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ABB's PixelPaint brings exclusive and sustainable paint finishes to Mercedes-Benz Sindelfingen plant

- ABB's award-winning PixelPaint technology deployed at the Mercedes-Benz Sindelfingen plant
- PixelPaint delivers unprecedented precision and eliminates overspray, reducing material use and emissions
- Mercedes-Maybach SL 680 Monogram Series is the first model to receive exclusive and individual paint finishes enabled by PixelPaint

ABB's innovative PixelPaint technology has been deployed at the Mercedes-Benz Sindelfingen plant in Germany, where it complements the site's conventional painting processes by enabling the precise and efficient application of intricate paint designs. The sustainable and resource-saving technology began operation in 2025 as the luxury manufacturer develops new personalized options for its most exclusive models.

"PixelPaint uses an award-winning paint head similar to an inkjet printer that can apply large areas of color as well as precise details with complete accuracy," said Joerg Reger, Managing Director of ABB Robotics Automotive Business Line. "In an entirely automated process that requires no manual intervention, the technology opens new possibilities for vehicle manufacturers as they look to increase personalization in response to rising consumer demand while also reducing emissions. We're delighted to have been able to work with Mercedes-Benz to help them make these extraordinary design visions a reality."

PixelPaint consists of a paint head with more than 1,000 tiny, individually controlled nozzles, mounted on an ABB robot such as the IRB 5500 paint series. Combined with ABB's 3D vision system and coordinated by ABB's RobotStudio® planning and programming software, the head tracks very closely to the vehicle body to ensure that 100 percent of the paint is applied to the car with no overspray or airborne misting. This eliminates the need for labor-intensive masking and repeat trips through the paint shop, resulting in zero waste, reduced environmental treatment requirements, and lower emissions overall.

The technology can recreate even the most intricate designs with unprecedented precision, while ABB's 3D vision system enables a high degree of repeatability. This ensures that each painted panel appears identical to the next.

"With PixelPaint, we are setting a new benchmark in painting technology," said Arno van der Merwe, Head of Production Planning at Mercedes-Benz AG. "The combination of the highest design and quality precision with innovative technological solutions is a milestone for the painting of our top-end models at the Sindelfingen site. This forward-

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looking technology raises us to a new level in individual coatings. It enables exclusive product results for our demanding customers.”

Mercedes-Benz will first use PixelPaint on the Mercedes-Maybach SL 680 Monogram Series. To further enhance the exclusivity of this model, the obsidian black hood is available upon request with an intricate Maybach pattern in contrasting graphite grey. This striking design would be impossible to achieve with a traditional process.

“The success of this project was only possible due to the close cooperation between ABB, the high-quality paint supplier, PPG, and the Mercedes-Benz project team,” said Dr. Julia Schuchardt, Head of Process Development, Coating Technology & Corrosion Protection at Mercedes-Benz AG. “With an eye on the future, we are already working to develop the application further in order to offer more color combinations and motifs to our customers.”

PixelPaint is just one example of how ABB’s smart technologies are transforming the paint process, completing the final piece of the puzzle in digitalizing automotive manufacturing. Together with solutions such as the RB1000i-S digitally-enabled atomizer – which achieves up to 99 percent transfer efficiency, meaning less paint and materials are required – ABB is making manufacturers more sustainable, efficient and competitive.

ABB is a global technology leader in electrification and automation, enabling a more sustainable and resource-efficient future. By connecting its engineering and digitalization expertise, ABB helps industries run at high performance, while becoming more efficient, productive and sustainable so they outperform. At ABB, we call this ‘Engineered to Outrun’. The company has over 140 years of history and more than 105,000 employees worldwide. ABB’s shares are listed on the SIX Swiss Exchange (ABBN) and Nasdaq Stockholm (ABB). www.abb.com

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