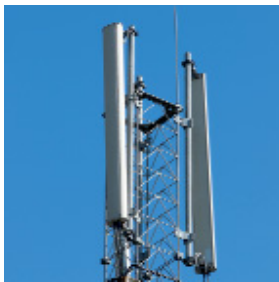


Energy & Infrastructure: Geo-Information Based Management Solutions

Infrastructure Planning and Monitoring Services for More Efficient Decision Making



for a broad range of activities: telecom network planning, logistics planning, infrastructure monitoring, and damage assessment. Our international team of experts, a five-satellite constellation with a frequent revisit time, and an in-house production system enable RapidEye to provide customers with reliable satellite image-based solutions. RapidEye can support the setup of a Geographic Information System (GIS), providing customers systems specifically tailored to their needs. The final products can be delivered via standardized web services, or with customized Web-GIS applications that show results in map or tabular format.

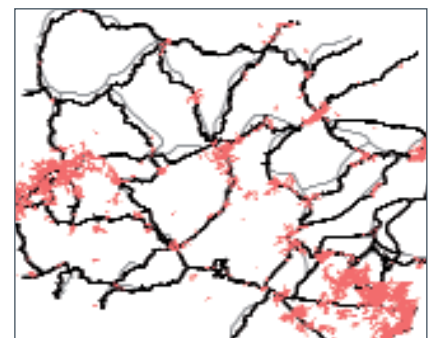
Planning of Telecom Networks

Working hand-in-hand with an innovative global telecom leader in a project, RapidEye developed several products and services tailored to the telecommunication market:

- > **RapidEye Ortho-Image Maps** support telecom industries in finding optimal locations for antenna sites. Because Ortho-Image Maps are quickly available, highly accurate and intuitively understandable, they serve as foundation for network design.
- > **RapidEye Land Cover and Clutter Maps** provide an accurate snapshot of

conditions at future construction sites, such as geographic distribution of vegetation, water bodies and built-up areas. The geospatial data in these maps can be seamlessly integrated into wave propagation models that govern the placement of antennas to ensure networks function at maximum efficiency.

- > **RapidEye Digital Elevation Models (DEMs)** can establish or fine tune wave length propagation models, especially in large rural areas.



Update of Road Network Database

Update of Road Network Databases

Road network databases can be used for many purposes: logistics planning, navigation, maintaining infrastructure, and planning of future roads and railway lines. The cost of inaccurate vector data can be significant; thus, data sources must be accurate and timely. In a project for a South American company, RapidEye developed an almost entirely automated process based on satellite imagery to update databases of road vectors in rural areas. Such a service enables companies in need of road and rail network data to correct inaccuracies. As with all RapidEye services and customer solutions, frequent and regular updates are possible by taking advantage of the frequent revisit time of RapidEye's satellites.

Oil & gas, telecommunication, electric, and logistics companies share a need for tools for cost effective planning and infrastructure maintenance. Each of these industries is confronted with different challenges, but they all need geo-spatial information to support planning and decision processes. For example, while telecom companies strive to optimize cell networks, the oil & gas industry is concerned with pipeline monitoring. RapidEye's geospatial solutions can be used



Land cover classification map

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Infrastructure Monitoring & Alert Service

Infrastructure network management depends on the ability to accurately and cost effectively monitor the status and environs of pipelines, cables, roads, and railways. This task is more



Pipeline Monitoring: The image illustrates changes along a pipeline (blue line). Critical changes like vegetation encroachment or construction activities are visualized in red, all other changes are shown in green.

challenging when the structures are located in rural or hard to reach locations. RapidEye's Infrastructure Monitoring & Alert Service provides services to assess infrastructure surroundings to prevent damages and dangers. The alert service informs infrastructure

operators about critical changes such as vegetation encroachment and construction activities. This information allows operators to make decisions quickly and easily. RapidEye designed such a service for a leading oil & gas company, which utilizes a highly automated process for detection of critical changes near pipelines.

Damage Assessment Support & Environmental Monitoring Service

RapidEye's **Damage Assessment Support Service** provides objective evidence of the status and conditions before and after a natural disaster or event caused by human activities. The ability to quickly and accurately evaluate the extent of damages makes this service invaluable to manage insurance claims or litigation issues. RapidEye can also track oil pollution or other environmental contamination by detecting vegetation changes with satellite images and can assist oil pipeline operators in managing clean up measures.

To support the oil industry in meeting environmental regulations, RapidEye's **Environmental Monitoring Service** provides objective and regular imagery coverage and analysis. RapidEye imagery provides a large scale assessment of environmental changes which is useful in delineating areas for clean-up or tracking remediation successes.

Our large international team of experts and partner organizations ensure that RapidEye fully leverages the capabilities of our own satellite system. RapidEye offers an unrivaled combination of advantages:

- > Customized industry specific solutions tailored to your needs for agriculture, forestry, environment, energy & infrastructure, security & emergency and spatial markets
- > Access to the broad knowledge and experience of our multi-disciplinary team
- > Quick, reliable delivery of services based on our satellite imagery in "near real-time"

RapidEye assists businesses and organizations with geospatial management information needs.

RapidEye – Your Innovative Partner For:

Geo-Information Solutions/Services

- > Analysis of customer requirements
- > Solution design, development, and integration
- > Training and customer service
- > Continuous delivery of management information based on processed satellite imagery

Satellite Imagery Products

- > Standard Image Products
- > Digital Elevation Models (DEM)
- > Large area satellite images (mosaics)