HEXAGON
GEOSPATIAL

Advanced Geospatial Solution for Infectious Disease Management, Russia

PROFILE

COMPANY: Russian State Research Center for Applied Microbiology and Biotechnology (SRCAMB)

WEBSITE: www.obolensk.org

DESCRIPTION: The Russian State Research Center for Applied Microbiology and Biotechnology (SRCAMB) is unique laboratory and scientific complex that conducts applied research in molecular biology, immunology, and entomology to discover solutions for various health problems and modernize medicine and biotechnology.

INDUSTRY: Biomedical Research

COUNTRY: Russia

PRODUCT USED

- ERDAS IMAGINE®
- ERDAS APOLLO

KEY BENEFITS

- Provided a common framework for sharing and analyzing satellite imagery to assess environmental impact factors on disease transmission
- Enabled the organization to create a comprehensive catalog of geographic information
- Allows rapid web access to incident information

> Along with understanding how to share the data effectively, different departments within different agencies need to access and process data in a variety of ways.

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NEED FOR GEOSPATIAL SOLUTIONS FOR DISEASE TRACKING AND MANAGEMENT

For a number of years, SRCAMB, in collaboration with NeoGeography R&D Group (Technopark Protvino), explored the various spatial and temporal dynamics of infectious diseases. However, the organization found that traditional GIS and spatial approaches had obvious limits.

By investigating new spatial-temporal approaches, SRCAMB was looking for better quality of analysis of heterogeneous datasets within a common 4D environment. They found that simultaneous spatial and temporal analysis significantly reduces the systematic errors and biases, providing a rich environment and proper level of situational awareness for the healthcare management.

SELECTION OF ERDAS IMAGINE® AND ERDAS APOLLO

To aid this effort, SRCAMB is implementing both ERDAS IMAGINE® and ERDAS APOLLO. ERDAS IMAGINE is the world's leading geospatial data authoring system, incorporating geospatial image processing and analysis, remote sensing, and GIS capabilities into a single powerful, convenient package. Its advanced tools for change detection and map production enable users to easily create value-added products from geospatial data. SRCAMB employs ERDAS IMAGINE to process and analyze satellite imagery to assess environmental impact factors. It also serves as an access point for acquiring relevant information to assist in the analysis of environmental impact factors and further advance medical research and development.

ERDAS APOLLO is the market-leading enterprise solution for managing and delivering geospatial data and imagery. It consistently delivers more data, faster and with less hardware than competing image serving products. As an interoperable OGC®/ISO-based solution, ERDAS APOLLO easily delivers feature data, terrain, and virtually any digital object in an enterprise. Using ERDAS APOLLO, SRCAMB

can catalog and ERDAS APOLLO is the market-leading enterprise solution for managing and delivering geospatial data and imagery. It consistently delivers more data, faster and with less hardware than competing image serving products. As an interoperable OGC®/ISO-based solution, ERDAS APOLLO easily delivers feature data, terrain, and virtually any digital object in an enterprise. Using ERDAS APOLLO, SRCAMB can catalog and deploy all the available satellite imagery, providing a common, reliable framework from which researchers, as well as the public at large, can access relevant data and the value-added products created in ERDAS IMAGINE. After accessing the data, the end user can use ERDAS IMAGINE again to measure and analyze it.

The cohesive ERDAS IMAGINE/ERDAS APOLLO solution from Hexagon Geospatial has improved several core areas for SRCAMB. It has enabled the organization to create a comprehensive catalog of geographic information related to biological and chemical safety and develop the first-ever, seasonally correct, geographical context based on satellite imagery. Through ERDAS APOLLO's implementation of the OGC's WFS-T standard, the system even allows rapid web access to incident information. With this information, SRCAMB can effectively analyze environmental factors impacting the appearance and spread of infectious diseases.

4D-model of infectious diseases in Obolensk (Russia) shown in the Google Earth client

RESULTS

NeoGeography R&D Group and Navgeocom, authorized Hexagon Geospatial resellers in Russia, are now working directly with the Russian State Research Center to finalize the implementation of the solution. However, SRCAMB has already reached several significant milestones using the system. So far, they have been able to quickly create high-quality 4D-models of infectious diseases and integrate this information with a heterogeneous spatial-temporal 4D-context for the region. In addition, they have developed spatial imagery of the city of Obolensk and initiated decision support and incident registration for national regulating agencies.

Moving forward, SRCAMB plans on using this solution for the advanced analysis of environmental factors affecting forest mite habitats, as well as the localization of anthrax danger objects. It also hopes to consolidate a national infectious disease care system within common spatial-temporal framework based on ERDAS IMAGINE and ERDAS APOLLO.

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For more information, visit www.hexagongeospatial.com. Contact us at marketing@hexagongeospatial.com.

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