Headfirst into the wall: Unitree B2 robot unsuitable for industrial use

speedikon FM AG has tested robotic dogs from Chinese manufacturer Unitree Robotics to evaluate their suitability for use in buildings and industrial environments. The aim is to develop software that enables robots to carry out tasks autonomously and safely in dynamic, unfamiliar environments—without requiring prior mapping or training. Due to the lack of obstacle detection and the resulting risks to people and infrastructure, the Unitree B2 model will no longer be used. speedikon FM AG remains open to collaborating with manufacturers whose systems meet the necessary safety standards.

Bensheim, Germany, April 14, 2025 – As part of its research and development activities, speedikon FM AG acquired robotic dogs from the Chinese manufacturer Unitree Robotics. The objective was to evaluate the practical suitability of autonomous mobile robots for industrial use. In the future, these robots are intended to perform tasks such as inspections, incident detection, data collection rounds, or verification of technical conditions in environments previously unknown to them—meaning no prior training or mapping is required. Potential deployment areas include buildings and facilities that are subject to frequent changes, where pre-mapped navigation cannot be assumed.

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While the smaller Unitree Go2 is equipped with obstacle detection, it falls short in many respects when it comes to meeting the demands of industrial use. Its weight, durability, battery performance, and payload capacity do not satisfy the standards required for real-world operating conditions. In contrast, the larger robot dog, the Unitree B2, offers significantly better hardware characteristics. However, it suffers from a critical shortcoming: the software lacks object detection. The robot cannot identify walls, doors, or people while in motion—even when operating autonomously. In response to an inquiry, the Chinese manufacturer confirmed that obstacle detection for B2 is neither part of the current software version nor planned for the upcoming releases in 2025 and 2026.

Particularly problematic is the fact that the remote control cannot be overridden. Even if a custom obstacle detection system were added via external sensors, it would be impossible to use that information to actively navigate around obstacles or stop the robot. B2 blindly follows its assigned command, even if an object is directly in its path. With a weight of around 60 kilograms and a top speed of up to 20 km/h, this presents an unacceptable safety risk to both people and infrastructure, as shown in **this video**.

"Safety is our top priority. A robot that cannot detect obstacles and simply runs into them has no place at our customers' sites. We need smart technologies that work reliably and protect both people and equipment," says Adrian Merkel, CEO of speedikon FM AG.

Meanwhile, the software foundations for productive use of such autonomous robots are already in place. The digital twin technology developed by **Framence GmbH**, a member of the speedikon group of companies, serves as a virtual map for the robot dog. This allows the robot to orient itself in a factory or technical facility without having to be physically present or trained in advance. To implement its software according to customer-specific requirements, speedikon FM AG remains open to partnerships with manufacturers whose mobile robots are equipped with reliable obstacle detection systems.

About speedikon FM

speedikon FM is a pioneering German software company that specializes in the digitalization of technical and commercial processes within buildings, data centers, and industrial plants. Since 1997, our company has been providing not just products, solutions, and technologies, but also a comprehensive range of services that empower our customers to optimize their asset-related business operations. Our team at speedikon FM possesses extensive expertise in handling vast amounts of data, complex databases, and seamless integration with existing software and hardware solutions. For additional information, please visit our website at www.speedikonfm.com.

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