

NILFISK, INC.

Autonomous Mobile Robots



The Challenge

Nilfisk, Inc. is a leading supplier of floor care equipment, vacuum cleaners, and high-pressure washers for both commercial and consumer use worldwide. As an industry pioneer with over 100 years of ambition driven by technology, they continue to develop innovative cleaning solutions for several market sectors. With expertise in development coupled with advanced robotic technology, a new era of intelligent floorcare was unveiled with the Liberty SC50 autonomous scrubber-dryer that enables unmanned cleaning.

Solutions

With this sensor being a key component, productivity and safety remain consistent in any cleaning operation for medium and large-sized environments. From schools and universities to hospitals and airports, the Liberty SC50 autonomous scrubber will perform at a high level in populated areas and adjust in real-time to any route changes necessary when people or obstacles are approached. The built-in sensing technology allows for the scrubber to automatically map out the most efficient cleaning paths while replicating that every time. Having the UAM safety scanner as a standard feature ensures overall reliability and unnecessary downtime while the scrubber cleans autonomously for up to six hours without human intervention.

The challenge of integrating autonomy in manually operated machinery came to fruition after years of development, testing, and modifications along the way with the use of 2D and 3D sensor technology. Particularly, the Hokuyo UAM-05LP safety laser scanner is an integral part of the overall safety system and navigation/obstacle detection portion of the Liberty SC50 model. With 2D LIDAR capabilities and industry safety certifications, the Hokuyo UAM-05LP provides area localization and mapping while tracking obstacles within the travel path of the machine.



Results

The Nilfisk Liberty SC50 is the first and only automated scrubber available on the market which meets the North American safety standard CSA/ANSI C22.2 No. 336-17 for robotic floor treatment machines. This is enabled by a range of technologies including the Hokuyo UAM-05LP. Being able to clean more floor space in less time with minimal supervision yields lower costs each day the machine is utilized. With distinct cleaning modes and optimizing time, this autonomous scrubber can easily be programmed for the next task at hand. By implementing an array of sensor technology such as the Hokuyo UAM-05LP, the Liberty SC50 has elevated autonomous floorcare to new standards of both effectiveness and efficiency in today's working environment.