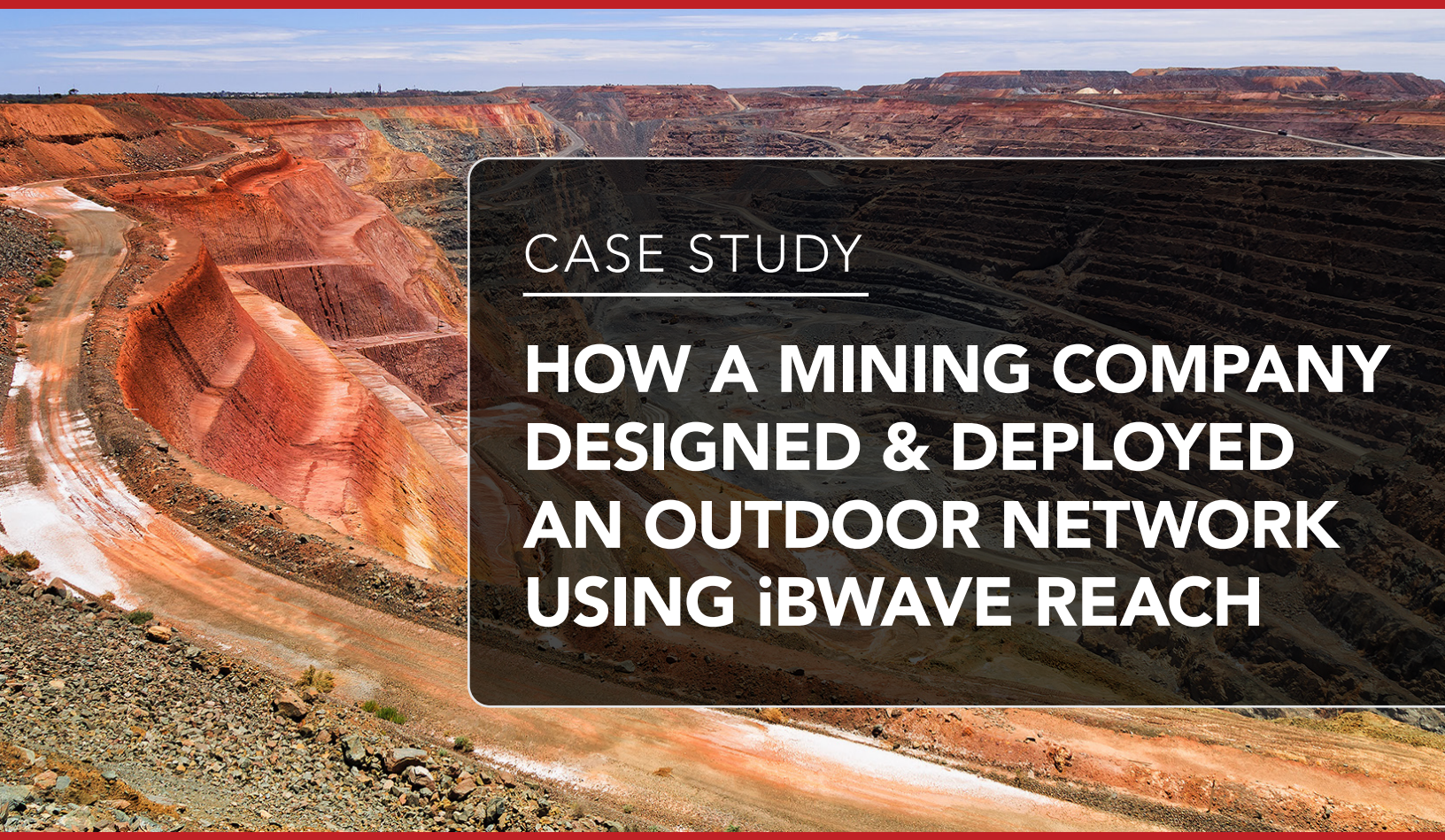
iBwave



CASE STUDY

HOW A MINING COMPANY DESIGNED & DEPLOYED AN OUTDOOR NETWORK USING iBWAVE REACH

Learn how one of the largest mining and logistics companies used iBwave to accurately model and design an outdoor pLTE network for a current and projected new mining site.

OVERVIEW

One of the world's largest mining and logistics companies was looking for a way to improve the RF coverage at one of their current mining site and plan for coverage in a future mining area close by.

This case study looks at a mining area that was already equipped with a WiMax network which wasn't delivering the expected performance due to poor coverage in certain areas. They were eager to see how proper planning and an accurate design could improve connectivity and ensure the network would perform as expected.

Why iBwave?

While the company was using a competitor software to design Wi-Fi networks, they were starting to see more and more projects in other technologies and needed a software capable of more than Wi-Fi.

Since iBwave software provides design capabilities for Wi-Fi, Private LTE and IoT bands, among others, as well as the ability to efficiently plan and design an indoor/outdoor network, it was an ideal choice.

THE CHALLENGES

1 Accurately Model RF Environment (Mine)

With a challenging RF environment that includes both indoor and outdoor, the company needed a way to accurately model the outdoor mining area and its landscape including the various topology of the surrounding mountains and valleys. One of the bigger challenges was ensuring that vehicles equipped with IoT sensors would successfully maintain connectivity while moving from the indoor environment to the outdoor.

2 Predictive Design for Outdoor Network

Prior to iBwave and with no way to do a predictive design, the company had to install equipment and conduct time-consuming surveys. Sometimes, they did not have enough time in the project phase to do the surveys so installations were based on previous analysis or experience. As a result, target coverage was difficult to achieve and led to inevitable time-consuming troubleshooting.

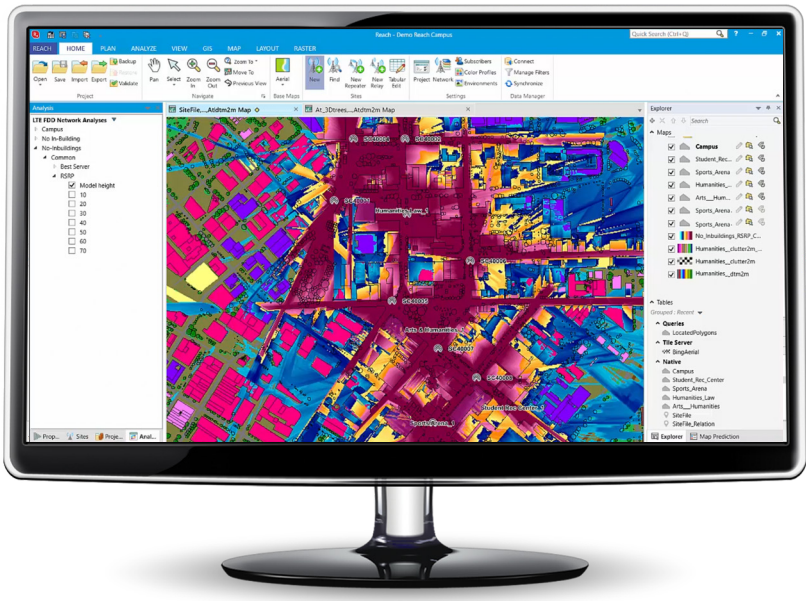
3 Standardize Reporting & Processes

As one of the largest mining companies in the world, there are many operations running simultaneously in different regions of the world. And while some standardization existed around project standards and KPIs, the company was looking for a way to introduce more standards by wireless technology (Wi-Fi, IoT, LTE, etc.), sites, and regions.

THE SOLUTION

The solution used for this project was **iBwave Reach**, our wireless network design software that can be used to design an indoor + outdoor wireless network.

Using **iBwave Reach** the company was able to model environment, complete a predictive design for a new pLTE network and start the standardization of reporting across wireless technologies, sites, and company regions.

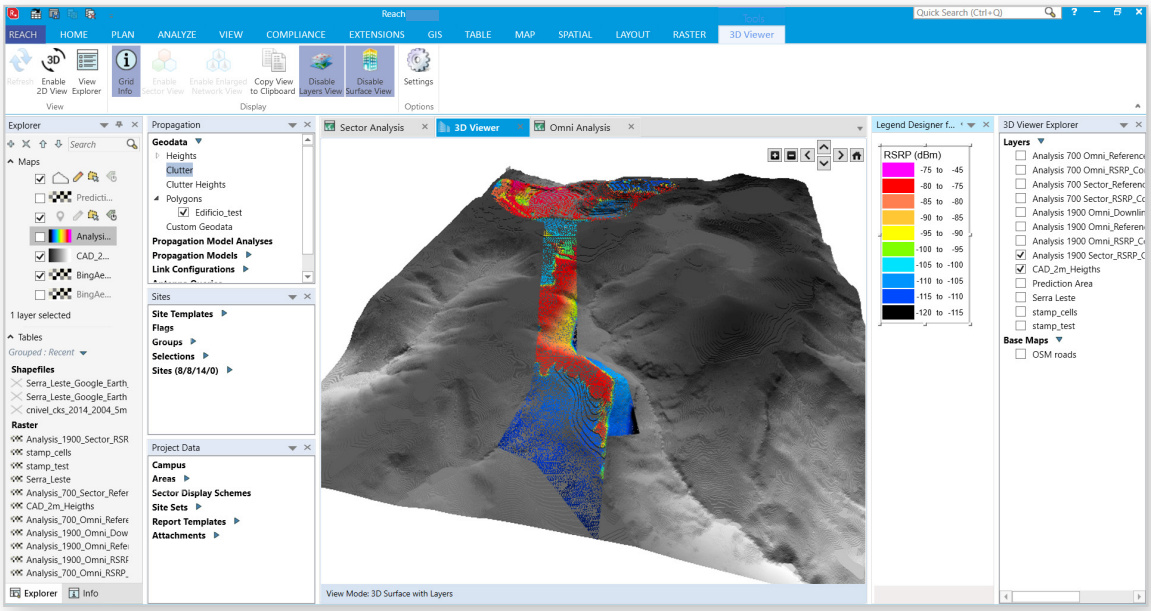


THE RESULTS

Using iBwave to evaluate and enhance the performance of the existing network and to plan for the connectivity needed for their new mining area has led them to save significant time and money on their projects. Here is how.

MODELING

By using **iBwave Reach** they were able to model the area of interest in detailed 3D including all the topology surrounding the mining area using GIS data.

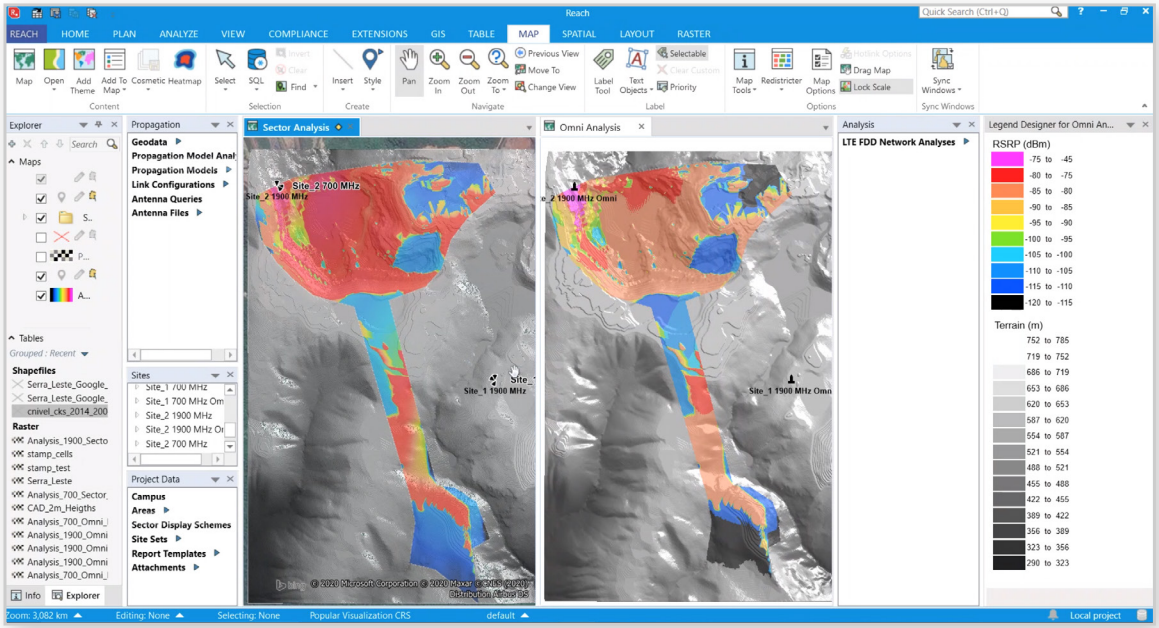


iBwave Reach's powerful 3D modeling capabilities lets users leverage topology data to accurately model complex environments.

PREDICTIVE DESIGN

Once the model of the mining area was complete, they were able to complete the predictive design of the pLTE network. To do this, the network system in the specific band and frequency was created, including the existing sites, sectors and antennas configurations. The prediction was done to analyze the generated RSRP output map in the predefined prediction area.

By accurately simulating the performance of the network, they were able to optimize the design and be confident the network they were designing was exactly what they needed. Thanks to the iBwave's high level of prediction accuracy, they were able to easily make changes in the network parameters and site configurations such as power, antenna model, azimuth, downtilt and heights. They were also able to test extra towers and/or different available frequencies. They saved a significant amount of time on their project and can now use the existing surveys to calibrate de prediction model.



iBwave Reach's side-by-side views lets users assess the predicted performance by comparing between different network simulations.

STANDARDIZED PROJECTS TEMPLATES AND REPORTING

The company used **iBwave Reach**'s seamless integration with **iBwave Design** to create templates and standardize their reporting. They started the process to have different reporting templates according to technology and region. While it is a large effort to standardize the reporting and establish the templates in the beginning, the efficiencies gained in the long term will be well worth it and gives them a way to streamline the design of their networks across departments and regions.

Overall, with challenging environments to navigate mainly consisting of ports and mines, this mining company needed a software they could rely on for accurate prediction for all the wireless technologies they were deploying. With iBwave they get just that.

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