

AUTOMOTIVE

Nearing 2025, Mercedes-Benz ramps up 'digital-first' production

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Electric vehicles can be manufactured on the same lines as other models at a few of the automaker's factories, bringing a greener future a bit closer. Image credit: Mercedes-Benz

By LUXURY DAILY NEWS SERVICE

German automaker Mercedes-Benz is ensuring the plants that manufacture its electric vehicles are as efficient as possible.

Factories in Beijing, as well as Rastatt, Germany and Kecskemet, Hungary, are poised to ramp up the production of electric models via Mercedes Modular Architecture (MMA), the brand's new electric-first development platform. Thanks to the use of this technology, and real-time data, the company can effectively build electric, hybrid and gasoline cars on one factory line, allowing Mercedes-Benz to scale its electric vehicle (EV) business as it inches closer to its 2025 all-electric target.

"Mercedes-Benz is initiating a new era of automotive manufacturing thanks to the integration of Artificial Intelligence, MB.OS and the digital twin based on Nvidia Omniverse into the MO360 ecosystem," said Jrg Burzer, member of the board at [Mercedes-Benz Group AG](#), in a statement.

"With our new Digital First' approach, we unlock efficiency potential even before the launch of our MMA models in our global production network and can accelerate the ramp-up significantly."

Modern mobility

Mercedes-Benz is supporting a standing commitment to electrification, now spotlighting a series of infrastructural advances that aim to help accelerate the process.

Upgrades to the brand's MO360 production system, which uses artificial intelligence (AI) to maximize efficiency, will help global teams ensure that all new Mercedes-Benz releases are EVs by the middle of the decade.

Mercedes-Benz is employing its MMA platform across a number of new and expanded sites worldwide, stating that the digitized approach to production helps to avoid defects, is time efficient and champions flexibility in manufacturing structures.

'Digital First' is our new approach for production, using innovative techniques including the

digital twin, to plan, retool and ramp-up production of our new models based on the Mercedes Modular Architecture (MMA) at our factories in Rastatt, Kecskemt and Beijing. [#MercedesBenz pic.twitter.com/nwtjDrVqXE](https://twitter.com/nwtjDrVqXE)

Mercedes-Benz (@MercedesBenz) [September 20, 2023](#)

For instance, MMA gathers data from 30 brand plants globally, reducing construction time and costs. In Rastatt, the technology is being used to construct next-generation vehicles without interrupting existing assembly mechanisms.

Using virtual simulations, the MO360 system determines ways in which the company's plant can be configured, changed up and optimized. Whereas previously, operations needed to be paused for the exercise, today's AI-driven tool conveniently suggests the layout of machines, lines and supply routes without interruption.

Once fully rolled out, Mercedes-Benz's Germany-based location will serve as an example for the rest of the network; Beijing is next up for the transition.

Already, Rastatt's successful use of AI to paint and perform topcoat finishes offers a template that Mercedes-Benz will now apply to other plants around the world. Instead of using traditional programmable logic controllers for the process, the digital tool takes over in a move that has granted the automaker an energy savings of 20 percent.

"What if reality becomes a representation of the digital, rather than the digital being a representation of reality?" said Jan Brecht, chief information officer at Mercedes-Benz Group AG, in a statement.

"Our vision in the future is getting trust in digital twins as same as we do in physical reality."



AI, digital twin and data-gathering technologies are all coming together to streamline manufacturing and cost savings for the automaker. Image credit: Mercedes-Benz

At the Kecskemt site, Mercedes-Benz is creating virtual factories with software company Nvidia, using the Omniverse tool to make a duplicate, or "digital twin," of its Hungary plant. This enables the automaker to configure the assembly areas, retool them and conduct inspections using AI instead of costly hardware.

Additionally, the capability allows Mercedes-Benz to interact directly with suppliers and avoid real-world construction mistakes.

"Digitalization will enable a whole new era of efficiency for the automotive industry," said Rev Lebedian, vice president of Omniverse and simulation technology at Nvidia, in a statement.

"Using Nvidia Omniverse and AI, Mercedes-Benz is building a connected, digital-first approach to optimize its manufacturing processes, ultimately reducing construction time and production costs."

Mercedes-Benz debuted MMA earlier this month, at Munich IAA Mobility ([see story](#)), showing consumers how the brand is implementing intelligence into its digital ecosystems, benefiting real-world automating abilities.