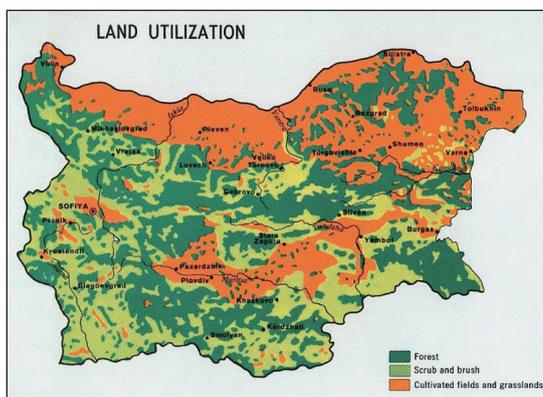


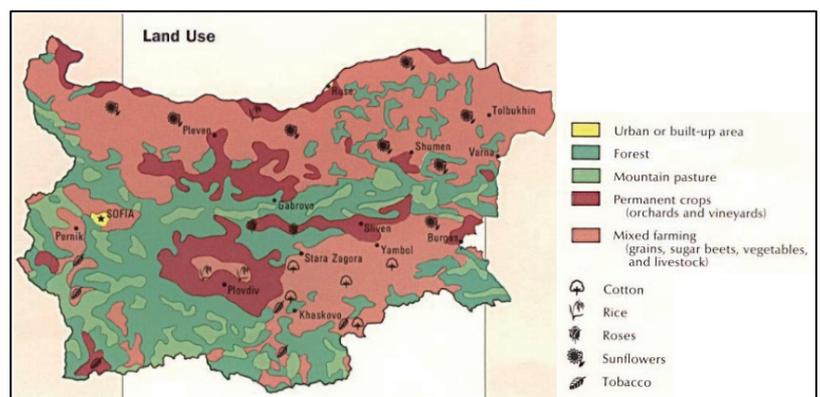
Precision Agronomics: The Future of Farming Technology

A GIS solution for Agriculture in Bulgaria by Hi-Target

Agriculture is the leading sector in the Bulgarian economy, with a farming area of up to 6.16 million hectares, accounting for 55% of the total territory. There are two main agricultural producing areas in Bulgaria – Dobroga area, located in the Danube Hilly Plains of the Northeast area and the Trace lowland in the South.



Bulgaria - Land Utilization from the Library of the University of Texas at Austin



Bulgaria - Land Use from the Library of the University of Texas at Austin

Agricultural Challenges Faced in Bulgaria

In the Northern Farming Area

Due to the large cultivation area, the local farmers have to use modern agricultural machinery for farming operations to improve productivity and efficiency. In order to operate highly precise and accurate agricultural machinery, advanced positioning technology is required.

In the Southern Farming Area

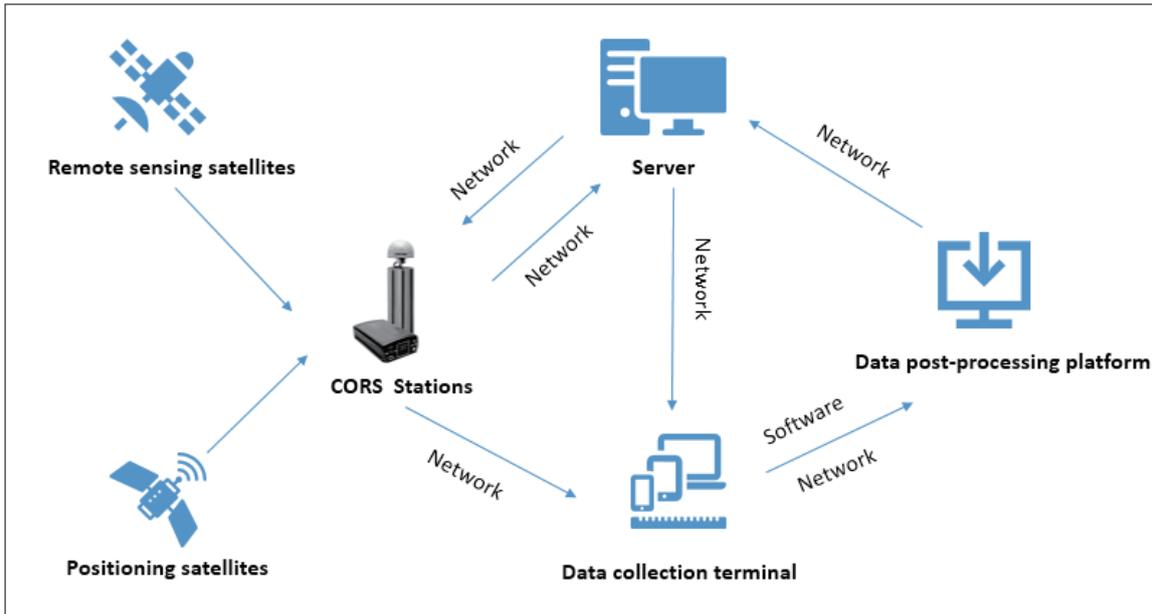
In the southern agriculture area, to improve economic benefits, it is necessary to use modern management during the growth cycle of crops because of its unique climate and soil.

For Cadastral Data Management

As land sale and leasing are allowed in Bulgaria, the management of cadastral data has become a cyclical work. The modern management of cadastral data requires simple-to-operate and budget-friendly handheld terminals for data collection and management.

High Precision Solutions

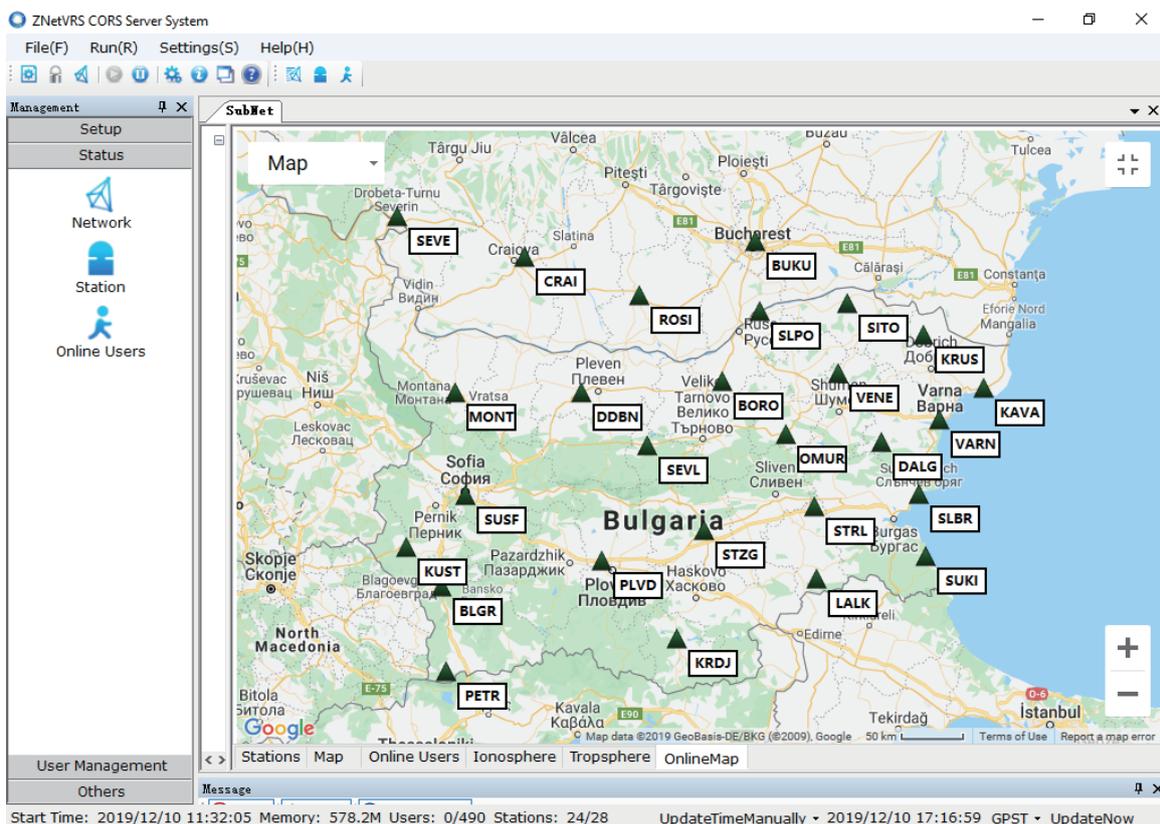
Overview



Solution Framework in Bulgaria

The Hi-Target solution includes CORS services, which is applicable in both GIS cases and the GNSS industry, handheld terminals, data-collecting software and data post-processing platforms. Through the combination of Hi-Target equipment and Hi-Target professional software, this is fully customizable to meet the different requirements of users.

Basic Service -- High Precision Correction Broadcasting



The Distribution of CORS Station in Bulgaria

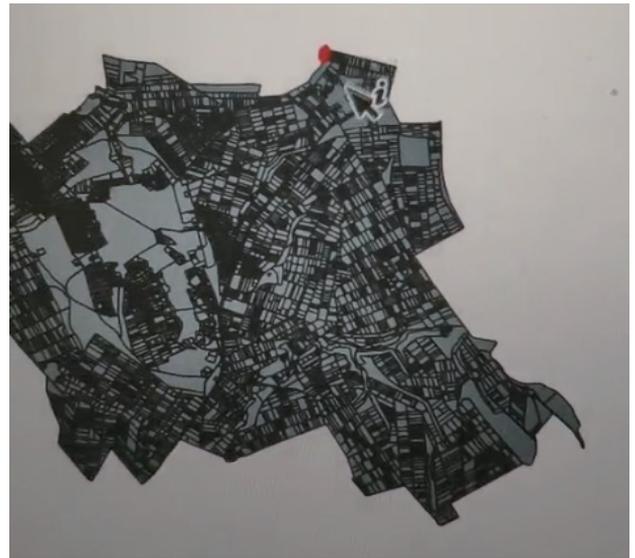
In Bulgaria, the current systems provide users with positioning information of up to 1-centimeter accuracy that covers the whole country with a simple click. Technical supports and after-sales service provided by professional and experienced local provider, GeoVara Ltd., can guarantee the stable performance and in-time support.

Mobile Rugged Devices for Positioning & Navigation

The classical rugged device applied in Bulgarian agriculture is Qpad X5, which is equipped with the Android 5.0 System, an 8-core processor, providing a large internal and external storage. It also integrates with a professional GNSS module to achieve 2cm accuracy in fieldwork.



Qmini A7 & Qpad X5



The Outport Shapefile Data

An Actual Scenario of Hi-Target Solution



Displaying the Solutions of the Precision Agriculture Management



Qpad X5 Applied in a Wheat Paddock Project



Field Data Management in Bulgaria

Cloud-Based Platform for Synchronizing and Management

Data Synchronizing

Users who operate the data management system releases tasks in the system while users in the field can upload the collected data in real-time. This will greatly improve efficiency from the office to the field.

Staff Management & Geofencing

Users in the office know the exact position in the farmland, monitoring the work of the machines and operators. By the geofencing function, users can avoid going beyond the boundary of the field during daily work.

Users Evaluation

Providing the complete solution allow users to be worry-free about the compatibility of both hardware and software. The solution combines easy-to-use devices and professional software for data collection, management, and display. In Bulgaria, the survey equipment is usually expensive and difficult to use. Hi-Target GIS devices are affordable with amazing accuracy and intuitive to use with just a press of a button.

Benefits

For Farmers

Having an affordable and complete solution for cadastral data management is helpful to ensure the exact place and boundaries of the land the farmers have rented for the next two years. This would greatly reduce mistakes and misunderstandings of the lease contracts and map.

For Land Investment Enterprises

Managing the whole cycle of agricultural production scientifically requires highly accurate management of cadastral data to reduce the difficulty of management and improve work efficiency.

"There is great potential in the development of agriculture in Bulgaria and the production is expected to increase by nearly 40 % over the next 8-10 years. The main factors for this will be the increase of sown areas and yields," from Eurolink Investment Group.

For Land Administration

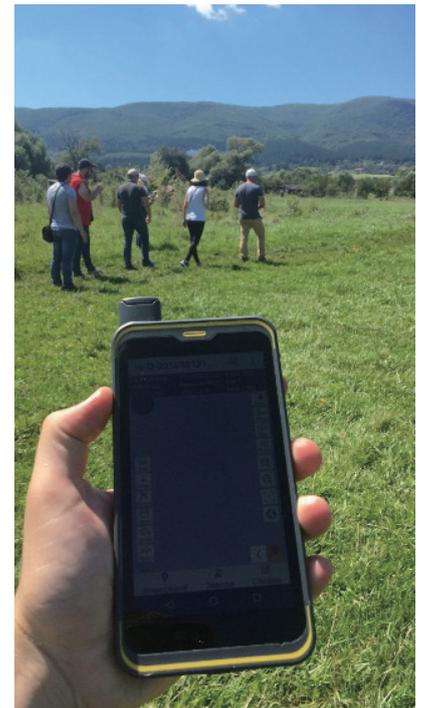
With the solution, users can easily update, manage compatibility and dispatch the cadastral data. Using scientific methods to manage land information and crop planting information can effectively reduce the probability of cadastral data errors. Also, it will speed up the popularization of precision agriculture in Bulgaria, promoting the development of Bulgarian agriculture and improving economic benefits.

For Other Industries

Besides of cadastral data management, GIS applications can also be used in many other industries in Bulgaria. For municipalities companies, using the hardware and software from Hi-Target can layout pipes, record the setting of the pipe, manage the death of the pipe, the diameter, the material, and stakeout the existing pipe.

For gas pipelines and electricity factories in Bulgaria, with the solution, they can easily manage the status of the pipeline or light poles, and quickly positioning the faulty pipeline or light poles with only the serial number of the pipeline or light poles, which will greatly save time and solve problems in time.

For the companies of modern urban resource management, natural resource management or depositing trash, the devices will play different roles, such as measuring light poles, single points, pipelines, coastal properties, or staking out the boundaries of houses. Working as control devices or orientation devices all depends on the actual needs of the users.



Multi-applications

Conclusion

Hi-Target GIS solution has been proved as useful and reliable in the projects of Bulgarian precision agriculture. In the coming days, the solution will be used in more industries and by more users. It is believed that the practical solution and the seasoned local team will offer the best experience and service for Bulgarian users at an affordable cost.

The suggestions and application pictures are from our strong partner - Nikola Dimitrov