

Digitalization of apple picking using telematics, Russia

Challenge

The client is the Granat company who grows apples in Krasnodar Krai, Russia, in orchards of over 110 hectares. The company has a fleet of 100 harvesting machines.

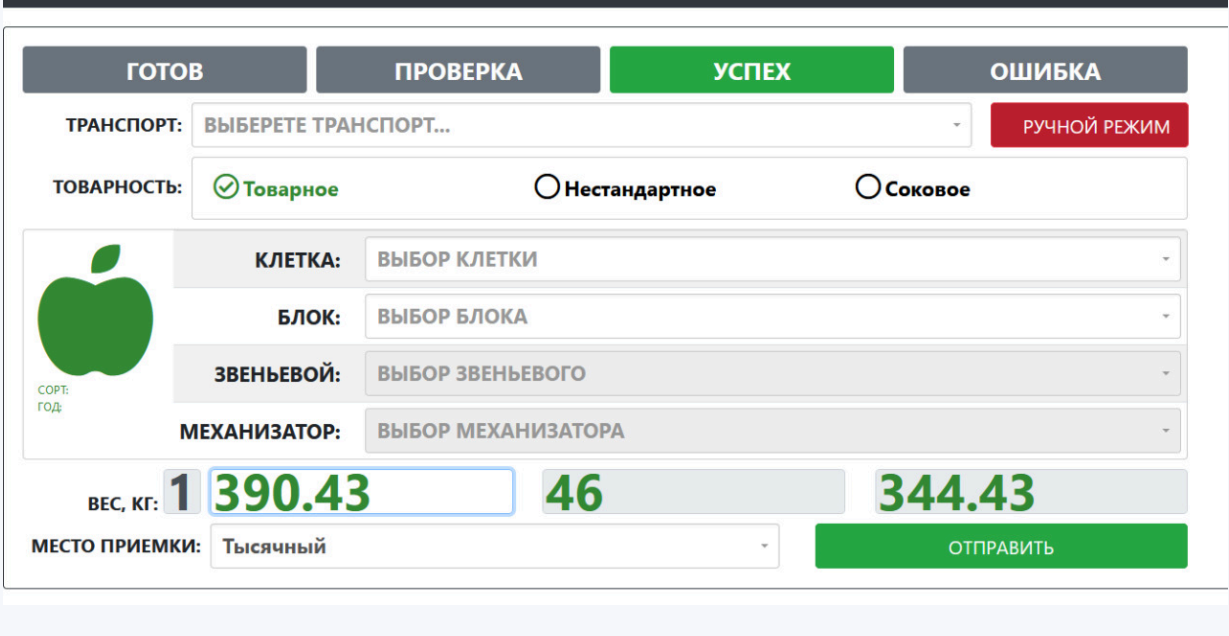
The process of picking and transporting apples was not transparent enough. There were cases of apple theft because there was no accounting system for collected harvest. The client wanted to ensure a complete record-keeping of the apple amount in the orchard by containers, varieties, areas and improve yield indicators.

Solution

Interra, Russia, developed a solution that made it possible to digitize the processes of harvest weighing, collecting, and accounting. The team worked on integration with the third-party systems (Wialon, 1C, weighing equipment) to achieve this. They also developed a mobile and web application from scratch and a driver for printing QR code labels.

Controlling harvest weight

- Before weighing the machine, a Granat's employee is identified by inserting a card into the reader.
- The reader is connected to the [Galileosky 7x terminal](#) and transmits gross/net weight data to it. The terminal is integrated into the developed solution so that all data from the card and terminal goes into the system.
- Integration with weighing equipment allows you to coordinate the weight with digitized data (area, apple variety, year of planting, etc.) and present a complete picture to the user.



Printing labels

Under the project, Interra specialists developed a print server for a label printer. After weighing, the system sends a request to the server, and the printer generates a QR code. The code label can be immediately attached to the box. Later, by scanning the QR code at any moment, you can learn exactly how much and what type of apples are in the box.

Integration with third-party systems

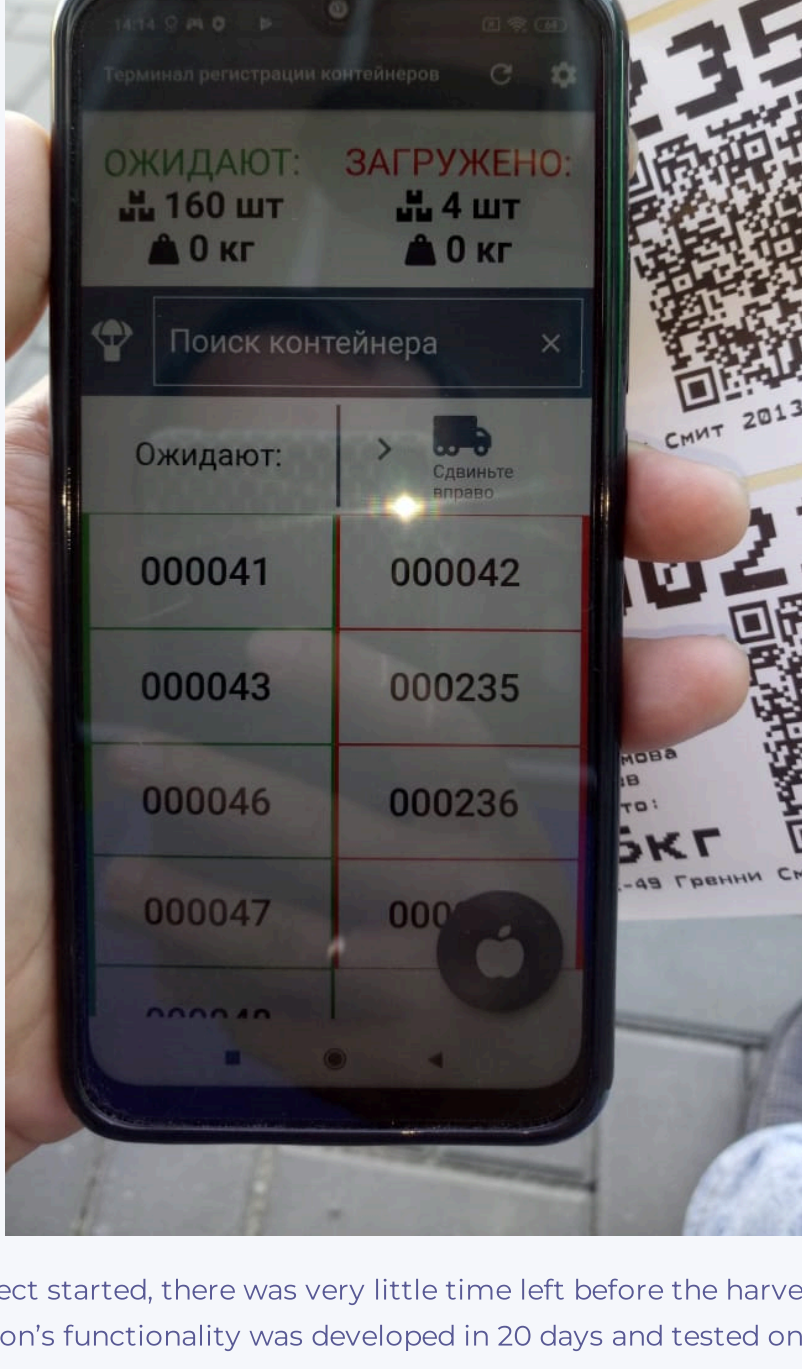
- Via Wialon, the user receives information on the vehicle location (for example, a tractor) on the site and tracks its movement and status.
- The solution is integrated with 1C, and the harvest data goes into this accounting system. It allows to fully manage the apple accounting process through 1C, as well as add and edit the data.

Analytics

The team imported data on previous apple picking periods and developed a system of diagrams and reports for analytics. All information is now presented in a single interface and can be easily viewed and analyzed.

Mobile solution

Interra created a mobile application to track the loading of trucks before transportation to storage and processing sites.



When the project started, there was very little time left before the harvest beginning. The core solution's functionality was developed in 20 days and tested on live data in practice.

Results

The solution by Interra allows you to fully track the entire apple picking process, from sending machines to the orchards to the final counting of the harvested fruit.

The client was so impressed by the result that now they are planning to augment the solution and integrate it with the sorting line, the inventory control system, and other types of machines.

- 25% increase of apple harvest**
 The gross harvest increased from 2,400 to 3,000 tons, thanks to the developed accounting system.
- All data in one interface**
 Weight, variety, planting date for the current and previous periods, and other data can now be found in unified tables and reports.
- Time savings**
 The solution made it possible to speed up all operations related to accounting apples and provided the factual basis for making more efficient business decisions.
- Digitalization of processes**
 All information on apple picking automatically falls into a single system, and the client can monitor operations in detail.

Company profile

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