



TELEMATICS FOR AGRICULTURE AND FARMING INDUSTRY

INTRO

To satisfy the growing demand for farming produce and tackle many challenges affecting the agriculture industry, present-day farmers have to be more innovative, efficient, competitive, but save resources at the same time. As a result, comprehensive, affordable, and customisable agricultural machinery tracking solutions combined with process monitoring and automation are becoming not only an attractive option but rather a necessity.

CHALLENGE

World's human population keeps growing about 83 million each year. To imagine the scale of the process, consider this - it has grown from 1 billion in 1800 to 7.8 billion in 2020, so the agriculture industry is essential to our existence, and it has to find the way to performing in the best possible manner with the least waste of time and effort.

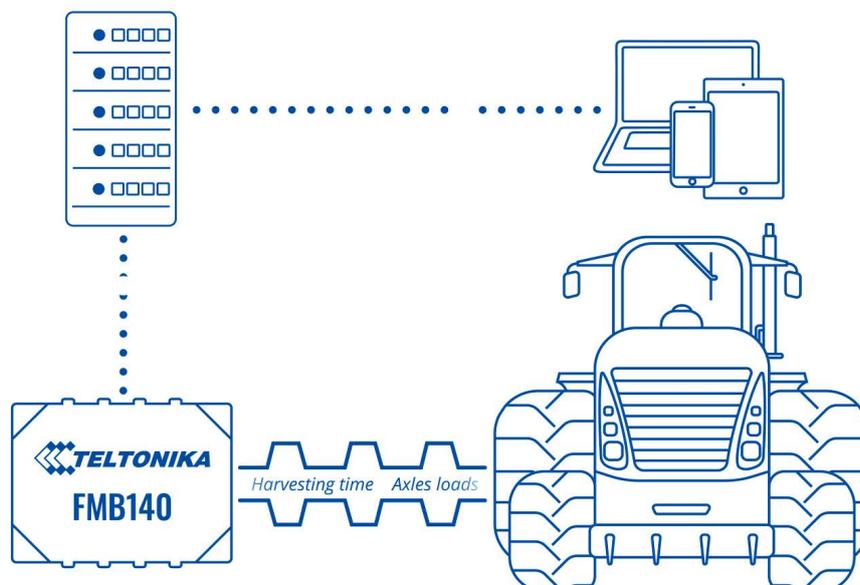
There are many issues affecting farming - weather and climate change, economic, environmental, political factors, demand and supply concerns. One of the major challenges in large scale farming - agricultural types of machinery, such as soil cultivation, planting, harvesting/post-harvest and any industry-specific equipment or accessories attached for a certain purpose - efficient management and tracking automation. Traditional paper notes and/or printed maps they used for many years neither practical nor meet present-day farming requirements and practices.

Furthermore, if farmers have a bad year because of agriculture issues that led to a poor harvest and significant financial losses, it affects many people in the country or region and that effect may even last for years to come. Did you know, according to the [State of Food and Agriculture \(SOFA\) report](#), food loss and waste reached over 15% in North America and Europe, and over 20% in Central and South Asia in 2019? That being said, how can contemporary farm owners get this efficient machinery tracking and management challenge sorted once and for all with a minimum effort and maximum results?

SOLUTION

Thanks to the fast-developing IoT technologies, agriculture-specific equipment, farming implements, and/or accessories tracking and management can be successfully achieved by combining GPS devices, CAN Bus data adaptors, and Bluetooth Low Energy 4.X (BLE) ID beacons. The ultimate choice for this matter - Teltonika ADVANCED category GPS tracker FMB140 with built-in CAN data reading feature and advanced software version supporting agriculture type vehicles (aka ALL-CAN300 option).

ID beacons are small radio transmitters that broadcast their unique identifier signal utilising wireless Bluetooth connectivity which has proven to have low cost, high energy efficiency, accuracy, and low interference. Beacons are easy to install, deploy, integrate into the existing ecosystem and swiftly replaceable if broken or stolen. They can be configured to exact customer needs, signal strength and data transmitting intervals can be easily integrated into virtually any size and form environment. Here to say, Teltonika GPS trackers support up to 100 beacons at a time and each of them will continuously work, depending on the model, around 5 to 20 years on a single battery transmitting signal up to 500 m range.



Here is how it works - BLE ID beacons had to be attached to various non-motorised farming implements, agricultural machinery, attachments, and accessories to be monitored and accounted for. Thanks to the wireless communication principal, the installation process is effortless, fast, and low-cost.

At the same time, Teltonika FMB140 trackers should be mounted on agricultural vehicles such as tractors, harvesters, loaders, round balers, farm utility and all-terrain vehicles, etc. Each ID beacon transmits unique signal and GPS devices read and identify all of them. Afterwards, FMB140 sends this data, combined with its GNSS location details, to a server for analysis.

Dedicated software determines all beacons (thus, tagged farming assets) location based on proximity to the closest Teltonika tracker mounted on an agricultural vehicle. Conveniently, there is no need to login, authenticate or do any other action – all tracking procedures and records are made automatically in real-time and accessible to farmers 24/7/365 via any modern device with internet access.

As a result, they know exactly what works were done in what fields and can plan their further actions accordingly what makes it a comprehensive and indispensable choice. No more the old-fashioned 'pen and paper' methods whatsoever which known to be inconvenient, impractical, and error-prone. To bring even more value and benefits to farming businesses, Bluetooth ID beacons usage can be successfully extended to many [indoor tracking solutions](#) in warehouses, farming houses, barns, mills, dairy buildings, etc.

FMB140 model, as any Teltonika GPS tracking device, offers multiple additional functions that are just as useful as live tracking such as Green Driving, Jamming detection, Excessive Idling detection, Immobilizer, Unplug detection, Towing detection, Crash detection, Auto/Manual Geofence, Trip, trackers configuration and firmware remote update via [FOTA WEB tool](#).

For instance, geofences are virtual boundaries a farmer can draw on a digital map in a relevant software application that is used in location-aware events and various alarms. This handy feature can be used for setting up events and receiving notifications when an agricultural vehicle or attachment enters or leaves a predetermined area. Even greater, it allows drawing zones around farming fields, warehouses, various sites of importance, secure areas, etc.

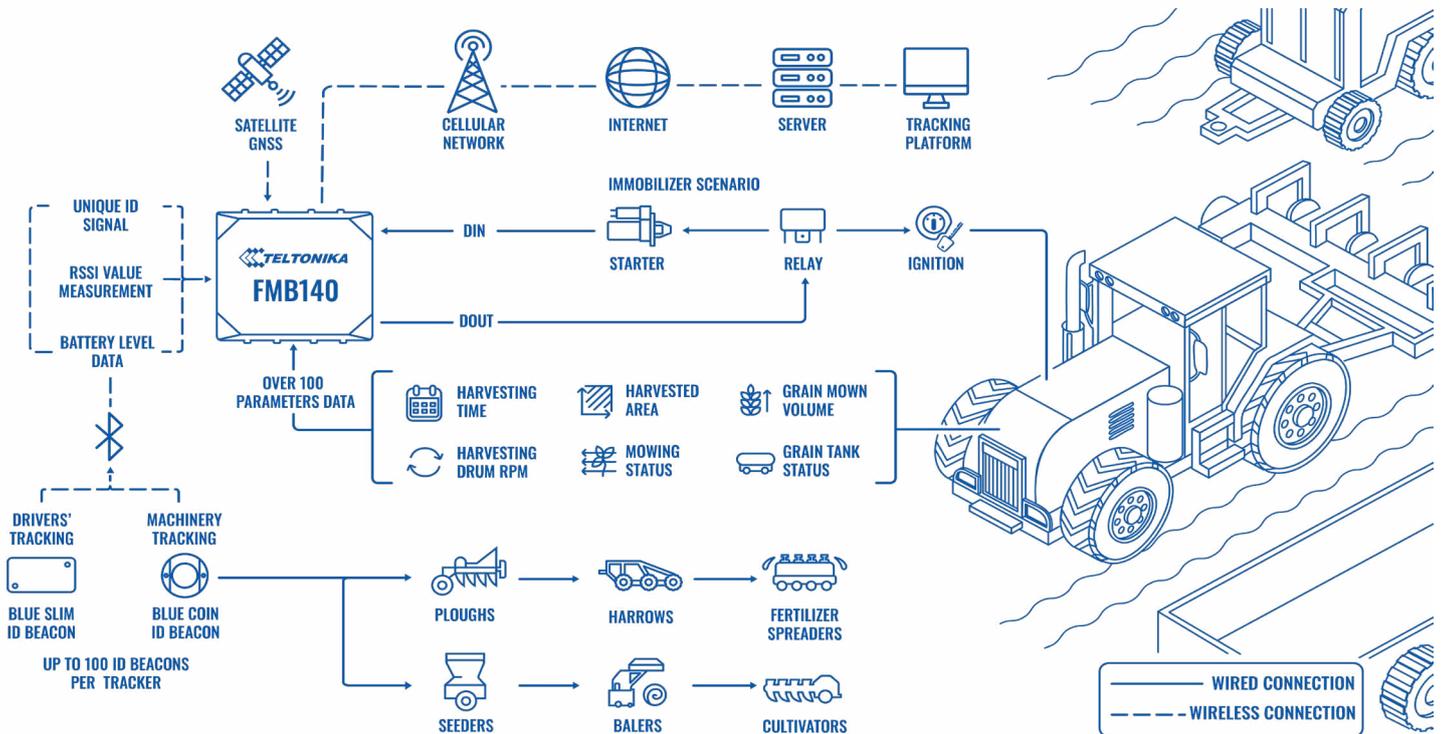
Keep in mind, ID beacons allow to track and simplify drivers' authentication solution too. If the authentication fails, a vehicle ignition starter will remain disconnected to prevent undesirable actions. Altogether, this ensures automated hassle-free fleet drivers' time, location, action tracking, monitoring, and management.

Wireless external [fuel/liquid level sensors](#) (aka FLS or LLS) can be utilised to measure current fuel volume and its changes in a fuel tank. They used as a part of a vehicle telematics system and provide accurate data measuring remaining liquid, fuel tank fill-up, and draining volumes. Also, it helps a farming fleet to stay accountable, economical, and prevent fuel thefts from motorised farming machinery tanks. Wireless communication eliminates the risk of cable vandalism and significantly simplifies the installation process.

Thanks to Jamming detection, Immobilizer, Unplug detection, Towing detection feature combo, drivers and agricultural vehicles safely will be substantially increased. Even more, farmers can implement automated [drivers' identification and working hours measuring](#) solution utilising [1-Wire](#) technology, GPS trackers mounted on vehicles and relevant accessories for this matter.

Built-in CAN Bus data adaptor reads over 100 parameters to ensure timely [fleet maintenance schedules](#) and service; highly efficient, comprehensive, and automated management helping to save fuel, time, avoid downtime, farm running costs increase, and overheads. All this contributes to the ultimate goal that every farmer looks for – the growth of productivity and output with a minimum effort.

TOPOLOGY



BENEFITS

- **Smart farming and outstanding efficiency** - 100 per cent accountability of everything important to the farming business: agricultural equipment, valuable assets, processes, patterns are being tracked, monitored and optimised. Maximum results with a minimum effort and no more messy paper notes or printed maps.
- **Low-cost Bluetooth ID beacons set up** – adding wireless identification functionality to agricultural types of machinery is a simple and fast procedure for the current users of our telematics solutions. If broken or stolen, they can be swiftly replaced.
- **Customisable solutions for every business needs** - to get the maximum value out of it, ID beacons signal strength and data transmitting intervals can be configured to exact needs and used in any form and size farming fields and sites.
- **Efficient fleet maintenance, safety, and timely service** – fleet owners can be sure that agricultural vehicles are being kept in perfect condition, secure, and fully operational. Tracking vehicle maintenance scheduling becomes a hassle-free automated process saving precious time and recourses.
- **Extensive Teltonika GPS tracker FMB140 functionality to serve farming needs** - built-in CAN Bus data reading feature, flexible configuration, multiple usage scenarios, and plentiful benefits to optimise fleet management, lower its running cost, and improve ROI.

WHY TELTONIKA?

Teltonika Telematics, as one of the leading manufacturers in the telematics industry worldwide, offers comprehensive solutions to meet even the most demanding farming needs utilising comprehensive GPS tracking and wireless Bluetooth connectivity benefits. We research, design, develop, manufacture, innovate, supply products, and provide impeccable customer service to our clients and business partners in over 160 countries worldwide. Teltonika is the right place to get all you need to succeed - an impressive variety of trackers, accessories, and solutions, bringing value for businesses and society.

Our over 22 years of expertise and innovative approach, extensive global market knowledge, exemplary product quality, state-of-the-art production facilities with automated robotic assembly lines, Quality Management System Certification [ISO 9001](#), and customer support meeting your expectations give us a competitive edge and make Teltonika Telematics a business partner of choice.

FEATURED PRODUCT

FMB140

RECOMMENDED ACCESSORIES

BLUE COIN ID, BLUE PUCK ID, BLUE SLIM ID

