

Powering Interactive 5G Network Planning for a Large U.S. Telecommunications Company

The Business Challenge

One of the largest US telcos wanted to accelerate its 5G planning and rollout efforts while also ensuring the new and upgraded infrastructure would deliver high ROI. As 5G relies on small cells that require direct line of sight to transmit signals, this may require operators to install up to 10 times as many cell sites per square kilometer compared to 4G networks. To plan where 5G small cells are located, telcos therefore require next generation network planning solutions to avoid buildings, trees, and other obstructions.

The telco wanted to rapidly model hundreds of potential 5G deployment scenarios for any given market to determine which configuration of small cells, combined with fixed assets, would provide the greatest coverage to existing customers, high priority customers and most likely candidate customers to churn from another provider. This was taking existing big data platforms and location platforms hours, if they could complete it at all, due to the scale and complexity of the data involved. Given that telcos are racing to build the best 5G network, accelerating this analysis can deliver significant business value.

The Kinetica Solution

With Kinetica, the telco is able to accelerate 5G planning and rollout with interactive, network visualization at scale, line-of-sight analysis, and predictive modeling of small cell network coverage to optimize decision making. They can better understand where to place 5G small cells and forecast their impact on coverage of customers and households to maximize ROI.

This telco leverages Kinetica to dynamically visualize and analyze their RF propagation models for a given market against an open source building footprint dataset of millions of buildings. Kinetica can determine the percentage of coverage for each building, area of coverage for each building, and total linear footage calculation against the exterior of each building (used to determine whether or not a building would be deemed covered by the standards defined by the carrier). The telco can quickly understand and analyze different scenarios for 5G coverage and users can interact with the data in real-time. It can also perform interactive line-of-sight analysis to better understand the impact of fixed assets on coverage.

The ability to run scenarios for the vast number of possible 5G deployment configurations in seconds, compared to hours (up to 25,000x faster than previous solutions) provides the telco the flexibility to adjust model variables with exponentially more scenarios identified to minimize risk in deployment decisions. Kinetica delivers new, granular insight into building and subscriber 5G coverage for planning and rollout that has been previously impossible to attain.

Coverage Analysis

