

New Partnership Pioneers in Fully Autonomous Surveying in Construction



Trimble and Exyn Technologies, a pioneer in multi-platform robotic autonomy for complex, GPS-denied environments, have entered a strategic collaboration to explore the use of autonomous construction surveying technology. The solution will integrate Boston Dynamics' Spot robot, the ExynPak powered by ExynAI and the Trimble X7 total station. It will enable fully autonomous missions inside complex and dynamic construction environments, which can result in consistent and precise reality capture for production and quality control workflows.

"The integration of autonomous surveying technology into a construction workflow has groundbreaking potential," said Aviad Almagor, vice president of Technology Innovation, Trimble. "It can improve operational efficiency and transparency throughout the build

lifecycle while also transforming worker safety for potentially hazardous data collection."

New Era of Human-Robot Collaboration

Autonomous robots powered by ExynAI can sense and avoid obstacles, dynamically adapting to the ever-changing complexity of construction environments. To ensure the utmost safety and efficiency, the ExynPak mounts and integrates with a robot, supporting level 4 of autonomous exploration missions without requiring the robot to 'learn' about its environment beforehand. A surveyor simply defines a 3D volume for a mission and the integrated robotic solution handles the complexities of self-navigation without needing a map, GPS or wireless infrastructure.

The integration of the Trimble X7 provides high-speed, high-accuracy 3D laser scanning to capture the state of the environment. The captured data can be uploaded to the Trimble Connect collaboration platform and shared with project stakeholders for further analysis, including a comparison with building information models and previous scans to monitor quality and progress. The end result is a map of great detail and accuracy collected with minimal human intervention and risk.

"Industry has been waiting for reliable and robust autonomous technology to transform difficult and dangerous activities. Exyn's technology is helping to enable a new front in human-robot collaboration. By working with pre-eminent leaders such as Trimble, we aim to create adaptable, state-of-the-art systems to tackle the complexities across construction and industrial environments," said Nader Elm, CEO of Exyn Technologies.