CASE STUDY

Product solution for: Siradel & Wireless Networks

DigitalGlobe imagery maps telecom network optimization

The pace of growth in the wireless industry continues at an astounding rate. The International Telecommunications Union estimates that 87% of the world’s population now uses mobile devices — about six billion mobile subscriptions. IDC reported that 712 million smartphones were sold in 2012, up 44 percent from 2011. Gartner predicts that one billion smartphones will be sold in 2013.

Increase in wireless demand requires planning

The challenge for cellular and wireless network providers is to ensure that this exploding population of users is always connected, a growing quandary as more and more smartphone use translates into more demands for network capacity. DigitalGlobe’s information partner, France-based Siradel is a world leading provider of optimization and advanced Radio Frequency (RF) coverage services. This involves the process of Frequency management, transmitter locations, and changes to the parameters of a wireless communications system to provide optimal coverage and capacity for the service levels required.

“It’s an extremely complex challenge,” explains Dr. Laurent Bouillot, CEO of Siradel. “We not only have more and more mobile users, but they require more bandwidth as their smartphones need more data capacity for the growing number of applications they are using.”

RF coverage critical to wireless network planning

Determining Radio Frequency coverage is the backbone of a wireless network’s infrastructure. It’s a complex three-part process involving radio link budgeting, or number of sites required to meet demand, propagation modeling that factors in land and usage characteristics, and fine tuning and optimization. The process considers terrain, land use, land clutter, and a myriad of other environmental factors to determine the appropriate antenna type, location, and direction.

In a project for a Latin American-based Tier One mobile operator, Siradel was tasked with providing an RF optimization evaluation for next-generation technology deployment. To create the required geographic database for the project, the company turned to DigitalGlobe for WorldView-1 and WorldView-2’s extensive stereo collection of high-resolution imagery.

Company information

Siradel, a DigitalGlobe information partner, provides world-leading solutions to improve radio coverage and capacity of virtually any wireless network, including 3G, 4G-LTE, WiMAX, DVB, WiFi, smart grids, and GSM-R. More than 200 wireless carriers, regulators, equipment vendors, and universities based in five continents are using Siradel to accurately optimize and plan outdoor and indoor wireless networks.

www.siradel.com
DigitalGlobe imagery integral to the process

Siradel was asked to determine the network’s present RF distribution and devise a plan to optimize capacity moving forward. WorldView-2 proved ideal to the study for both its extensive image library and readily available up-to-date high-resolution imagery.

“The first step is to gain detailed insight into the current network’s performance,” Dr. Bouillot explains. “Accurate, detailed historic and current imagery is a key factor in allowing us to determine gaps in network quality and availability over time through change detection analysis. This is a classic example of how satellite imagery is used by telecommunications operators around the world to evaluate their existing network performance, optimize it, and plan for deployment of newer LTE/4G services.

A research powerhouse

Conducting a number of significant research and development projects over the past couple of decades, Siradel has developed unique radio coverage expertise. The company draws on scientific and technology partners from around the world to conduct its RF measurement and optimization projects. The ability to leverage DigitalGlobe satellite imagery with its own data and RF propagation model production is invaluable to helping wireless operators meet capacity requirements while monitoring and controlling costs for radio access deployment.

“With DigitalGlobe imagery we can cost-effectively provide the data to build homogeneous, accurate, large-scale wireless network design in literally any environment, rural, urban or suburban. It is invaluable to help network operators make better, more informed decisions about network planning, roll out and optimization while keeping costs under control.”

DR. LAURENT BOUILLOT, CEO, SIRADEL

Challenge
Conduct an evaluation and assessment of a network planning solution for a Latin American Tier One global telecommunications firm seeking to determine optimal network capacity moving forward.

Solution
Siradel used WorldView-2 high-resolution imagery to build a geographic database to measure changes to Radio Frequency measurements and make an accurate determination of current and future requirements.

Results
Siradel developed a methodology for telecom and wireless operators around the world to evaluate existing network performance, optimize it and plan for deployment of newer LTE/4G services moving forward.

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