



TABLE OF CONTENTS



About SBD

Introduction

Executive Summary

Top Trends

Major Movers

Everything Else

Contact Us

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220 – Bi-Monthly Market Insights

SBD's Bi-Monthly Market Insights contextualize the most important announcements for industry stakeholders. Further analysis identifies their short and long-term impacts and maps out the best practices for responding to them.



Disruption Radar

#2210

Quarterly Wrap-Ups

Many companies today have quarterly reviews that work to assess their recent activity, output, and financial results while looking to the future. These reviews often provide an outside-in perspective, that helps re-tune tactics, and an opportunity for companies to establish targets for the next quarter.

Within the connected, autonomous, shared mobility, EV, and security (CASES) sectors – a multitude of new developments and announcements occur within each quarter. Likewise, across these sectors, every quarter provides a new series of announcements, partnerships, and acquisitions. This is in addition to the new technologies, innovations, and concepts showcased by key industry players at automotive events held throughout the year. With more announcements coming from the CASES landscape at an increasingly frequent rate, tracking these developments and assessing the most significant ones for the industry can quickly become a difficult task.

SBD's Quarterly Wrap-Ups provide a structured, focused, analysis of CASES developments over the previous quarter. Each report highlights the key themes of the announcements made every quarter as well as the subtle market changes that could point towards longer-term trends in the future. The report series works similarly to understand, and anticipate, how this market as a whole is expected to change in the coming months.

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Key questions answered

- > What were the key themes across all the CASES-related announcements made over the last 3 months?
- > What do these announcements mean and how could they affect the eco-system?
- > What should you look out for over the coming months?
- > What subtle changes to the CASES market occurred that may point towards longer-term trends?

This research supports



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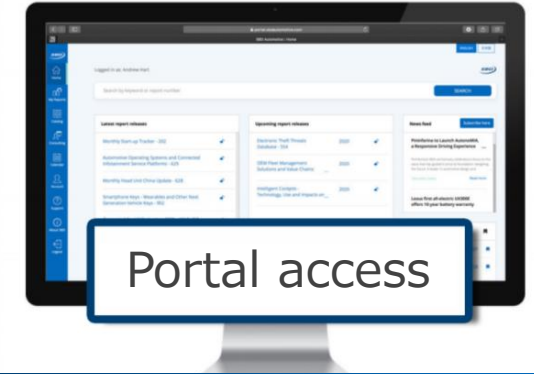
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Quarterly Wrap-Up

Summary & insights of the top trends from the last three months

2210 - Quarterly Wrap-Up – Q1 2024

About SBD »	2	Major Movers »	31
Introduction »	4	<ul style="list-style-type: none">▪ AFEELA▪ Hyundai Motor Group▪ Xiaomi▪ Arm▪ Nissan	
Executive Summary »	6		
Top Trends »	9	Everything Else »	38
<ul style="list-style-type: none">▪ Mapbox adding new capabilities to services with AI and partnerships▪ Automotive safety standards are evolving to assess the risks of implementing new technologies▪ Mobileye expanding AV technology with new partnerships▪ More substantial developments in autonomous driving▪ EV goals reduced▪ EV regulatory changes▪ Charging infrastructure expands▪ OEMs join forces to unlock more EV opportunities▪ OEMs partners with battery manufacturers to improve battery technology▪ Regulatory scrutiny on connected car data sharing		<ul style="list-style-type: none">▪ List of News Articles	
		Contact Us »	49



Introduction

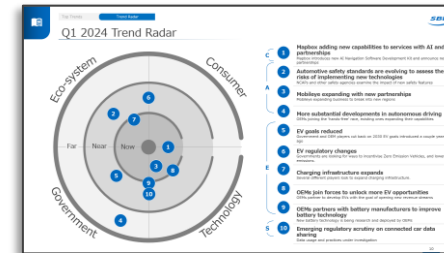
Introduction

SBD's Quarterly Wrap-up helps you quickly catch-up on **CASES trends** from the **last three months**, providing **insights** from our analysts on the impact of **major announcements**.

How to use this Report

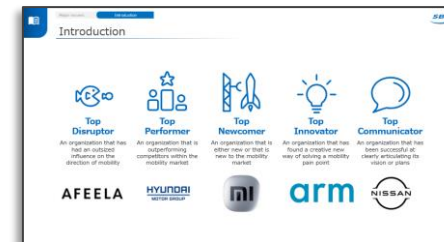
Top Trends

- Trends organized within SBD's **Trend Radar** and categorized by **CASES**
- Related news** explained for each trend along with **data** and **insights**



Major Movers

- Five organizations** picked based on their **impact** over the last quarter
- Announcements** relating to each of the companies **analyzed**



Everything Else

- Complete list of every **major news article** and **announcement** from the last quarter
- Articles organized by **CASES**

Connected News from the last 3 months

Source	Title	Date	Link
TomTom	TomTom brings AI powered by Microsoft Azure to the car	19/12/23	LINK
IR Research	Hagerty partners with Stellantis for digitization experience and route planning	19/12/23	LINK
Automotive News	BMW EV faces software issues and slips sales	21/12/23	LINK
NOI	NOI Star 2023 wins new Peugeot EVI vehicle	21/12/23	LINK
News	Kiaun reveals their automotive technologies and shows vehicle Kiaun SUV	20/12/23	LINK
Xinhua	New EV vehicle with 7 seats launched in China	01/01/24	LINK
Hagerty	Hagerty partners with Hyundai Automotiv to bring 3D navigation and LLM-based voice to the car powered by PlayGT	04/01/24	LINK
Polestar	New features powered by Google will be available in Polestar vehicles	06/01/24	LINK
Lotus	Lotus releases Lotus Inper OS version 1.4.0 which is available via OTA	06/01/24	LINK
CHN/Post	SAC carmaker makes maiden voyage with more models being built	16/01/24	LINK
Ford	Ford releases new digital cockpit for Ford and Lincoln brands	21/01/24	LINK
HERE	HERE and what2drive partner, allowing HERE API users to activate what2drive HERE	24/01/24	LINK
smart	smart releases updated steering via OTA to all customers free of charge	01/02/24	LINK
Business Insider	BYD reports vehicles with its next flagship fleet	01/02/24	LINK
GM	Some OnStar features will be standard in 2024MY vehicles	01/02/24	LINK
Business Wire	New Polestar Ocean OS 2.0 software available via OTA	04/02/24	LINK
Value Cars	Value Cars to build a new research center for technologies	07/02/24	LINK

Zoox cleared for California, Ford unveils Digital Experience (FLDE)

ZOOX



Zoox's robotaxi is cleared to operate on Californian public roads

Ford and Lincoln models to get a revamped infotainment platform

Summary

- California Department of Motor Vehicle approved a modification to Zoox's existing testing permit to allow the testing of a robotaxi in Foster City (geofenced area).
- The permit allows vehicle to operate at weekends during daylight hours at a maximum speed of 40 mph.
- Zoox's robotaxi prototype **does not have traditional controls like a steering wheel or peddles.**

- Ford claim that their new Digital Experience Platform has a greater processing speed and graphics refresh rate and more storage than traditional SYNC infotainment platforms.
- Aside from native features, Ford offers support for phone projection from Apple CarPlay and Android Auto.
- The new Digital Experience Platform, which is largely developed in-house, is available with a non-touch panoramic **48" screen which uses voice control and an 11" primary central touch screen** running off a single compute platform.

Road ahead

- While Zoox is behind their rivals (Waymo, Cruise) in terms of maturity of technology and testing miles, the company maintains that the current prototype **meets all safety standards and could commence production sooner.**
- Depending on the success of the Zoox pilot trial in California, the robotaxi operations are **likely to expand to Las Vegas, and in other states.**

- The new platform will be launched on the 2024 Lincoln Nautilus followed by more Ford models (to be announced).
- The new platform will have **Google support for other ecosystems like AWS and Apple** while also ensuring **continuous improvements through OTA over the time.**



While FLDE does not 'out-feature' recent industry competitive launches, success will hinge on a seamless execution across its line-up, consistent over-the-air updates to enhance usability and functionality, as well as backing the system with dealer and consumer education to ensure a positive experience.

Jeffrey Hannah
Chief Commercial Officer
SBD Automotive

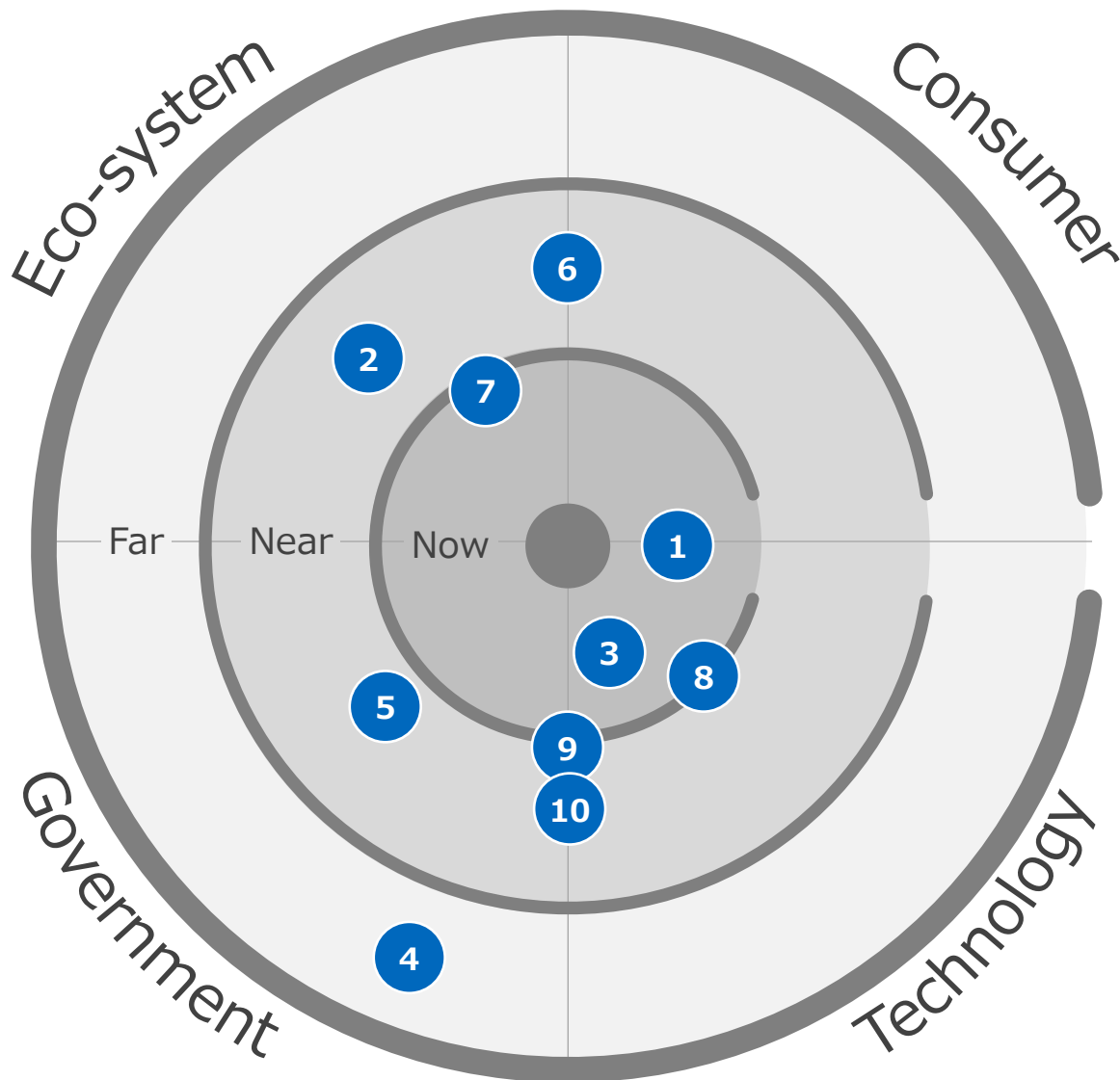


Example slides from the report

This block shows a preview of a slide from a report. The slide features a white electric car parked in a modern, brightly lit garage. To the right of the car is a calendar icon with 'Q1 2024' written on it. Below the car image is the SBD logo and the text 'Quarterly Wrap-Up' followed by a smaller subtitle 'Summary & insights of the top trends from the last three months'. At the bottom of the slide is a blue button with the text 'Request price' and a white right-pointing arrow.



Q1 2024 Trend Radar



- 1** **Mapbox adding new capabilities to services with AI and partnerships**
Mapbox introduces new AI Navigation Software Development Kit and announce new partnerships
- 2** **Automotive safety standards are evolving to assess the risks of implementing new technologies**
NCAPs and other safety agencies examine the impact of new safety features
- 3** **Mobileye expanding AV technology with new partnerships**
Mobileye expanding business to break into new regions
- 4** **More substantial developments in autonomous driving**
OEMs joining the 'hands-free' race, existing ones expanding their capabilities
- 5** **EV goals reduced**
Government and automakers cut back on 2030 EV goals introduced a couple years ago
- 6** **EV regulatory changes**
Governments are looking for ways to incentivise Zero Emission Vehicles, and lower emissions.
- 7** **Charging infrastructure expands**
Several different players look to expand charging infrastructure.
- 8** **OEMs join forces to unlock more EV opportunities**
OEMs partner to develop EVs with the goal of opening new revenue streams
- 9** **OEMs partners with battery manufacturers to improve battery technology**
New battery technology is being research and deployed by OEMs
- 10** **Regulatory scrutiny on connected car data sharing**
Data usage and practices under investigation

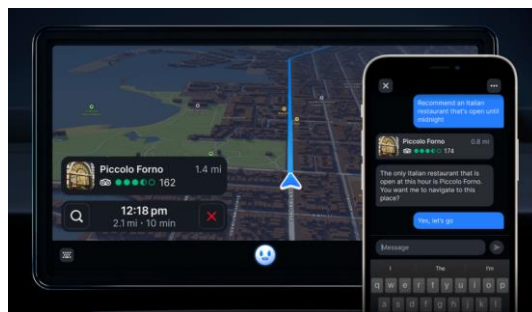


1 Mapbox adding new capabilities to services with AI and partnerships: In the news

Since the release of MapGPT, Mapbox has been working to build on their AI portfolio and expand their product. Their AI powered system allows the driver to control navigation, and other systems like entertainment and climate, using voice-based interactions. By incorporating AI that has access to different vehicle domains, OEMs can make their vehicles safer by reducing the amount of time drivers are looking away from the road or removing their hands from the wheel.

mapbox Mapbox implements AI in new navigation SDK

- Mapbox's new **Navigation SDK leverages AI** to rival Apple CarPlay and Android Auto.
- The new system can **integrate with other in-vehicle systems and third-party services** to provide more support for the driver.
- MapGPT will also be **standard with the SDK**. This allows users to interact with the system via voice commands.
- Integration of AI allows for **control over various systems** such as navigation, entertainment, autopilot, and climate controls.



Mapbox and Hyundai Autoever collaboration with mobile device integration

mapbox Collaboration with Hyundai AutoEver for expansion of MapGPT

- Mapbox and Hyundai Autoever are working together to make an **eco-system powered by MapGPT**.
- Integration of MapGPT was demonstrated across **both in-vehicle and mobile device** systems to offer a seamless connected experience.
- In addition to MapGPT integration, Hyundai Autoever will collaborate with Mapbox for **EV navigation support and 3D navigation**.

mapbox Mapbox to support BMW and MINI navigation

- The new **iDrive 9** navigation systems will be supported by Mapbox.
- 3D maps will be available on the system.
- In addition to design elements, Mapbox is providing BMW with a map rendering engine.
- The new partnership allows BMW to **integrate data from more sources** and provide **more frequent map updates**.





4 More substantial developments in autonomous driving: In the news

With the growing number of sensors on vehicles, self-driving possibilities are growing. GM, Ford, and now Stellantis all have a form of self-driving on certain roads. Tesla now has a new Beta update for its full self-driving. Some governments are funding projects to accelerate the self-driving reality and are carrying out the necessary regulatory groundwork to permit SAE Level 3 vehicles.



GM expanding hands-free driving to rural highways

- Super Cruise, GM's hands-free driving system, is being **expanded to rural highways** in the USA and Canada.
- **750,000 additional miles of roadway** will join the Super Cruise system **by 2025**
- Super Cruise uses a combination of **cameras, LiDAR and GPS data** for lane navigation.
- The added roads will not be available on the **Cadillac CT6 & XT6, and Chevrolet Bolt EUV.**



Stellantis quietly launched its hands-free driver system

- Similar to GM's Super Cruise, or Ford's Blue Cruise, Stellantis, hands-free driving will **only work on select roads.**
- The system can **maintain lane centering** on curves and adjust speed if necessary.
- The vehicle will **change lanes** when the driver uses the turn signal.
- An **infrared camera** is used to make sure the driver is staying attentive.
- Currently, the new Stellantis system is available on the **2024 Jeep Grand Cherokee** but only on the 3.6 V6 engine. The **2025 Ram 1500** will be the next model to receive this system



Tesla full self-driving beta v12 rolls out

- Tesla's **full self-driving beta V12** is rolling out to customers after testing.
- **Elon Musk** has described this new update as "**Mind-blowing**".
- The biggest change is what Musk is calling "**end-to-end neural nets**" where the vehicle controls are handled by Neural Networks instead of controlled by programmers.
- This update still requires users to **keep their hands on the wheel and take control of the vehicle if needed.**



UK government commits to funding more autonomous vehicle projects

- The CAM Scale-up UK program was launched by the UK government in 2020 to help start-ups **accelerate self-driving capabilities**; since then, 22 businesses had their projects supported.
- One project funded was a **self-driving pothole filing robot.**
- Each member of the 5th round will receive up to **£100,000 in grants** from the UK government.



5 EV goals reduced: In the news

Government emission goals appear to be relaxing. A couple of years ago, the UK and USA announced specific EV and tailpipe emission goals. As we approach the halfway point of the decade, several players including OEMs are looking to amend their plans. The changes in government and OEM EV sale plans likely stem from slow of EV sales, lack of infrastructure, and high cost to the consumer to switch to EVs.

Rivian paused construction of its \$5B EV facility in Georgia

- Rivian announced R2 and R3/R3X but have pushed out timeline for assembly plant construction for R2 in Georgia.
- Instead of Georgia, R2 production will start at the company's facility in Normal, Illinois. The plant's capacity will expand to 215,000 units a year (production to commence in 2026).
- Rivian also announced plans to reduce its salaried workforce by 10% as part of cost-cutting measures.



US adjusts tailpipe emission rules

- The Biden administration has announced **revised regulations** for tailpipe emissions.
- The new regulations keep tailpipe emissions reduced by 56% by 2032, but with a **more gradual pace from 2027-2030**.



Mercedes-Benz cuts back on EV goals

- Mercedes-Benz announced they will **cut back** on their goal to sell only EVs by 2030.
- New 2030 goal looks to have 50% EV sales.
- Mercedes-Benz has stated they will look to customer and market conditions to help set the pace for their EV transition.



Mercedes-Benz E-Class



Top Performer: Hyundai Motor Group

Strategic roadmap 'Hyundai Motor Way' highlights the group's long-term business and financial commitment to increase EV sales globally by 2030 and achieve 100% electrification of new vehicles worldwide by 2040. In line with the strategic roadmap, Hyundai is partnering with diverse technology suppliers to develop connected, autonomous, and electric vehicles. With the strategic roadmap and ongoing partnerships, Hyundai aims to secure top-tier leadership in electrification.

Why are they Major Movers?

- The group's strategy is built around a core business of electrification, autonomy, and connectivity.
- The automaker aims to hire 80,000 new employees for its growth in the potential for electric vehicles and new mobility business. Most new jobs created will be to promote future business such as electrification, SDVs, and carbon neutrality.

Strategic Partnerships for Accelerating Mobility

Connected

- Hyundai Motor and Kia will link **Samsung's 'SmartThings' IoT** (Internet of Things) platform to their connected car services.
- Mapbox and Hyundai Autoever to Cooperate on **3D Navigation and LLM-Driven Voice Experiences** with MapGPT.

Autonomous

- At the KAIST headquarters in Daejeon, the Hyundai Motor Group and KAIST On-Chip LiDAR Joint Research Lab will **create LiDAR sensors** for advanced autonomous cars.
- In a promotional video, Hyundai Motor Company showcases its self-driving, all-electric **IONIQ 5 robotaxi passing a procedure akin to the US driver's license exam.**

Electric and Software-defined Vehicles

- Hyundai Motor and Kia unveiled '**Active Air Skirt**' technology for Electric Vehicles.
- Hyundai Motor and Kia sign an agreement with Gore to co-develop **Polymer Electrolyte Membrane (PEM) for hydrogen fuel cell** systems. The collaboration encompass test protocol and key aspects of PEM development.
- Hyundai Motor Company will supply an all-electric Light Commercial Vehicle from its Global **eLCV platform to Iveco Group.**
- Hyundai Motor Group is **investing \$51 billion** into electric vehicles and future mobility **over three years.** Half will fund new EV facilities, while the rest will go to R&D in EVs, Software-defined vehicles, and batteries.

SBD Perspective

- Hyundai is highly focused on partnering for the development of its EVs with the unveiling of new technologies along with connected and autonomous vehicles.
- Hyundai has also planned, with its Hydrogen Vision 2040, to make hydrogen energy accessible and widely applicable. This is at the early development stages with ongoing research and testing.



Autonomous News from the last 3 months

Source	Title	Date	Link
NIO	NIO Day 2023 sees new flagship ET9 vehicle	23/12/23	Link
Xiaomi	Xiaomi reveals their automotive technologies and shows vehicle Xiaomi SU7	29/12/23	Link
Xpeng	New X9 vehicle with 7 seats launched in China	01/01/24	Link
Mobileye	Mobileye and Mahindra and Mahindra expand collaboration	09/01/24	Link
TomTom	New Orbis Maps from TomTom offers 3D visualization and includes information from open and proprietary data sources	09/01/24	Link
Lotus	Lotus releases Lotus Hyper OS version 1.4.0 which is available via OTA	09/01/24	Link
Mobileye	HiRain to use Mobileye EyeQ6-based ADAS in China	22/01/24	Link
The Verge	GM cancels 'Ultra Cruise' and will stick with 'Super Cruise'	22/01/24	Link
Electrek	BYD to launch new ADAS technology soon	06/02/24	Link
Volvo Cars	Volvo Cars to build a new research center for technologies	07/02/24	Link
Automotive World	More autonomous vehicle projects will be funded by the UK government	12/02/24	Link
Mobileye	Urban autonomous mobility project from Mobileye and Project 3 Mobility	13/02/24	Link
Reuters	Hardware chief for GM AV Cruise arm resigns	15/02/24	Link
GM	Super Cruise hands-free driving from GM expands to 750,000 miles of roads including rural highways	15/02/24	Link
Motor Authority	Hands-free driving now available for some Stellantis vehicles	15/02/24	Link
The Verge	California government reviews Waymo's robotaxi expansion application	21/02/24	Link
Reuters	GM will resume AV Cruise robotaxi testing with safety drivers soon	22/02/24	Link



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