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639 – Features-as-a-Service

Features-as-a-Service (FaaS) is an alternative business model to the traditional way of upselling optional features and packages at the point of sale. FaaS gives vehicle owners the flexibility to purchase features after they purchase the vehicle and gives OEMs an opportunity to generate new revenue streams.

Connected &
Mobility Services

#638

FOTA & Software Delivered Features Guide

An ecosystem of new players in the automotive industry are putting Over-The-Air (OTA) and Firmware-Over-The-Air (FOTA) updates at the center of their vehicle development and lifecycle strategies. Unlike traditional OTA updates, FOTA updates directly add to, or enhance, the hardware functionalities of the vehicle. Today, OEMs such as Tesla are offering vehicles that provide regular updates which unlock software features and firmware functions initially installed in production.

In response to increasing consumer demand, a growing number of new players and legacy OEMs are adopting or developing similar OTA strategies for their future vehicle line-ups. As more automakers update different ECUs more regularly across the vehicle lifecycle, it can become more difficult for product planning and engineering teams to evaluate the competitiveness of their features and platforms.

The OTA & Software Updates Guide tracks the latest OEM activity around OTA updates to help product planners and engineers assess their strategies against competitors. It then delves into the updates being delivered by OEMs today – identifying the types of updates delivered, their frequency, and the technologies utilized in the process. The guide works similarly to understand the types of new features enabled through FOTA updates and how quickly OEMs are shifting towards implementing high-frequency updates.

COVERAGE



GLOBAL



NA



CHINA



EUROPE

FREQUENCY



ANNUALLY



QUARTERLY



ONE-OFF

PUBLICATION FORMAT



PDF



POWERPOINT



EXCEL



ONLINE

PAGES



70+

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Key questions answered

- > Which OEMs are enabling which types of OTA SW updates?
- > How frequently are OTA SW updates issued?
- > How are updates being enabled from an IT and technical point of view?
- > What are the main types of OTA updates being implemented?

This research supports



PRODUCT PLANNERS



IT



MARKETING



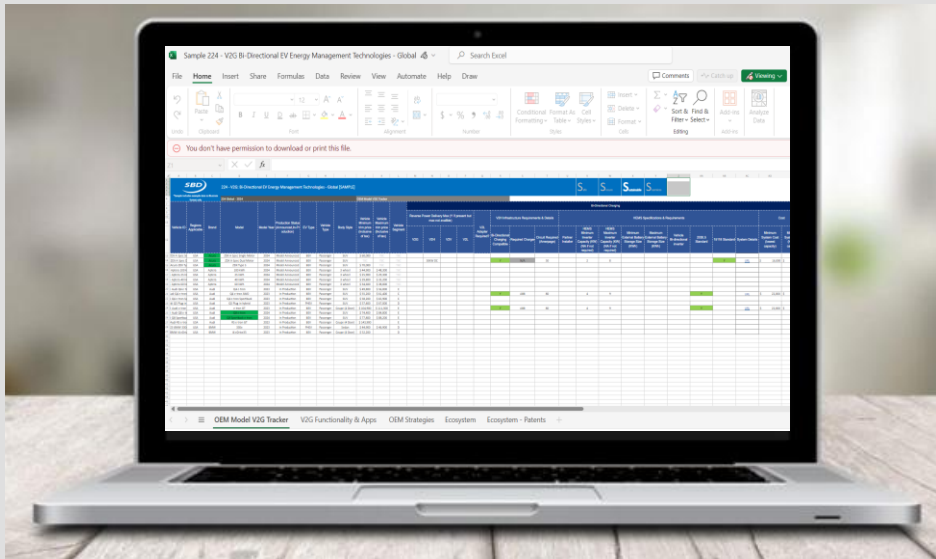
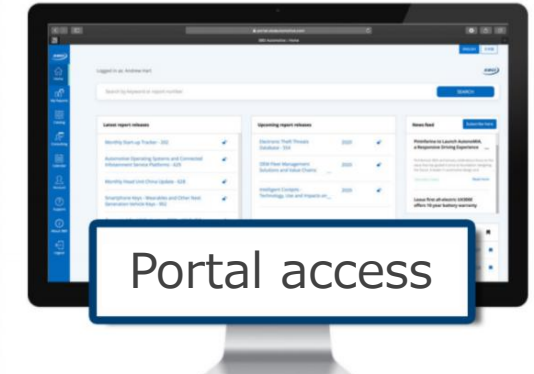
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View Excel Data Sheet Sample

FOTA & Software Delivered Features Guide

Track the latest OEM activity around OTA updates identifying the types of updates delivered and the technologies used

Click for Sample





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Q1 2025

638EUR-25-Q1


FOTA & Software Delivered Features Guide

638 – OTA and Software Update Guide - EUR


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Data Deep Dive
View and analyze deep data in your own way





Customer Feedback
Provide your feedback to SBD regarding this report





Introduction

OEMs delivering globally must continue to meet regional variations


As vehicle platforms modernize, **perhaps the most important technology enabler is the ability to update the vehicle's software and electronic components remotely.** Colloquially attributed to over-the-air (OTA) updates, this technology was first widely used by Tesla with the launch of the Model S in 2012. In 2025, all global OEMs integrated remote software update technology into their vehicle platform portfolio.

Given the complexity of extensive legacy platforms, **most OEMs have taken a cautious approach to integrating OTA update capabilities into their platforms,** largely inhibited by legacy technologies, cost constraints, and cybersecurity concerns. This Guide offers a detailed overview of the OTA and software updates including category capability, connectivity technologies, the existing frequency of updates, and how it will likely shape up over the next five years. This report identifies the major drivers and barriers for the **FIVE key OEM Business Outcomes for OTA & software updates through these considerations.**

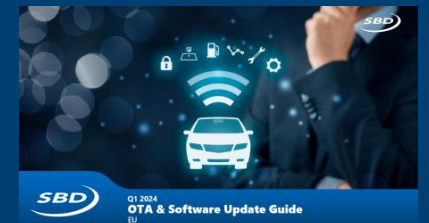


What are the key findings of this report?

- What is the overall update history and frequency of OTA updates?
- Which OEMs are enabling which types of OTA SW updates and how frequently?
- What data will be available for OTA under different categories along with the latest update information?

Layer	Section	Conclusion
STRATEGY & IMPACT	Executive Summary	This report identifies Disparities in OTA and Software updates through the lens of capability, activity, benefits, and regional market implementation.
	The Basics	This chapter outlines the architecture, categories and progression of the OTA and Software updates
LEARNING & ACTION	What's New?	Focus on new models launched, notable announcements, and recall fixes via OTA updates.
	Analysis	In-depth discussion of strategy, OTA update trends, release cycles, best practices for OTA update UX.
CORE INSIGHTS	Summary Tables	This section details what is happening in each category regarding frequency, model availability by automakers, and the type of OTA update, which are functional, security, or bug fixes.
DATA DEEP DIVE IN EXCEL	Deep Dive	 View and analyze deep data in your own way
	Update History	
	Rankings	
	Comparison Dashboard	
	Definitions	
CONTEXT	Birds Eye View	An overview of the tangential trends to this topic, as identified in SBD's neighboring products
	Future Outlook	Four OEM personas roadmap likely to take future steps for achieving benefits.
	Next Steps	Can SBD help you with any unanswered questions?

Example slides from the report



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Disparity between Capability and Activity reveals Outcomes

It's not wrong to have OTA capability and not use it, but it does help us understand the outcome of an OEM's OTA strategy



Pace & Agility



Consumer demand



Safe & Trusted



Revenue generation



Brand Loyalty

For example, many OEMs can see higher pace and agility through internal production

Whole Vehicle OTA*
Multi-category OTA

Infotainment & Connectivity

Safe & Trusted



GENESIS

Actively delivering against all 5 Benefits of OTA



Pace & Agility



Pace & Agility + Loyalty + Revenue Flexibility



Not delivering a clear OTA strategy



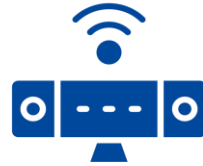


7 Categories of OTA Updates



Digital Cockpit & Infotainment

Updates to infotainment apps such as an app downloaded from Google Play Store, or an OEM developed e-Store such as Mercedes me connect store or features related to digital cockpit.*



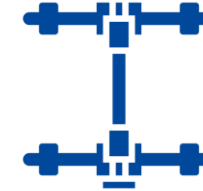
ADAS (Chassis)

Updates to sensors, cameras or any units to modify the autonomous driving systems in the vehicle, such as; vehicle detection systems, headlight monitoring, driving assistance systems, and more.



Comfort, Body & Cabin

Updates to control systems that provide user comfort, and alter the interior cabin of the vehicle, examples include; ambient lighting colors, temperature control systems, and more



Powertrain

Updates to the Engine Control Unit (ECU) or powertrain programming with examples including; improving EV driving range, drivability improvements and tweaks to the performance of the vehicle



Passenger Safety

OTA update provided by the car maker to update sensors or features which improves the safety of the passengers (examples: seatbelt warnings, visibility, speed warnings, and more)

General Updates



Cyber Security

OTA update provided by the car maker to improve vehicle security and prevent illicit cyber activity



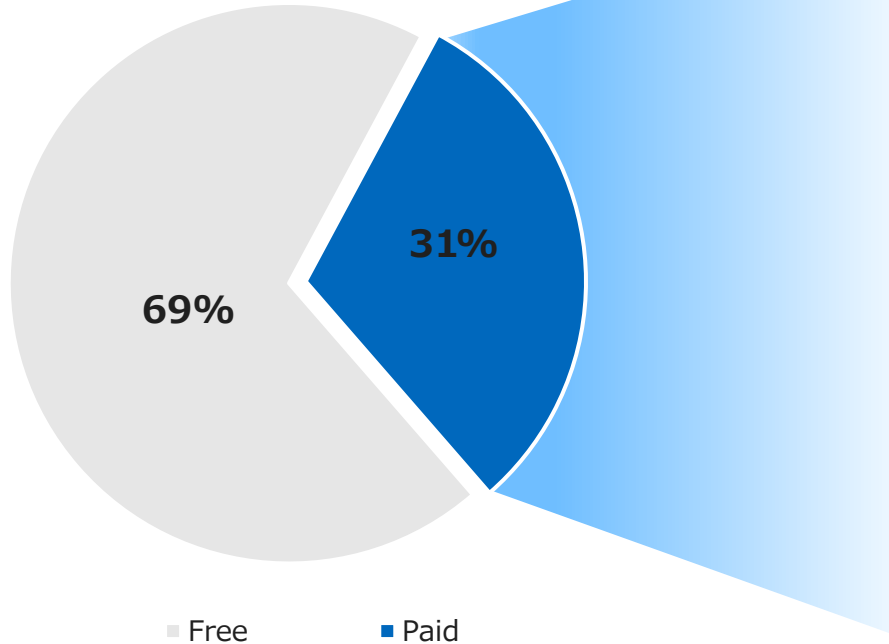
Bug-Fixes

OTA update provided by the car maker to fix any bugs, glitches or patches made in the system code to ensure smoother running of the systems

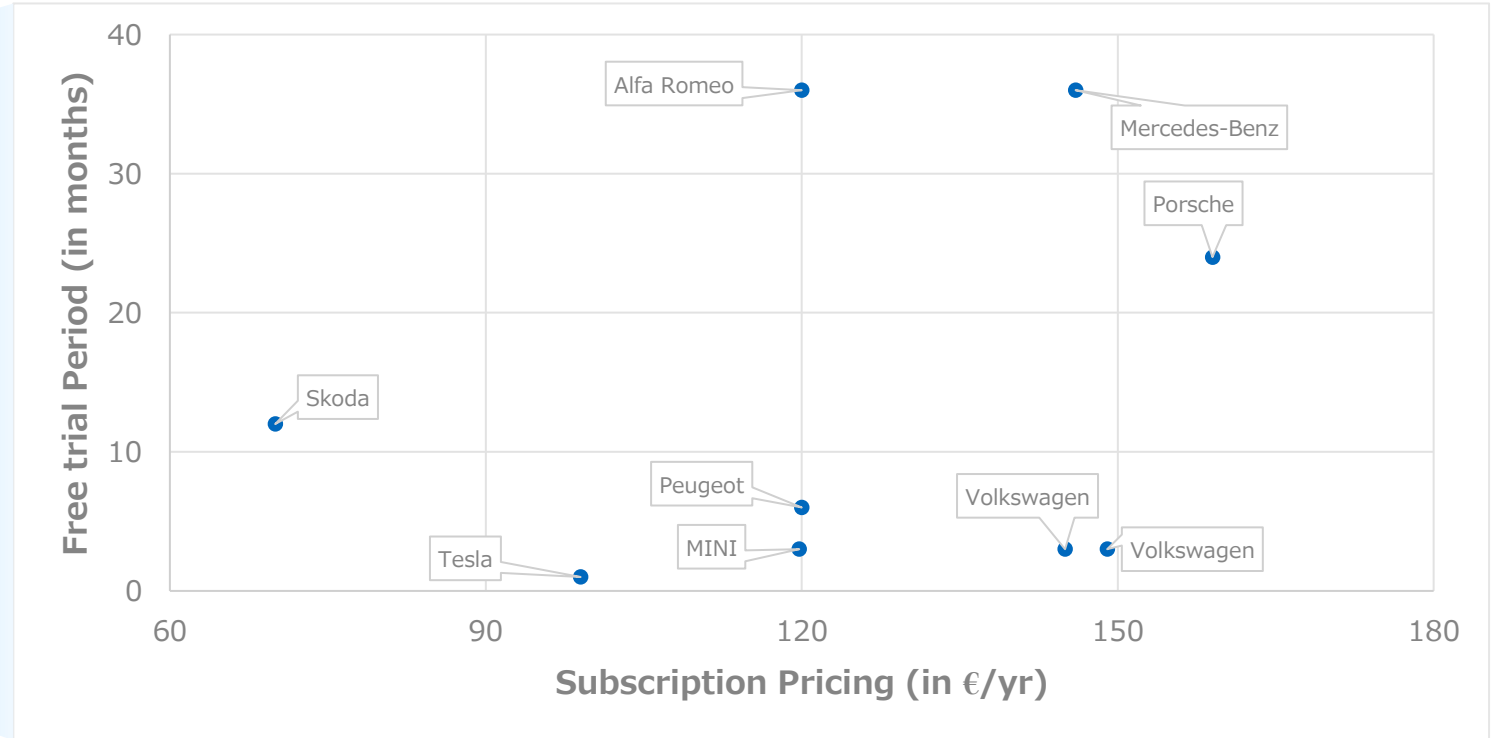


Subscription models are the common form of pricing

Share of OEMs Charging for OTA



Note: OEM brands having Pricing as TBA
(To be announced) are excluded from the Paid option

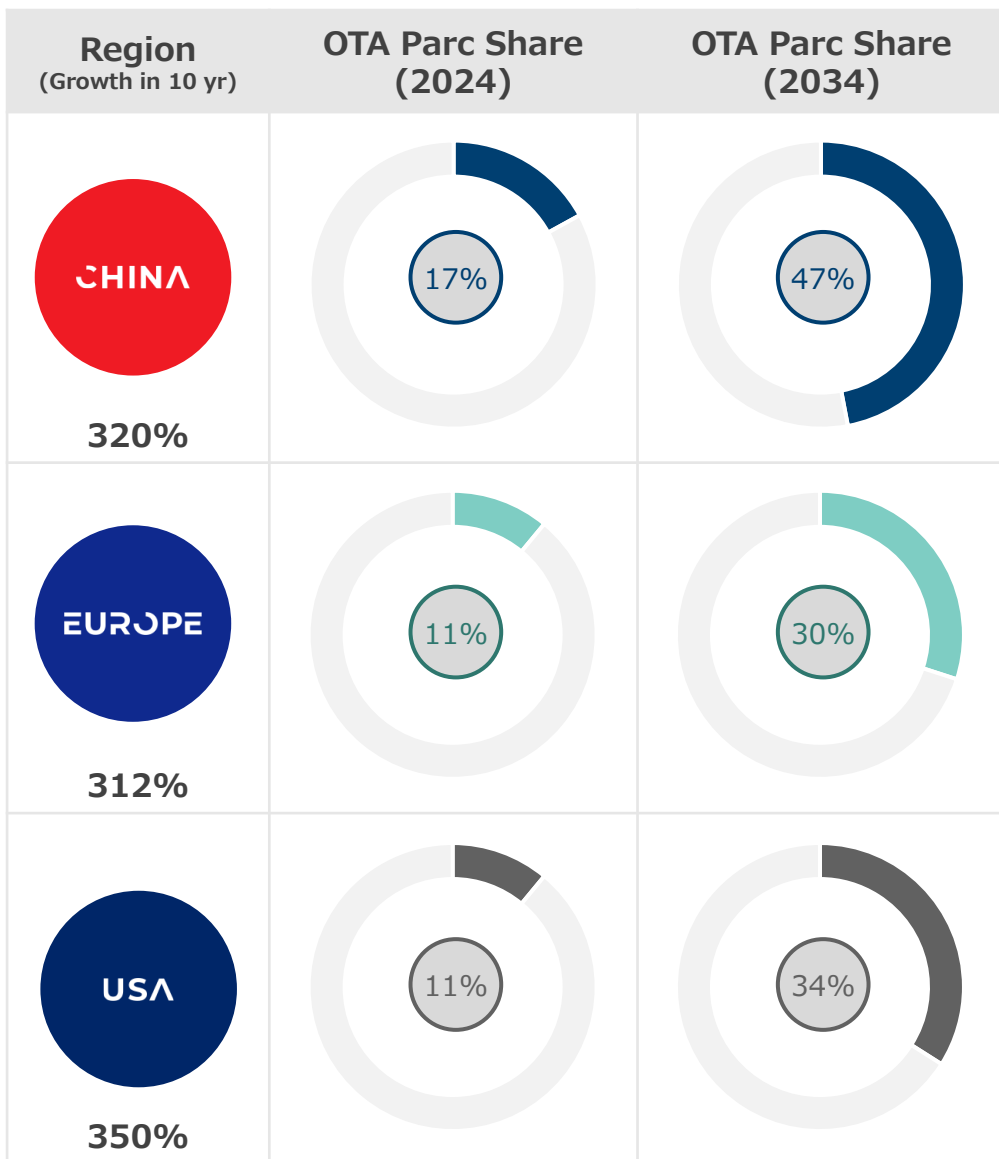


Key Highlights

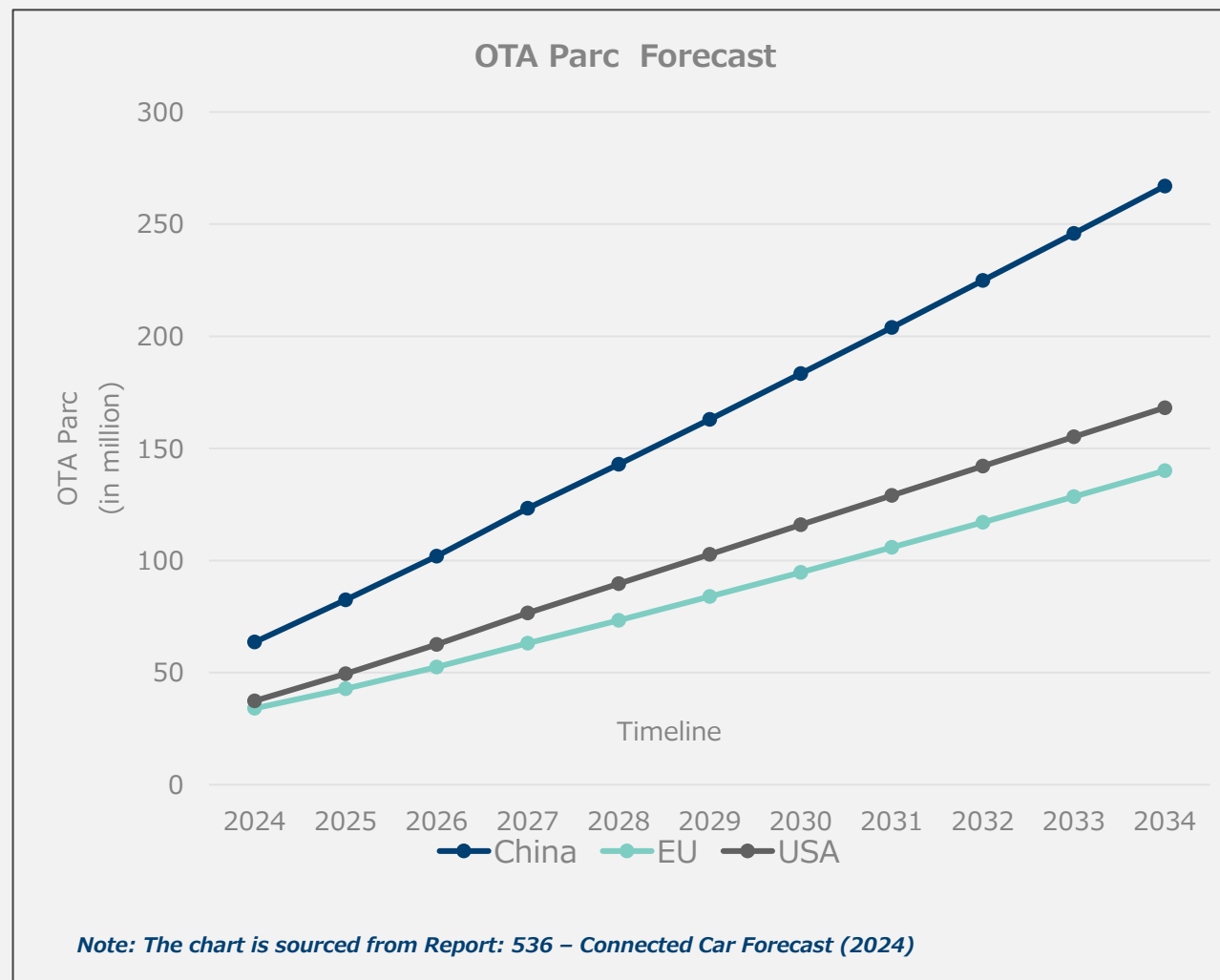
- Fiat** has introduced a new six-month free trial option. **Tesla** has **reduced its free trial period** from twelve months to just one month. **Alfa Romeo** has **lowered its annual subscription price from €140 to €120**.
- Nineteen brands offer a lifetime free trial of their compatible connected service packages, which include over-the-air (OTA) updates for select models. Additionally, brands like Cupra, Mercedes-Benz, and Tesla provide options for compatible connected service packages for their vehicles.
- Volkswagen** is the only OEM brand with more than one subscription pricing depending on the vehicle's **powertrain**.



China will lead the car-parc with OTA update capability



China will have a solid lead in OTA vehicles compared to the USA and Europe. But the US would have the highest growth percentage of 350% in 10 years





ADAS



Starting Out



Major Player

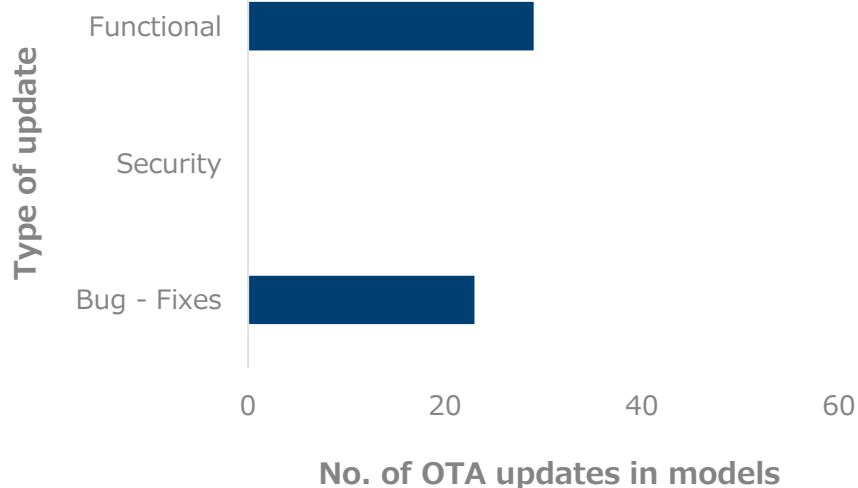


Leader



Category Updation Block

		Frequency of Updates		
		Low	Medium	High
OTA Update Model Availability	High	4 OEMs	2 OEMs	3 OEMs
	Medium	3 OEMs	1 OEM	
	Low	11 OEMs		



Note: One update may also comprise of multiple update types;
The count is based on the OEM OTA update version provided to the number of OEM models

Installation Method

- For **Volvo**, the updates are automatic and can be downloaded in the background, but the vehicle cannot be used during installation. Further, a vehicle restart may be required after installation.
- The **Tesla** update occurs when the vehicle's ignition on but can't move. The vehicle must complete an OTA software update for Tesla before FSD features are available.

Major OTA updates

- Polestar, with a major update**, introduced the ability to switch from Pilot Assist to Adaptive Cruise Control by double-tapping the steering wheel control in the Polestar 4 model. It also brings adaptive cruise control, which is now available in trailer mode.

Key Highlights

- BMW, Polestar, and Tesla are automaker brands offering ADAS-related OTA updates across a wider range of models. Among them, Tesla has achieved the highest frequency of updates over the past year, receiving updates in every quarter (2023-2024)
- Compared to other categories, the ADAS category has reported a **relatively small number of vehicle models with functional and bug-fix updates**. ADAS OTA updates are particularly relevant when many brands are considering deploying higher SAE Level features (hands-free driving, valet parking, etc.). For example, Tesla is developing more features related to ADAS capabilities to be released via OTA update. Some brands unlock superior versions of features already existing in their models (blind spot intervention replaces blind spot monitoring).
- For e.g., **Ford enables the BlueCruise SAE L2+ feature** via the software update and can also alter the other features associated with it



Consumer demand can unlock opportunities to add new features

Vehicle 4.0 Benefit 2 — Consumer demand

Differentiation through software OTA updates by introducing new or enhanced features

2025

2026

2027

2028

2029



Established Premium

Medium Volumes
High Margins
High Legacy



Bundling of services with FaaS implementation (features that are continuously improved are perceived as high value by vehicle owners)

Push new features

Disrupter

Through start-up or resetting for BEV have leapt straight to Vehicle 3.0 but some struggle to deliver the full value



Technology-agnostic features, rather than technology-specific

Establishing credibility



Get consumer feedback to make them feel part of the technology development process

High Volume

High Volumes
Low Margins
High Legacy



Adoption limited by customers due to costs overheads



Alignment to consumer preferences.
Selected trial for an extended period at free cost

Flexibility for frequent OTA updates



Adding freshness and encouraging stickiness (reducing churn-rates)

New Entrant

Automakers that are either new to the automotive market or foraying into new geographies



Transformed business models which incentivize lifetime revenues – incorporating features that encourage ongoing usage and purchases, thereby fostering long-term customer engagement

Compete and innovate



Outcome



Barriers



Solutions



Request the price



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Do you have any questions?

If you have any questions or feedback about this research report or SBD Automotive's consulting services, you can email us at info@sbdautomotive.com or discuss with your local account manager below.



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