



Better performance and higher productivity to Yamabiko's connected robotic lawnmowers

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With its "Connected Line" Yamabiko-Europe has improved the operation of its robot mowers and enhance the user experience, while reducing costs. On top of the expected benefits that come with automatic lawnmowers this new line brings additional advantages, such as better product performance and higher productivity. Thanks to cloud-connectivity and remote monitoring and control technicians and dealers can deliver a better service.

This case is one of the 15 smart product examples we have compiled for you in the [Smart Product Inspirator](#)

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[Yamabiko-Europe](#) - previously Belrobotics - is a Belgian company, part of the Yamabiko Group. It has been designing, manufacturing and selling automatic lawnmowers for more than 15 years. Its robots are specially designed to operate on large areas of up to 2 hectares, targeting large

gardens, sports fields, lawn farms, etc.

Why this smart product

In 2017, the company decided to design a new generation of robot mowers and ball-pickers: the “Connected Line”, that are smarter, more robust, easier to use, and having more evolutionary capabilities. The market is changing and the company needs to stay ahead with innovative products. Yamabiko therefore takes advantage of technology to improve the operation of its robot mowers and enhance the user experience while reducing costs.

Value for the customer

Robotic mowing solutions already bring many advantages comparing to traditional mowing solutions: a better mowing performance with the mulching technique, a better user experience thanks to the system’s autonomy, economic benefits of reduced labour and energy costs, and environmental benefits of reduced CO2 emissions and energy consumption.

On top of those benefits, the smart capabilities of the “Connected Line” are bringing several additional advantages. A better product performance and higher productivity are obtained using more advanced navigation algorithms and technologies. Thanks to more powerful embedded intelligence, the robots can deal with more complex installations. Thanks to cloud connectivity users and technicians can monitor and control the robot remotely from a portal or a smartphone application. Combined with a user-friendly interface and flexibility in programming the activity of the robots, this results in a much enhanced user experience. Technicians and dealers can perform in-depth data analysis offered on the portal and adapt the robot parameters, provide the user with efficient remote support, reduce the costs by limiting on-site interventions, and take predictive maintenance actions. All that is resulting in higher quality and lower cost service that can be offered by the dealers to the end-users.

Technology behind the Connected Line

The robots have a powerful embedded CPU platform with high computation and memory capabilities. Thanks to the use of open-source software and a software environment to simulate complex scenarios, the development cycle time can be shortened. The CPU platform is connected by Wi-Fi or 3G/4G technology to a cloud server that stores operational data and enables remote software updates. Both a secured web-application and a smartphone application with the same functionalities provide technicians, installers and end-users with real-time follow-up, analysis and control capabilities of a robot (fleet). Advanced sensor technology such as GPS-RTK enables high-precision positioning (3-5 cm) and robust and complex navigation algorithms for pattern mowing. A modular electronic architecture allows to easily adapt the system to regional requirements (connectivity, certification) and future extensions, and it keeps the warranty and repair costs down in case of replacements.

The “Connected Line” robotics solutions have been mainly developed in-house by the Yamabiko-Europe Engineering team in close collaboration with two other Belgian companies.

Capturing revenue

The quality and performance of the “Connected Line” robots allow Yamabiko-Europe to be more competitive, increase its market share and also serve market segments that have more complex

installations (multiple fields, golf fairways,...). On top of this, a subscription service has been put in place, giving the possibility to the user to subscribe to different user profiles and have more or less remote control and remote access to the robots. The content and amount of the data consultable on the web or smartphone applications are depending on the user profile that the customer can choose depending on its need. The access to a large amount of field data is also giving the system and software developers of Yamabiko high value information to improve the product performance, quality and reliability.

Next steps

The performance and capabilities of the “Connected Line” products are continuously increased by new firmware. This allows Yamabiko-Europe to be innovative and find new applications or market shares. In 2023, the major new innovation is the “WiseNav” technology, which allows the robots to work without the need of peripheral wire.

Smart Product Scenarios

To enhance your chances of success and guide your smart product innovation, Sirris offers you practical tools and guidelines. Our [Smart Product Inspirator](#) provides you with a framework for identifying valuable smart product ideas based on the 5 most common scenarios and 15 smart product examples illustrating these scenarios. With these carefully analysed scenarios we help you uncover the potential for success. The key scenarios for Yamabiko’s Connected Line robots are: '[Smart autonomy](#)' and '[Digital user interface](#)'

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