Digitalisation increases the efficiency of forestry harvesting

TEXT **OODIA/JOONA PAAKKANEN** PHOTOS **OODIA/ROOSA PALOKANGAS**

According to Marko Karttunen, Production Manager at Fomatec, the project has improved the predictability of production, as the system provides real-time information on the need for saw chains.

Digitalisation is revolutionising mechanical forestry harvesting and is also a step towards a more ecological future.

Modern forest harvesters are extensively equipped with smart technology, which generates an abundance of information on the equipment and environment. This data is utilised in various ways during different work processes.

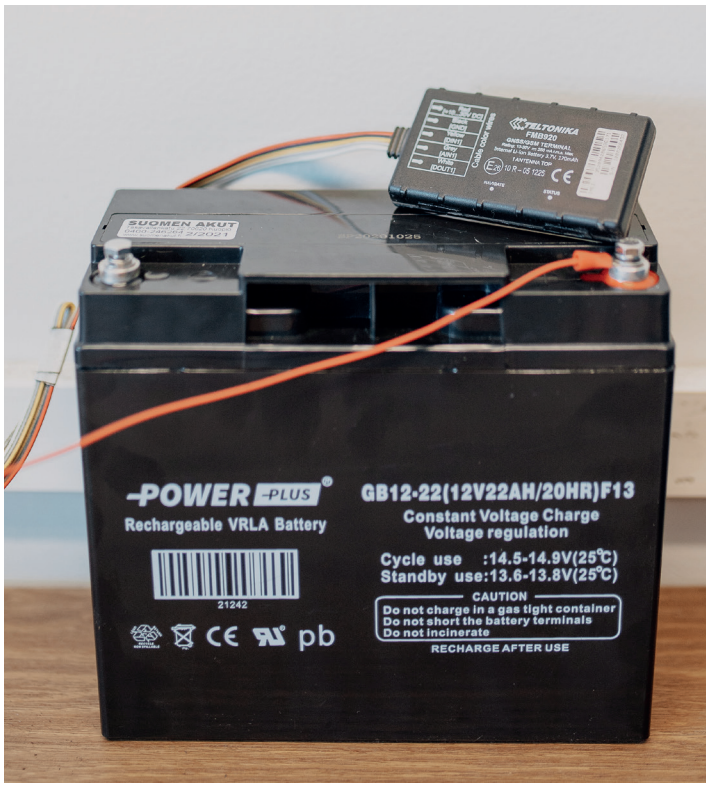
Fomatec Oy, a company specialising in saw chain maintenance for forest harvesters, is contributing to the digital revolution in the forestry sector. Fomatec is the developer of Green Line, a smart digital application, which ensures that blades, lubricants and other supplies are always available to forest machine contractors when needed.

The application's automation is based on the identification of needs; that is, the system has real-time information on when various supplies must be replenished. According to **Marko Karttunen**, Production Manager at Fomatec, a more efficient ordering process improves the predictability of production.

"When we automatically know what the customer will need next, we can adjust our production so that it meets demand. Information is transmitted smoothly between the parties," Karttunen says.

Mikael Korkman, the company's managing director, also emphasises the importance of the ordering system when the aim is to increase the efficiency of harvesting. The purpose of the application is to automate work processes for both production and logistics.

"If machines are stopped for blade sharpening, machines that are worth millions stand idle and unproductive in the forests. The aim of our sharpening service is the prevention of production breaks," Korkman says.



A sensor module utilising IoT technology travels on board a forest harvester in a Fomatec Green Line package and transmits location data.

Customer experiences are key

Experiments related to the project first started in autumn 2020 in the form of user stories. Fomatec cooperated with DigiCenter North Savo to obtain information on the operations of Motoajo Oy, a forest machine company, with the aim of identifying the use cases for the application. The idea of the application being utilised for inventory management was developed as a result of customer cooperation.

"The application allows Fomatec to quickly react to changes in stock. When the lower threshold is reached, the application generates an alert to indicate that a replenishment is needed," says **Marko Jäntti**, Research Manager at DigiCenterNS.

Motoajo's Managing Director **Jussi Puoskari** is also excited about the opportunities provided by the smart ordering system.

"Automation means that we will not run short of supplies at the work site. As a result, entrepreneurs' and employees' time is used more efficiently and there is also less wastage," Puoskari says.

A battery-operated sensor module utilising IoT technology was developed during the project, and the module can be used as a stand-alone unit, even in difficult weather conditions. In March, the module was installed in a Fomatec Green Line package and sent to the field on board a forest harvester, from where it transmits location data.

Regional vitality from forest management

Forestry has traditionally been an important industry in Eastern Finland. According to Project Manager **Keijo Haataja** from DigiCenterNS, the ongoing project supports the vitality of the region. The modernisation of industry practices is also a step towards a more ecological future.

"The adoption of an automated ordering system enables us to transition to the circular economy. With the application, we can calculate the carbon footprint of products and deliveries and optimise the cost-effectiveness of transport," Haataja says.

The application can also be scaled for other industries. According to entrepreneur **Markus Aho** from Funlus Oy, the IT supplier for the application, the application offers a great deal of business development potential for companies to harness.

"Agile software development combined with strong customer understanding has helped us to create an easy-to-use application together, which supports the customer's business needs," Aho says.

The project, which was implemented in cooperation with DigiCenterNS, Fomatec, Motoajo, Funlus and Secora Systems Oy, will continue as part of the DIH World project for the next two and a half years.

» DIGICENTER NORTH SAVO
Marko Jäntti,
tel. +358 40 355 2375
www.digicenterns.fi/en/

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