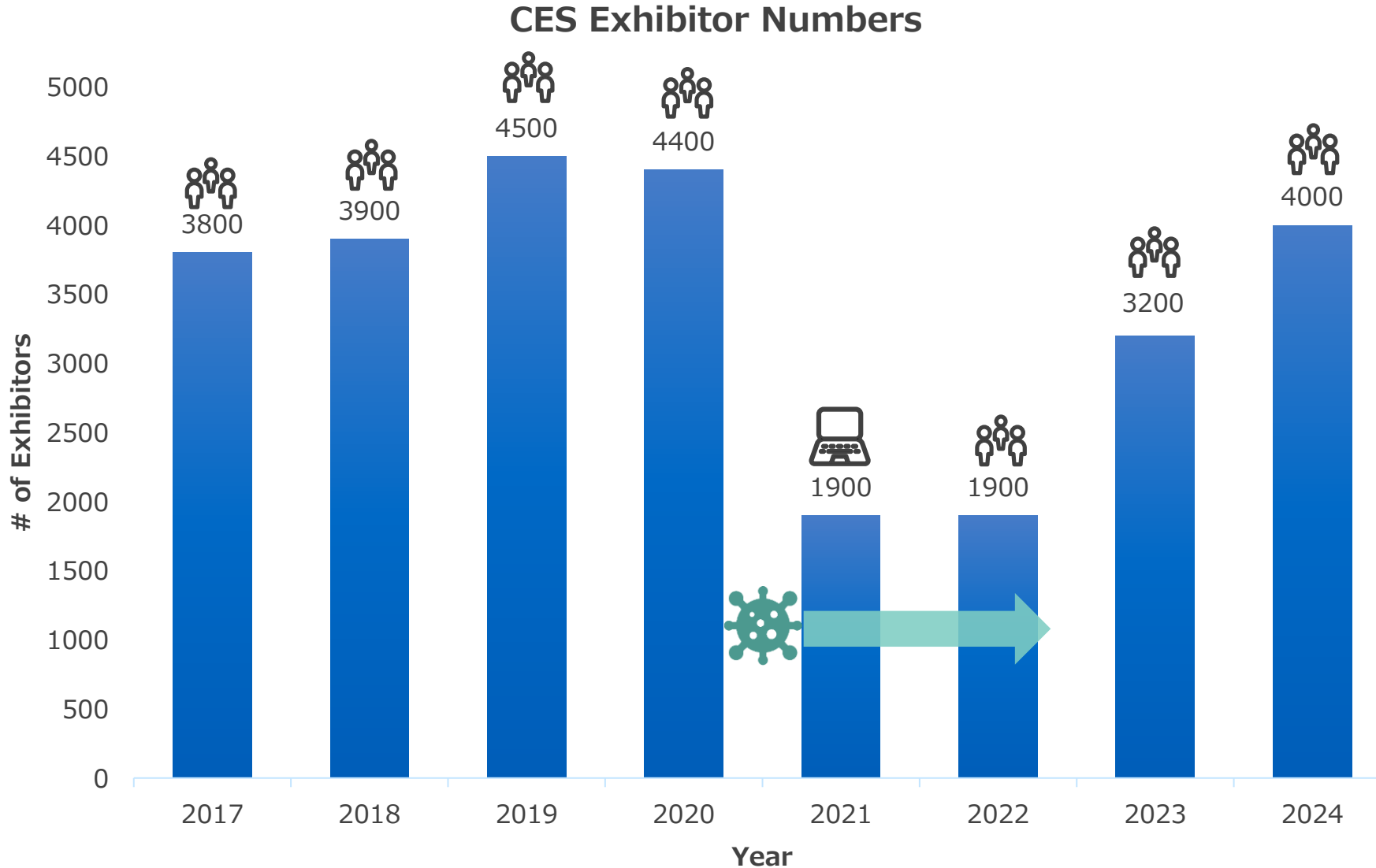


CES Premium Event Report

The CES Premium Event Report provides comprehensive insights into the full scope of what the Las Vegas event offers the automotive industry, taking a deep dive into its reveals and trends, alongside key talking points, announcements and in-depth analysis.

[Learn more](#)

Exhibitor numbers edging closer to pre-COVID levels



10
OEMs exhibiting

13%
Increase in visitors
(130k in 2024)

30%
Reduction in exhibiting
OEMs in 2024

100+
Automotive exhibitors



AI enables natural communication with vehicles at CES 2024

Generative AI stole the limelight of CES 2024, with a wide range of use cases being showcased by automotive exhibitors.



2018

Personalised
Car



2019

Shy
Car



2020

Auditory
Car



2021

Augmented
Car



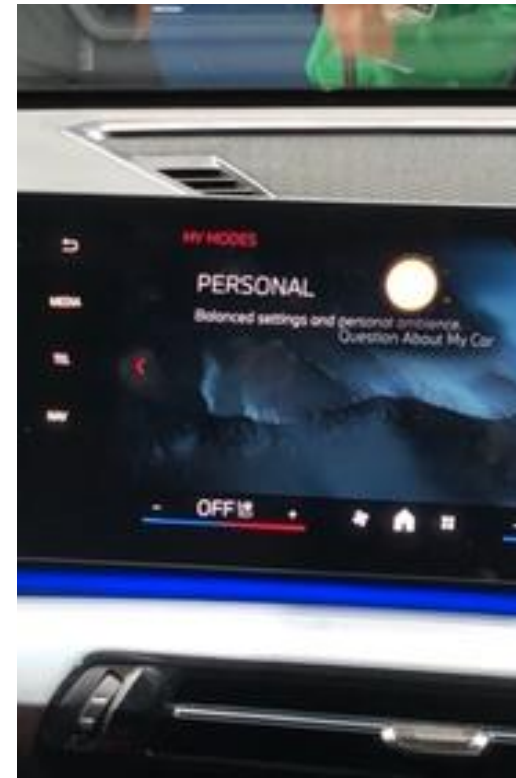
2022

Immersive
Car



2023

Practical
Car



2024

Conversational
Car

The overall theme for CES 2024 was “AI for all”. This trend was seen prominently throughout the automotive exhibitors as generative AI stole much of the attention with a varied range of implementations. These include personalization of the user experience, integration into in-car voice assistants as well as a chatbot alternative to an owner's manual.



CES 2024 – Insights from the show floor



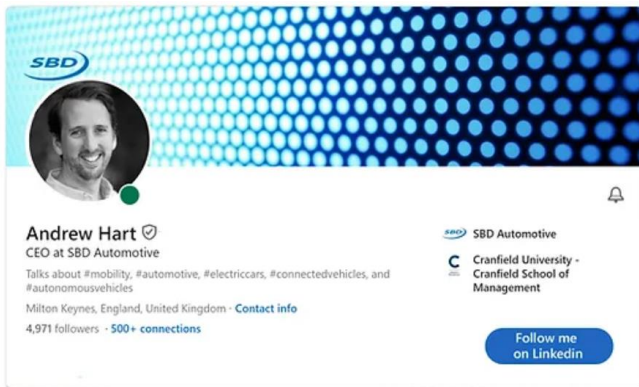
Automotive technology trends at CES 2024



SBD Automotive and HERE Technologies: Trends for software-defined vehicles



Team updates: Live from the show floor



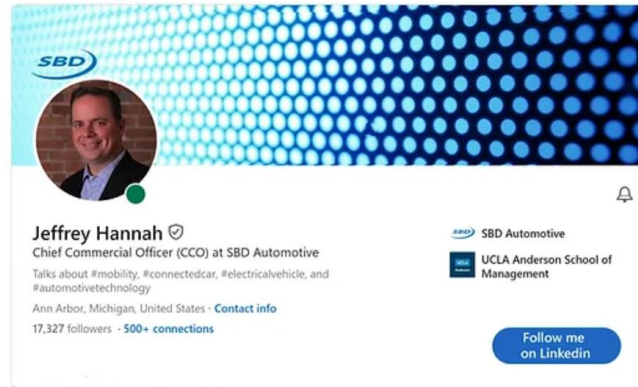
Andrew Hart ✓
CEO at SBD Automotive

Talks about #mobility, #automotive, #electriccars, #connectedvehicles, and #autonomousvehicles

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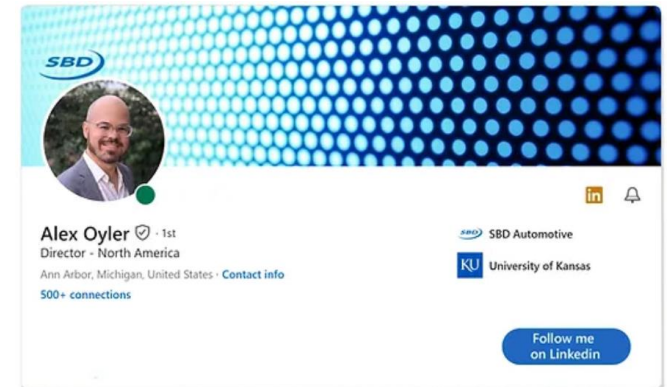
Jeffrey Hannah ✓
Chief Commercial Officer (CCO) at SBD Automotive

Talks about #mobility, #connectedcar, #electricalvehicle, and #automotivetechnology

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Director - North America

Ann Arbor, Michigan, United States · [Contact info](#)

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What impressed the SBD team the most?



Samsung SmartThings

"Compelling vehicle and smart home demonstrations from Samsung and Google demonstrating numerous convenience and sustainable use cases"



Afeela prototype

"Not a single thing but 3 things: 1) automotive was in every hall - West, North, Central - it's taken over. 2) how 'real' the Afeela felt, 3) sustainable tech - something for OEMs to think about as people start to think about how to convert to sustainable homes. For example, the Jackery portable solar generator, also how involved Panasonic is in sustainable tech overall"



LG Transparent TV

"The transparent displays - the quality is beyond what I thought it would be, and the automotive application is definitely there."



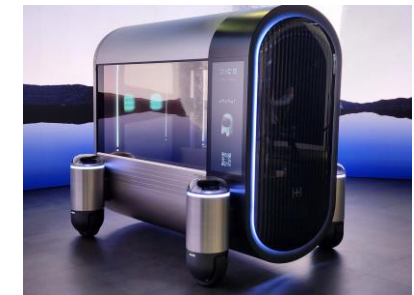
Hyundai MOBION

"The Hyundai MOBION. It is solving real-world use cases with innovative applications of technology at a show where most were trying to find innovative use cases for new technologies. The way it used light to communicate with pedestrians felt like a huge step forward."



Volkswagen ID.7 with IDA

"Cerence did a good job of showing how to properly integrate AI in a controlled and well thought out way for VPA. This is done by making sure it's learning to be contextual and recognize it is integrated in a vehicle and not just someone using ChatGPT searching on a computer."



Hyundai DICE concept

"Hyundai's global vision around hydrogen spanning education, production, distribution, and integration into its global transportation ecosystem"



What impressed the SBD team the most?



Elektrobit Next Gen Digital Cockpit

"I was impressed by the Elektrobit Next Gen Digital Cockpit. This demonstrated a great AI use case in personalizing the user experience. This allows users to control widgets and display themes using their theming engine."



ABB bus pantograph

"I really liked the ABB E-Mobility charging options offered. Mainly the pantograph for busses. This allows busses to easily charge at home base but also along the route without the driver having to do anything."



Xreal AR glasses

"I was impressed with some of the AR technology. I got a chance to try the Xreal glasses (the AR glasses that Nio partnered with) and I was very impressed with the video quality. The sound quality was lacking but you can pair AirPods or something to the device you are connected to as a work around."



OpenSynergy Software Development Platform

"Explosion of enablers, developer tools and cloud-based systems to accelerate software defined vehicle development, validation, and services (Thundersoft, Blackberry, Sibros, AWS, Sonatus, QUALCOMM, NVIDIA - too many to name here!)"



"The philosophies of the Honda Zero Series, in particular electrical efficiency and optimized cabin space, are refreshing. These goals will be hard to achieve but show that Honda has given careful consideration to the real-world characteristics that electric vehicles must have."



MBUX virtual assistant

"The idea of implementing generative AI in automotive features has been seen in multiple OEMs in CES 2024, one of the highlights must be the MBUX virtual assistant, which can create a really natural and empathetic interaction with users on many functions."

| CES 2024 – Full Event Report

Get your copy of the full, in-depth CES Event Report

The CES 2024 Premium Event Report is part of a 3-part **Premium Event Report Series**. It provides comprehensive insights into the full scope of what the Las Vegas event offers the automotive industry, taking a deep dive into its reveals and trends, alongside key talking points, announcements and in-depth analysis.

The Premium Event Reports Series works to understand the implications of these reveals for the industry at large. This report series spans several events taking place over the year, including CES 2024, with new entries released within two weeks of the event.

Find out more



Request Price



	Flash Report	Full Event Report
Pages	33	225+
Trends	✓	✓
Conferences	-	✓
Innovation Awards	-	✓
OEM Announcements & Analysis	-	✓
Supplier Announcements & Analysis	-	✓
Start-up Announcements & Analysis	-	✓





Key Takeaways

The key trends from CES 2024



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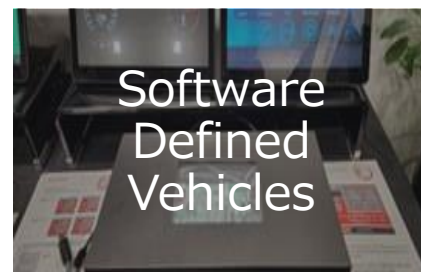
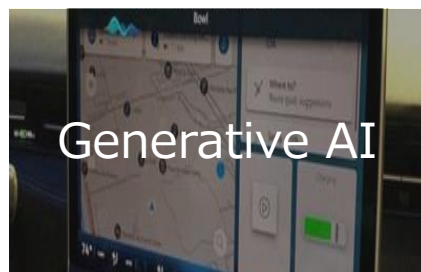


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CES 2024 Top Trends

Core trends



2024

Supporting trends

ADAS & Autonomy

Navigation

Cloud Services

Occupant Monitoring

Displays

Shy Tech

Fleet Management

Sustainable home tech

Last Mile Delivery

VTOL



Electrification (1/2)

CES continues as an EV launchpad for OEMs



Togg T10F

- Several OEMs used CES 2024 to launch their new EV models and as well as show off their EV concepts. However, most major American OEMs were not present at the show leaving Mullen as the only domestic OEM to launch a new model at CES this year.
- Turkish OEM Togg launched their T10F model at the show. This model will be available in Europe from 2025.
- Mullen debuted their performance EV model, FIVE RS at CES 2024.
- VinFast launched an EV concept as well as their mini eSUV VF 3 EV.
- Sony-Honda Mobility showcased latest incarnation of their Afeela sedan EV prototype, which is closer to production ready.

AFEELA



OEMs tease new EV platforms



Mercedes Concept CLA Class

- Concepts cars were used to tease a variety of upcoming new vehicle platforms at CES 2024. These platforms are primarily designed to support electrified driving.
- Honda announced their upcoming Honda 0 Series which is their dedicated EV platform due to launch in market in 2026.
- Kia unveiled their PBV (Platform Beyond Vehicle) Series of vehicles which will enter the market in 2025.
- Mercedes-Benz debuted their Concept CLA-Class in the North American market. This concept is based on the Mercedes-Benz Modular Architecture (MMA) Platform, designed for EVs, which will first enter the market in 2024.



Electrification (2/2)

Wireless EV charging solutions are unveiled



WiTricity inductive charging solutions

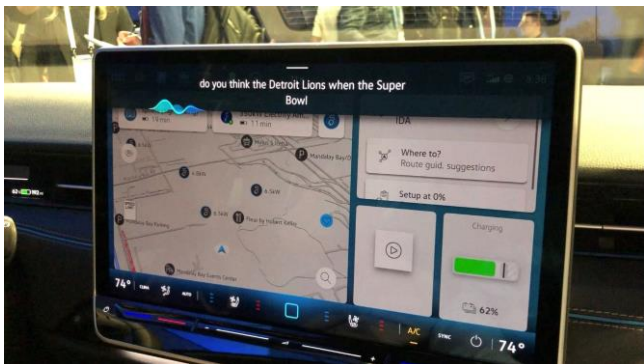
- Valeo displayed their Ineez Air Charging system. This is an inductive charging system capable of supporting V2G and has an efficiency above 90%.
- WiTricity unveiled their new wireless charging solution, WiTricity Halo, for light electric vehicles such as golf carts. WiTricity Halo will be released later in 2024. The company also showcased their existing inductive charging solution for electric passenger vehicles.





Generative AI (1/2)

AI for in-vehicle experience



Volkswagen ID.7 with IDA

- Several companies at CES 2024 showcased AI to support the in-vehicle experience. These implementations centered around voice interactions to promote a safer driving experience.
- Volkswagen announced during their media day press conference their IDA voice assistant will be powered by the AI model ChatGPT. The AI powered voice assistant will be available on the ID.7, ID.5, ID.4, ID.3, the all-new Tiguan, the all-new Passat, and in the new Golf. It will be a standard feature in these vehicles from Q2 of this year. Built with Cerence using their Chat Pro.
- Elektrobit showcased their next gen digital cockpit powered by the Unreal 5 engine. It will have ChatGPT integration and will be available in 3-4 years.
- Mercedes-Benz unveiled improvements to their MB.OS with an emotionally intelligent AI virtual assistant. The AI interacts with the user with four different emotions and proactive intelligence to enhance the driving experience.



AI powered owner's manual



BMW Alexa powered AI voice assistant in X1

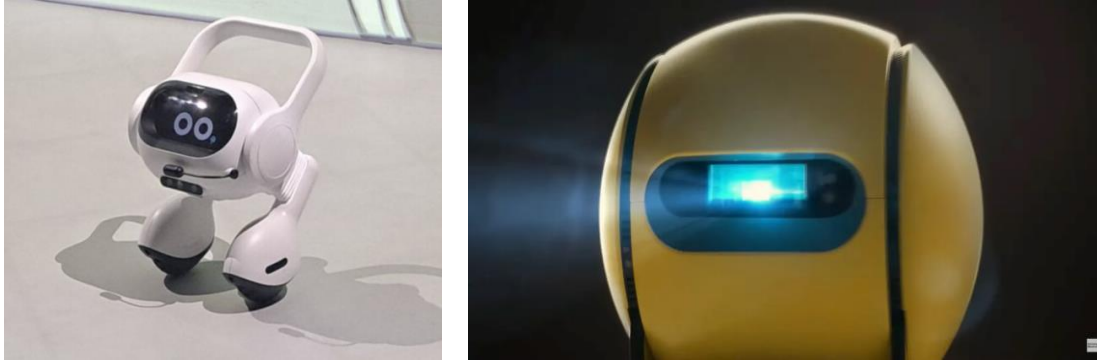
- AWS and BMW partnered to bring the generative AI experience to the vehicle with the intent on creating a vehicle expert. Amazon has trained their Alexa LLM on the BMW X1 owner's manual. With this, Alexa could be used to ask about vehicle functionality and change vehicle settings. (In addition to owner's manual and vehicle information, the Alexa voice assistant can control vehicle functions such as climate and music. It can also control Alexa enabled home devices.)
- Cerence offered a range of AI demos, one centered on their car knowledge solution. This demo showed generative AI being used to answer queries regarding the vehicle owner's manual. It is currently offered in some Ford models in the US. It is also available in BMW, Audi, Porsche, and 2 Chinese OEMs.





Generative AI (2/2)

Non-automotive exclusive examples



LG Smart Home AI Agent (Left) and Samsung Ballie 2 (Right)

- Companies showcased generative AI capabilities outside of automotive as well at CES 2024.
- Google was active in the AI space with their Duet AI for Gmail. This is intended to act as a co-pilot for the user, integrated within their Google Workspace and Cloud apps. The Google Magic Compose was also on show which leverages AI to produce a response to a text message.
- Personal assistant robots from LG and Samsung incorporated AI to power their interactions with customers. LG released their Smart Home AI Agent and Samsung released an update to their previous AI robot, Ballie 2. These robots can control smart home devices and interact with owners.





Hydrogen

Exhibitors unveil hydrogen visions



Hyundai DICE robotaxi concept

- Despite the emphasis on electrification at CES 2024, visions of a future powered by hydrogen were teased by Hyundai and SK.
- Hyundai showed off their vision for a hydrogen-powered ecosystem, including hydrogen powered concept vehicles such as the DICE robotaxi. Furthermore, Hyundai also announced that their hydrogen fuel cell brand, HWTO, will evolve into a hydrogen value chain business brand.
- SK's exhibit included a small train that was powered by a SK hydrogen system as part of their interactive amusement park, SK Wonderland. Attendees to the show were able to ride the train around the SK booth.



Hydrogen truck technology showcased



Nikola hydrogen truck

- Some exhibitors went beyond presenting hydrogen visions and concepts and showcased technologies in-development or market ready.
- Bosch announced that they are producing a hydrogen-powered engine for heavy vehicles, expected to debut in 2024.
- Nikola showed their production Class 8 hydrogen truck. The company also announced that they've produced 42 of these vehicles.
- Paccar showed off their hydrogen-powered Kenworth T680 FCEV truck.





Software-Defined Vehicles

Suppliers helping to reduced the number of CPUs in the vehicle



Continental HPCs used in BMW

- Exhibitors are focusing on a Zonal architecture with two high-performance computers. Most of the time, one can be used, but two is preferred for redundancy.
- Continental and Bosch released their latest Cross Domain High-Performance Computer, which allows for the cockpit and ADAS features on one chip.
- Modern HPCs can process more data, which allows for predictive maintenance, traffic routing optimization, and better user experience in the infotainment system.
- LG's aWare concept is a user-focused software solution to help with each step of the SDV, from development to in-cabin experiences. This software suite supports their vision of cars being a 'living space on wheels'.



BOSCH



Faster and better Software Development Platforms



OpenSynergy Software Development Platform

- Many exhibitors showcased technologies for software development. Some used the cloud, remote access systems, and self-hosted options. One such company is OpenSynergy.
- Stellantis is leveraging Blackberry QNX for its virtual cockpit to speed up the development lifecycle, allowing for new features to reach the customer much faster.
- Tier 4 launched the Co-MLOps project, this project aims to share sensor data globally.



ADAS & Autonomy (1/2)

Advanced parking solutions



HL Mando Parkie robot that can lift vehicle by tired and move it autonomously

- Bosch's prior work with CARIAD demonstrated an autonomous valet parking solution at the Stuttgart airport in Germany. At CES 2024, Bosch expanded on this valet service by showing an app that can be used to facilitate EV charging via a robotic arm and the valet parking system. Another Bosch concept involved a vehicle coming off an OEM assembly line and being autonomously driven to a lot. This would remove the need for a driver in that role.
- Continental also showed their Automated Valet Parking Type 2 (AVP2) at CES. This system would support valet parking via infrastructure and telematics for ADAS-equipped vehicles.
- An autonomous valet parking robot from HL Mando, called Parkie, won a CES Innovation Award. It is an autonomous robot that can go underneath a vehicle, mount to the tires, and then move the vehicle into specific spots. A mobile app allows vehicle owners to track the vehicle location and reserve services.

Asian autonomy players make Western splash



WeRide Robobus at CES 2024

- Autonomous players in Asia showcased different forms of mobility and technology at CES 2024.
- WeRide is an autonomous driving technologies company which showcased their Robobus at CES 2024. They look to launch this product globally but are unsure of a current timeline due to regulation differences between regions.
- Hyundai Motor Group's global software center, 42dot, helped support the OEM group's vision of a smart city powered by autonomous technology.

42dot

WeRide



ADAS & Autonomy (2/2)

Lidar developments



Innoviz Two lidar with 0.05° resolution can distinguish between fingers

- Lidar was a large focus at CES 2024. Many companies were showcasing devices that can be incorporated into the vehicle and used for ADAS/Autonomy.
- Notable advancements include Lidwave's optical system integrated into one chip which is capable of instantaneous velocity calculations and Innoviz's lidar, the InnovizTwo, with 0.05° horizontal and vertical resolution.
- Other key advancements looked at the housing for lidar solutions. AGC showcased a glass vehicle trim to integrate lidar seamlessly into the roof. AutoL showed their rotating lidar solution which was encased in a box housing for easier cleaning with a wiper.



Map-based and map-less solutions



Mobileye DXP behaving differently in same situation based on custom settings

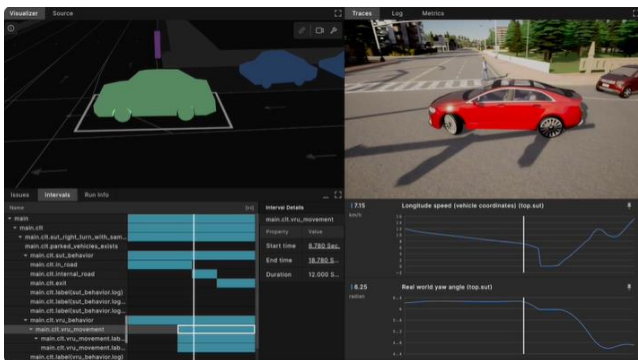
- Companies at CES 2024 were involved with both map-based and map-less solutions for autonomy.
- One map-based solution on display was TomTom's Orbis map. It combines layers of standard-definition and high-definition maps to support their autonomous driving.
- The map provider HERE recently announced they will be supplying HD maps for BMW level 3 systems. For this, they will be supplying their HERE HD live map which includes road condition and lane level information.
- Mobileye was present at CES showcasing their new Driving Experience Platform (DXP). This platform will allow OEMs to customize the automated driving experience allowing for brand differentiation.
- One map-less solution for autonomy was from Imagry. They were showcasing their SW stack product for perception and motion planning as well as their autonomous bus. In addition, they announced their new Safe Driver Overwatch product which acts a co-pilot, only intervening autonomously when necessary.





Cloud services

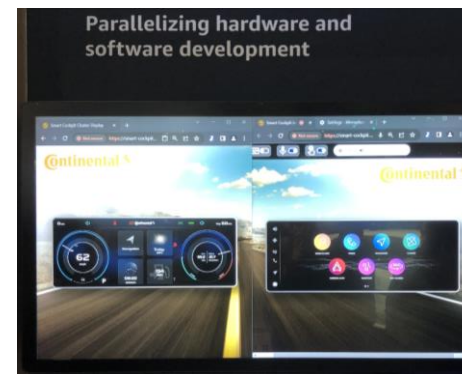
Cloud simulations



Foretellix Level 2+ ADAS simulation

- The cloud is being leveraged to run simulations for various automotive applications including software development and autonomous testing.
- AWS provides cloud services to companies who want to test their vehicle software in the cloud before physical testing. This allows for reduced development times due to quick turn around of virtual testing compared to physical testing.
- Other companies such as dSpace, Foretellix, and IAV Automotive Engineering offer services to aid autonomous vehicle software testing. These tests leverage cloud technologies to run simulations to test autonomous software.

Decoupled software and hardware development



AWS demo on parallel HW and SW development

- AWS had demos of several different cloud services they could provide customers at their booth at West Hall.
- One demo at their booth showed how AWS can provide cloud services to allow for parallel software and hardware development. Developers can work in the cloud to write software for virtual hardware that matches the specs of the final product while the hardware is being developed. This reduces the time to develop as hardware and software development can occur in tandem.
- BlackBerry launched its QNX Sound product, which decouples audio and acoustic software from vehicle hardware. This allows for automakers to explore new sound experiences that are customized to their brand image and updatable. Optional upgrades from standard to premium sound quality is also available with the QNX Sound development platform.





Displays

Projection HUDs allows for more rich and colorful content



Normal HUD (Left) and AGC glass solution for HUD (Right)

- AGCs HUD solution for glass eliminates noise that reflects off glass. It uses P-polarized glass instead of S-polarized glass; this also allows polarized sunglasses to see the HUDs.
- Hisense released a new AR HUD that combines holographic technology with its TriChroma projection. This allows for multi-directional displays, longer projection distances, and much wider viewing angles.
- Hyundai Mobis showcased a transparent HUD that magnified the image onto the windshield. This will enable drivers to see various information without taking their eyes off the road.
- Eyelights partnered with AGC to implement HUDs within their concept vehicle cockpit.



External displays are a new approach to vehicle design



LG Innotek Display



Moplat Smartface

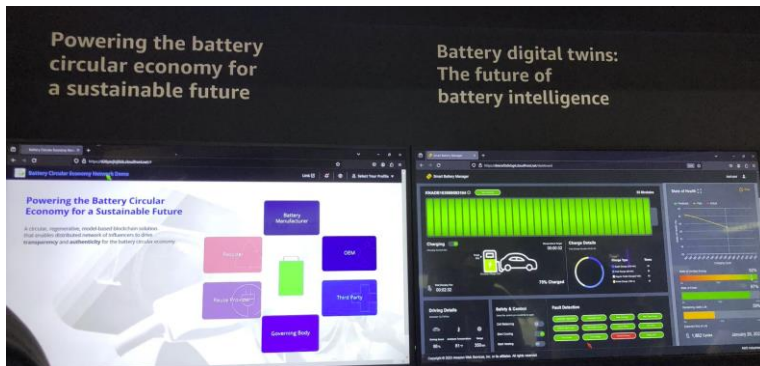
- LG Innotek had an automotive lighting concept called Nexlide-M, a flexible stereoscopic lighting solution. The system is up to 4x brighter than existing products. In addition to working as running lights or any rear combination lamps (Taillights, Brake lights, Turn signals, etc.), it can also display text or logos for endless customization.
- Moplat was featured in Eureka Park, The “start-up” section of CES. Their system, Smartface 2, enables pedestrian communication and to other vehicles. Using OTA users can display desired information in real-time. The other option showcased was Smartlogo, a similar concept but covers a smaller section of the grill. OEMs can customize this logo with road information or personalized user content.





Fleet management

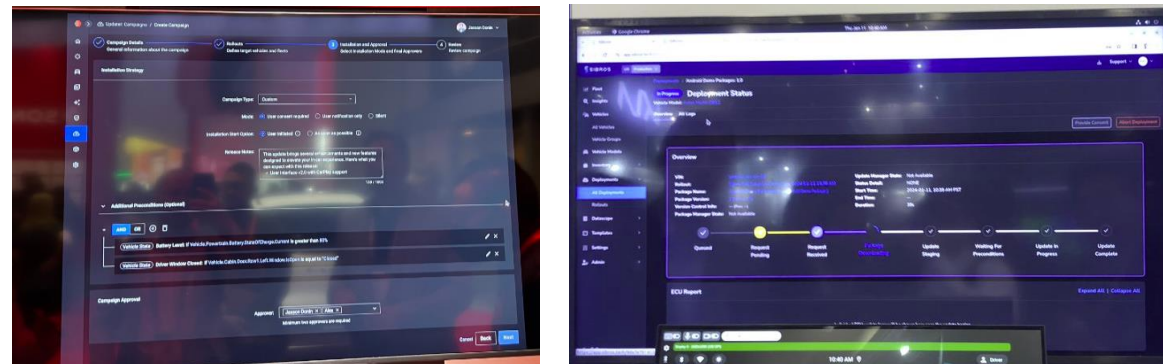
Fleet data collection



Amazon demo of battery data collection

- Several companies at CES 2024 offer fleet management solutions and data collection via the cloud.
- AWS hosted demos showing their cloud capabilities. The services can be used to collect and analyze vehicle data. One use case on display showed EV battery data being analyzed to give insights on their second life possibilities. Another use case showed fleet data being collected and normalized for OEM use.
- Sonatus showcased many products with one being their “Sonatus Collector” powered by AWS and allows for the collection of real-time vehicle data and identification of target data of interest. Sibros offers a device called “Deep Logger” that can be integrated into a vehicle in less than a day to start data collection.
- Another hardware data collection product was showcased by Nexar. The Nexar dash camera aftersales product is available to fleets and consumers. The device can be used by fleet owners to provide driver scores based on safe driving and capture driver behavior in the cabin.

Fleet dashboard



Sonatus Updater dashboard (Left) and Sibros Deep Updater (Right)

- An important aspect to fleet management is having a dashboard that can be used to analyze fleet data and deploy commands.
- One of the products Sonatus showcased and currently offers is their “Sonatus Automaker”. With this, OEMs can create a template using Sonatus’ SDK. From here fleet managers can automatically configure vehicles drivers and tasks, set restrictions, and run diagnostic tests. Monitoring of OTA deployment can be done with “Sonatus Updater”. This dashboard lets fleet managers control updates to vehicles and see in detail what issues occur with recommended actions.
- Sibros also offers similar dashboards for managing fleets with a focus on commercial trucks. They offer out of box solutions but can also do custom integration if necessary.
- Blackberry’s fleet management services allow for data collection and for operators to be notified of driver’s driving and vehicle score and if a vehicle needs to be serviced.



Last mile delivery

Ground vehicles for last mile delivery



Mobinn last mile delivery pod

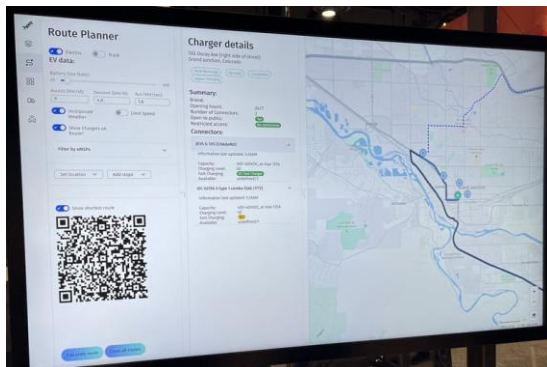
- Last mile delivery was on display at CES 2024 with some companies showing their autonomous solutions.
- Hyundai showcased robots from Boston Dynamics that could load a vehicle, and a hydrogen vehicle called CITY POD that can transport goods.
- South Korea based and Hyundai partner Mobinn was a CES innovation award honoree with their last mile autonomous vehicle pod. Their design allowed the pod to be able to traverse up/down stairs. Mitsubishi Electric brought back the Cartken delivery robot from CES 2023. This delivery pod is similar to the Mobinn model but with less ability to traverse difficult terrain.
- Kia announced their PBV concept lineup which included a smaller EV called the PBV1. This vehicle is intended to be manned and support last mile delivery. It offers rear wheel steering for increased maneuverability.





Navigation

EV optimization to reduce range anxiety



HERE EV Routing API

Navigation support for ADAS



TomTom Orbis Map shows where different levels of autonomy are available

- Google announced an update for Android Automotive which enables Google Maps to integrate EV battery information using real-time data.
- HERE Technologies and TomTom showed off a range of services for EVs. Both suppliers use charging station data to offer solutions which can reduce range and charging anxiety.
- Vaisala Xweather showcased their EV range prediction solution. This services can predict EV range whilst accounting for current and forecasted weather.

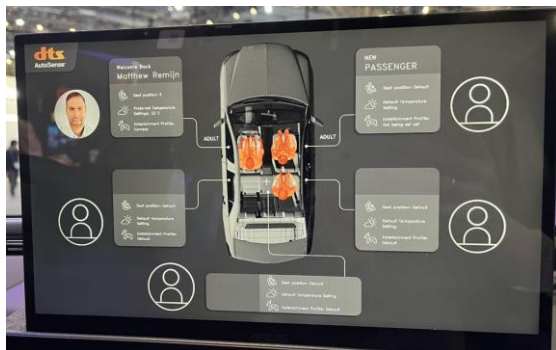
- ADAS/Autonomy are closely intertwined with navigation with many suppliers showing how navigation can support autonomy.
- TomTom’s Orbis Map allows for drivers to select which route they would like to take based on factors including how much autonomous driving is available.
- HERE announced software to enable OTA-updates to send new map data directly to vehicles.





Occupant monitoring

Enabling tech used (camera, radar, other)



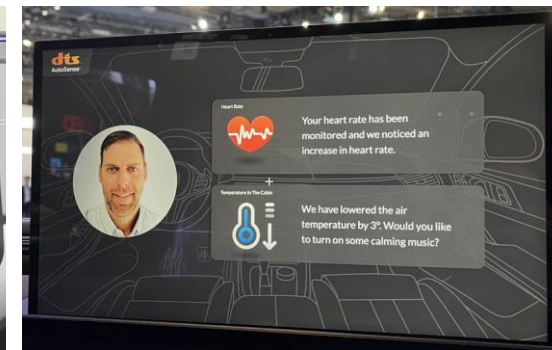
Xperi's monitoring via a camera



Socionext's monitoring via a radar



Harman's ReadyCare WellSense



Xperi's AutoSense technology

- Several companies showed their solutions for driver and occupant monitoring at CES with a few different options for enabling tech.
- Camera-based solutions in the vehicle were shown by Xperi and Garmin, but Garmin also has smartwatches on the market that can monitor heart rate and link to the vehicle.
- Socionext, a company that spun off of Panasonic, showed off their radar-based solution.
- Harman's solution uses both camera and radar for their ReadyCare WellSense product.
- All the companies that mentioned using radar said they use a 60GHz radar to monitor heart rate, and placements for both radars and cameras varied to help enable these solutions.

- Harman's ReadyCare WellSense solution uses a driver monitoring camera and a 60GHz radar in the driver's seat to help detect the driver's mood and utilizes that information to help set settings in the vehicle, like HVAC settings and music/sounds. For the demonstration Harman's radar was in the driver seat, and showed multiple locations that work for the driver monitoring camera.
- Xperi also takes many points into account from the camera and uses heart rate detection for their AutoSense product. Utilizing all this information the solution changes vehicle settings, like HVAC, and offers suggestions, like changing to calming music, to help improve the driver's mood.



Shy Tech

Hidden speakers



Harman Seat Sonic audio system

- Suppliers are looking to provide a unique sound experience within the vehicle by integrated speakers in new places.
- The All-new 2025 INFINITI QX80 (currently called QX80 Monograph) incorporates audio from Klipsch and powered by Panasonic. Part of the design includes speakers that are incorporated into the headrest of the vehicle.
- Harman's Seat Sonic audio system integrates speakers and subwoofers into the seats of the vehicle. This allows for modular building that is scalable to the number of seats. All passengers can adjust their sounds setting without impacting others.

Cockpit integration



Ultrasense Systems example of hidden buttons

- Shy tech has been in its infancy in recent years. Some OEMs are implementing it currently, with more OEMs and suppliers demonstrating its possibilities at CES 2024.
- Surfaces such as glass from AGC offer hidden decals that appear with special lighting or light reflection.
- Other companies such as Ultrasense Systems are using haptic feedback to incorporate buttons into surfaces. This technology allows the button to be hidden until lit when in use.
- TDK also explored the use of haptic feedback within steering wheel buttons and within digital touch screens.
- Visteon took a different approach with their shy tech integration. They created a screen with a trim design at the bottom. On the trim design, buttons appear when needed and disappear when not in use.
- Continental also showed shy tech involving a screen. Their new Chrystal Center Display is embedded in a crystal housing, giving it a transparent appearance.





Sustainable home technology

Making the EV part of the sustainable home



- Panasonic showcased vehicle-to-home (V2H) storage battery system (FYI, they build homes in Japan, and so does Toyota)
- Samsung showed SmartThings (IoT) integration with EV, home battery systems – as well as partnership with Tesla (Powerwall)
- LG Electronics showcased “Alpha-able” mobility concept which ties together EV, smart home, and charging capabilities

Developing circular economies in supply chain



- Panasonic adopted group-wide Circular Economy Policy (supply chain principles)
- Google announced official support for Right-to-Repair for mobile devices
- Fisker showcased sustainable interior of Ocean production vehicle (in Panasonic booth)
- Hyundai promoted plastics-to-hydrogen supply chain



VTOL

OEMs show off VTOL concepts



Xpeng AeroHT eVTOL flying car concept

- Vertical Take-Off and Landing (VTOL) were shown by automotive OEM subsidiaries at the show. Both OEMs intend to launch VTOLs to market in the coming years.
- Xpeng AeroHT showed off their “Land Aircraft Carrier” modular flying car which is planned to reach consumers by Q4 2025. This vehicle has a ground module for traditional road transportation and a VTOL module for air transportation. Xpeng AeroHT also unveiled their eVTOL flying car concept.
- Supernal, a Hyundai Motor Group subsidiary, showed off their electric VTOL concept, capable of carrying a pilot and four passengers. This concept is designed to facilitate 25-40 mile trips for city journeys and cruise at 1,500 feet travelling up to 120 mph.





Next steps



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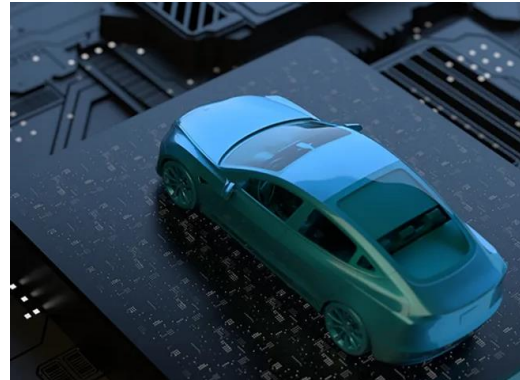


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USA

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Garren Carr
North America
garrencarr@sbdautomotive.com
+1 734 619 7969

Luigi Bisbiglia
UK, South & West Europe
luigibisbiglia@sbdautomotive.com
+44 1908 305102

SBD China Sales Team
China
salesChina@sbdautomotive.com
+86 18516653761

Andrea Sroczynski
Germany, North & East Europe
andreasroczynski@sbdautomotive.com
+49 211 9753153-1

SBD Japan Sales Team
Japan, South Korea & Australia
postbox@sbdautomotive.com
+81 52 253 6201