

# BMW Digitalizes Plants with NavVis Reality Capture Solutions



NavVis, the German provider of reality capture and digital factory solutions, is capturing BMW Group's worldwide plants and making the photorealistic panoramic images, floor plans and point cloud data available to all the car manufacturer's sites via its web-based platform, NavVis IVION Enterprise. The Munich-based mobile scanning specialist NavVis is supporting the BMW Group in the

digitalization of its production network with its Digital Factory Solution.

Since the project began in November 2020, NavVis has already scanned nearly four million square metres of BMW's plants using the wearable mobile mapping system NavVis VLX and other drone scanning systems. This includes complete coverage of Plant Spartanburg, BMW Group's plant in South Carolina, USA, with over one million square metres of indoor space and over 4.5 square kilometres of outdoor areas. Additionally, Plant Munich with 575,000 square metres and the production facilities in Plant Regensburg have already been successfully scanned.

By September 2022, Plant Dingolfing and Plant Leipzig will be fully captured, and by spring 2023, BMW Group plants in Mexico, South Africa, China and England will be fully digitized as well.

## Digital Redesign for the Production of the Future

"We are very proud to support BMW Group, one of the major global players in the automotive sector, in the digitization of its production network," said NavVis CEO Dr Felix Reinshagen. "Our cooperation demonstrates the importance of digitizing all locations for the BMW iFACTORY, BMW's strategic vision for their production. As a young Munich-based company, we can play a central role in contributing to the complete digital redesign of international production processes."

Since making the detailed 3D scans available via NavVis IVION Enterprise, thousands of BMW employees have accessed the data and integrated it into their daily work. The exact geographical positioning of the scans, as well as the entire workflow of the NavVis Digital Factory Solution, which is geared towards regular updating of the data, allow the scan data to be used in planning and simulation.

The scans are already being used today for the planning of production processes in logistics and in maintenance, without the need for time-consuming on-site appointments. Especially within worldwide production planning and in the simulation of processes, 3D scan data already plays a central role in visualization, planning and collaboration. Meetings of international teams often take place on the basis of NavVis IVION Enterprise, and 'you see what I see' forms the foundation for sustainable, joint decisions.



NavVis is capturing BMW's worldwide plants.

## Towards an Object-oriented Digital Twin

For the BMW Group, the digitalization of its plants is a crucial building block for the successful transformation towards e-mobility. With its LEAN, GREEN and DIGITAL pillars, the BMW iFACTORY represents a globally interconnected production network that operates efficiently, precisely and highly flexibly, while also remaining sustainable, conserving resources and applying circular economics. Data science, virtualization and artificial intelligence are essential elements of this massive advance in digitalization.

An important component of the DIGITAL area is the highly accurate, photorealistic mapping of all main production plants as well as many other locations by spring 2023. The 3D scans are the first step in the virtualization of production processes towards a complete, object-oriented digital twin. BMW planning experts will thus be able to collaborate in real time across geographical distances and time zones. This raises the precision and efficiency of planning for all structures, production facilities and even individual processes to a completely new

level.



NavVis Digital Factory Solution synchronizes reality and the digital world.

## Augmented and Virtual Reality

The NavVis Digital Factory Solution enables the early integration of virtually planned products directly into a virtual factory, significantly reducing planning efforts. Maintenance and servicing become automated and planning and production processes run stably and efficiently. With augmented reality and virtual reality applications, users are prepared for their tasks at an early stage and already trained on how to use machines.

“The NavVis Digital Factory Solution revolutionizes application areas of the digital factory with the ability to regularly update scans and to synchronize reality and the digital world. Our digital mapping of production environments lays the foundation for the virtual factory of the future,” stated Felix Reinshagen.



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