Monitoring of irrigation machines in Russia

Challenge

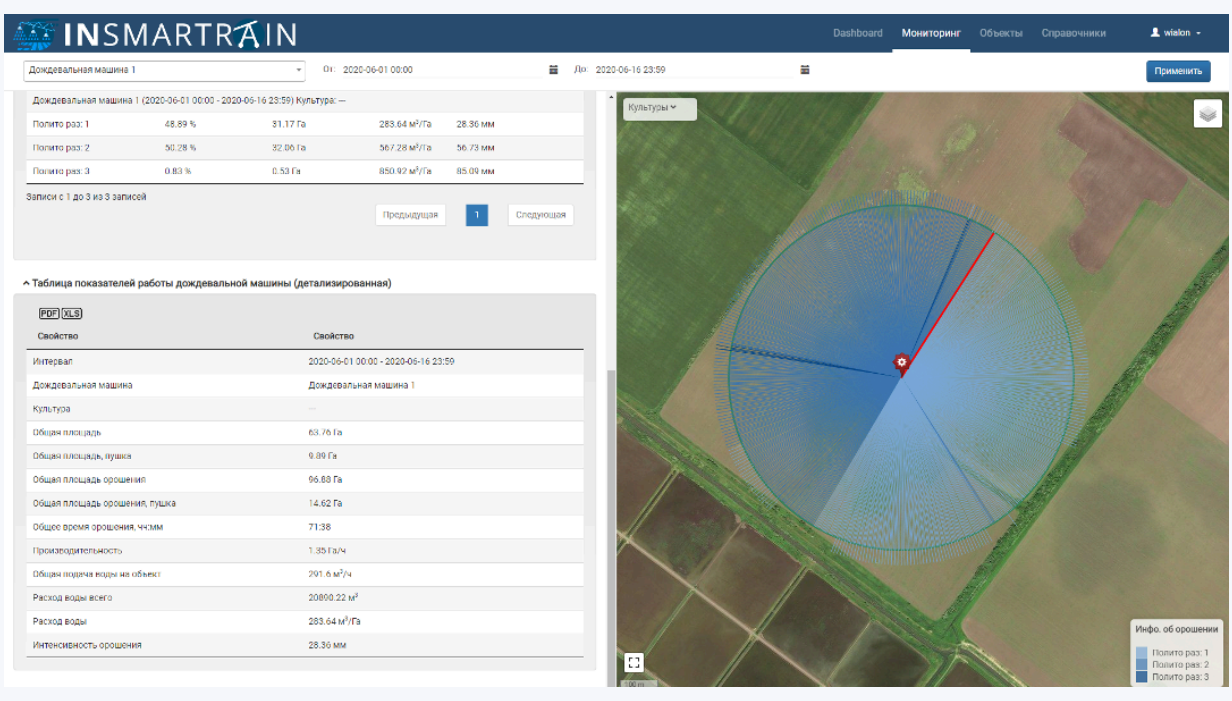
Zemlya Kubani LLC is a full-cycle agricultural enterprise in Krasnodar Krai (Russia). It grows corn, wheat, oats, and sunflowers. The company had to address a wide range of problems related to the operation of irrigation machines. They wanted to increase production efficiency through the use of artificial irrigation and precision farming.

- Only the equipment vendors offer fleet satellite tracking and remote control of irrigation machines — each vendor offers a different solution. If the farm has the equipment of different vendors, the monitoring becomes inefficient. Moreover, such solutions cost tens of thousands of euros.
- It takes a lot of time to start, control, and stop irrigation machines in view of their significant remoteness and size (with the radius of up to 800 meters). During the dry season, it all requires an entire team. At times, such operations can't be performed because of the weather.
- In case of breakdown, it was impossible to determine whether the irrigation machine was watering the field when it happened or was just driving around. The timely calling of a repair team was also a problem.
- It was impossible to determine if the irrigation machine had already watered the field and how well the work was done, if some areas were missed, or watered several times. On top of that, it was difficult to promptly adjust the irrigation process to weather conditions.
- **Agronomists were basically working in the dark, with no real data on how much water the soil received, risking to lose the crop quality.**

Solution

The Wialon partner Interra not only offered a complex agriculture GPS tracking solution but also developed a Wialon-based application for the client:

- Each machine was equipped with devices monitoring its movements and collecting telematics data, as well as controlling it. All the telematics data was sent to Wialon platform.
- **Galileosky and Owen** hardware was used for this project.
- **The Wialon-based application InSmartRain** was developed in several stages. The application is used for basic monitoring tasks and for specific and large-scale client tasks such as remote control of machines and calculating irrigation indicators, etc.
- In the process of the project implementation, some major issues related to the client's business requirements were solved. For example, the client needed the mathematical model for correct calculations together with monitoring delivered on both server and cloud versions of Wialon, as well as performing the complicated hardware installations in the field...



The InSmartRain application interface

Results

Due to the complex solution by Interra, the client got full control over all the operation parameters of the irrigation machines and reached significant cost efficiency. Remote control and other tools helped to achieve the main agribusiness goal – growing quality crops.

Up to 50% faster

irrigation machines pay off

Remote control

cost-saving when it comes to starting and stopping the equipment

Calculating the irrigation rate

in mm of rain for each irrigation area

Monitoring

of irrigation performance and actual use of the irrigation machine

Company profile

IoT project of the year nomination: Agriculture

Industry: Agriculture

Website: zemkub.ru

Solutions

Wialon

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