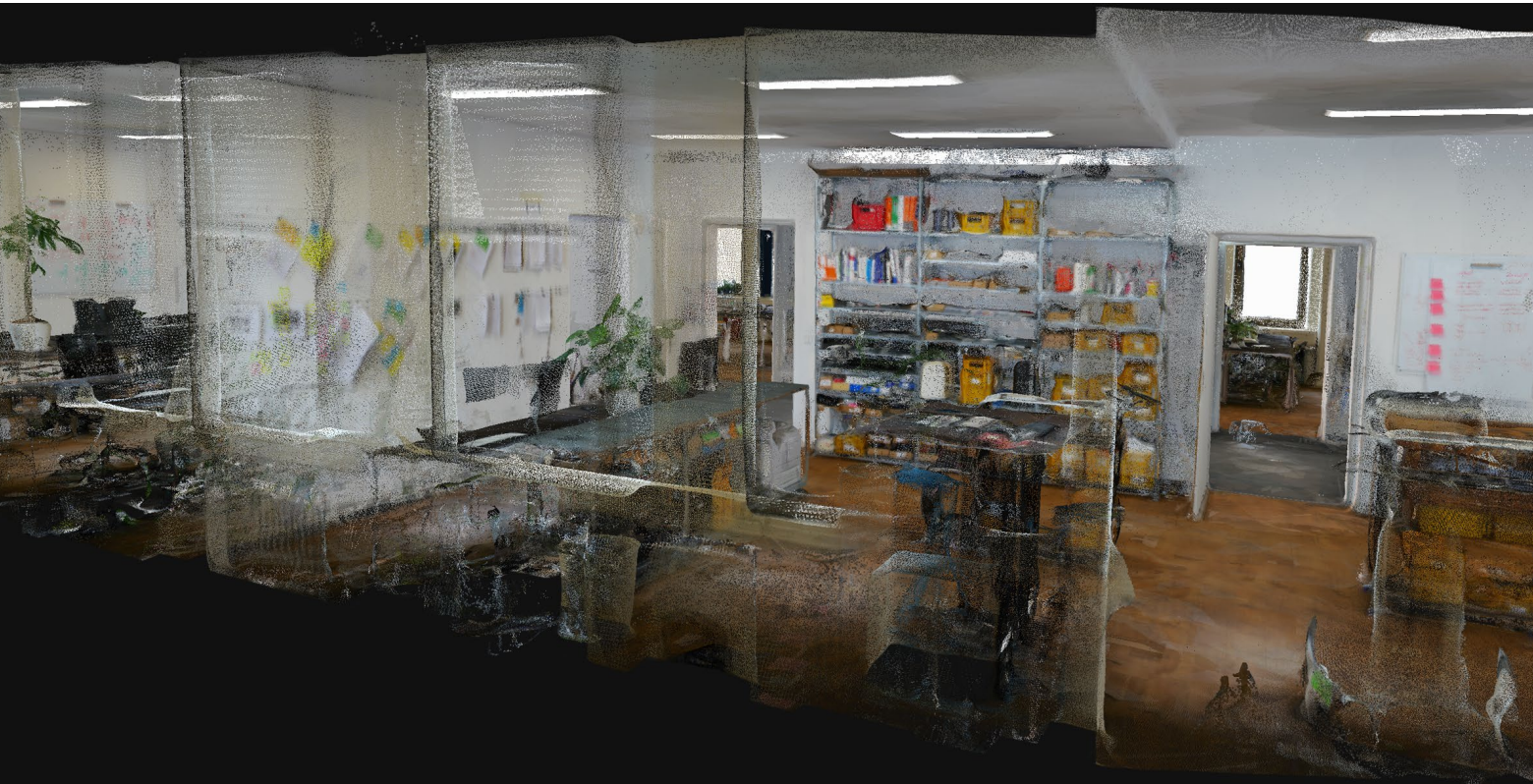


NavVis

One scan to
a fully digital
building solution

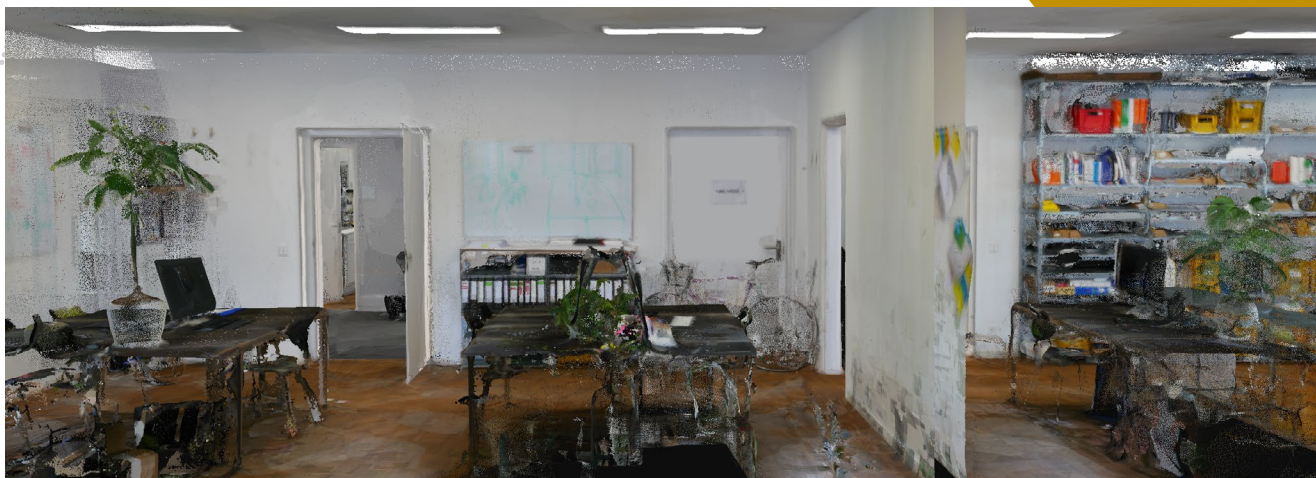


The NavVis M3 Mapping Trolley is an innovative 3D reality capture device



BY DOUGFLINT

The NavVis IndoorViewer is browser based software that displays the data captured as panoramic images and point clouds



Capturing panoramic images enables users to view colored point clouds

NavVis is a four-year old, 130-employee German company that has developed new technology for capturing high quality indoor building data at an unprecedented speed. The M3 Mapping Trolley is a proprietary scanning device equipped with three lasers, six cameras and several antennas. This enables the M3 Trolley to capture both point clouds and panoramic images, stitched together by the post-processing software. The Trolley also captures sensor data, such as magnetic fields, Bluetooth and WiFi signals, which support added capabilities such as navigation within the space.

All of the building data captured is then made available as a browser based 3D walkthrough, using no special software. It is similar to Google Street View, but with added functionality for indoor use, such as point-to-point measuring, point cloud streaming and a 'Point of Interest' feature that can be used to link detailed building information to the high-resolution imagery.

One of the big differences between scanning indoor and outdoor spaces is a far greater expectation of privacy behind closed doors. Unlike Google's outdoor data, the results of a NavVis scan are not always made available to the public. To

give more people an idea of what the next generation of scanning technology offers, NavVis recently used its scanner to capture its headquarters in Munich. The goal was to provide a comprehensive look at how building digitization, the process of converting every layer of building interior information into a digital format, compares to traditional building data capture.

It took 1.5 hours for an employee to capture four stories of office space—about 21,500 square feet. The

scan operator was not a professional surveyor; the Trolley automatically captures the data as it is pushed through the space. A touch screen provides the operator with real-time feedback so that he or she knows what area has been scanned successfully. The images show the many different functions and features enabled by the new generation of 3D digital scanning.

As a result of the scan, NavVis now has highly accurate 3D building interior documentation that can be used for



The data is captured quickly and automatically as the Trolley is pushed through an indoor space

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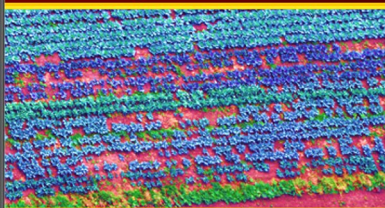


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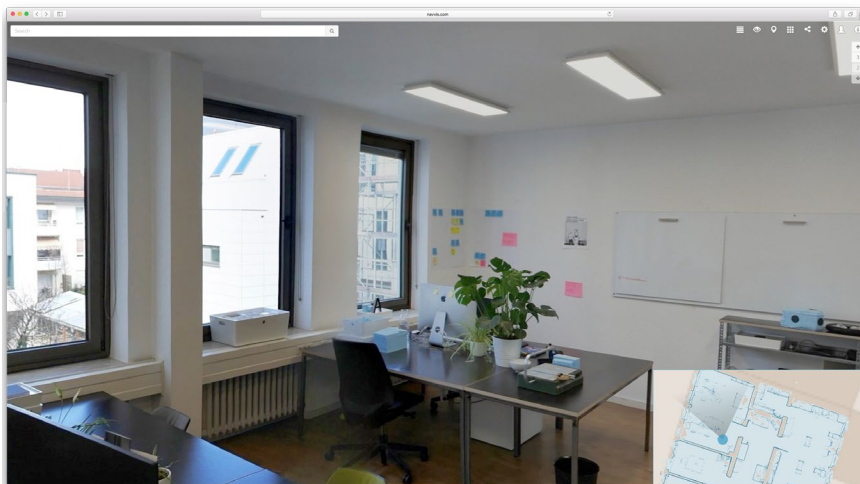


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It took 1.5 hours for one employee to capture four stories (approximately 21,500 square feet) of office space

building Facilities Management (FM) maintenance and operations, emergency response, planning and other applications. The Point of Interest feature allows all necessary building information to be attached to any object and viewed in the point clouds or panoramic images. The IndoorViewer instance (scene) also contains a navigation graph based on data captured by the scan. Building logistics can therefore be optimized; service and other personnel can be routed directly to the correct location via detailed building information and high resolution imagery.

The information captured by one scan also enables a wealth of digital processes. In the NavVis office case, the indoor mapping feature is used to route visitors to the correct location. The data is smartphone optimized and easy to share as a link. An administrator can determine access and data editing rights for each type of user. When scheduling

meetings, links to specific locations and relevant information can even be included in email invitations.

These are just a few examples of how the entire building life cycle can benefit from the data captured by the next-generation of scanning technology.

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Doug Flint—Global Head of Scan4CAD—NavVis GmbH is engaged in reality capture, reality modeling, navigation and visualization for 3D indoor mapping applications. Within such Scan4CAD markets as AEC, facilities management, emergency response and consumer, he manages sales, strategy and CAD / BIM workflow integration. He has over 18 years of experience in mobile 3D, digital imaging and point cloud solutions. Formerly, he was VP—Airborne Sensors at Leica Geosystems and co-founded Azimuth Corporation—developer of the ALS Airborne Lidar system. He holds BS and MS degrees in Optical Engineering from the University of Rochester and an MBA from Boston University.