

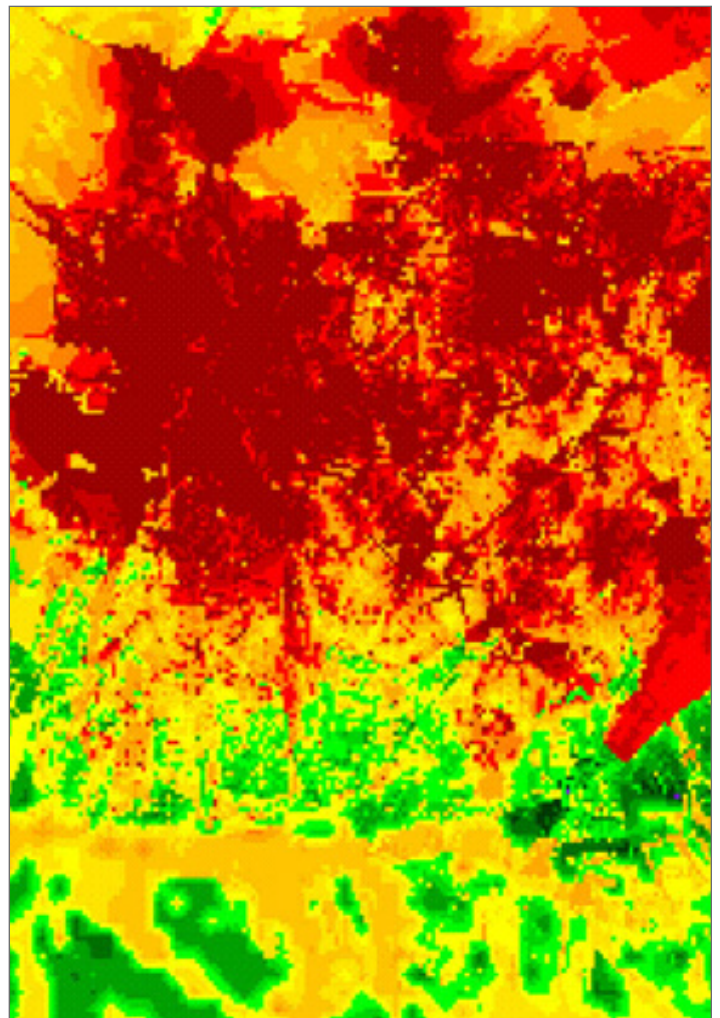
# CASE STUDY

## Intermap® helps German telecommunications company improve radio network planning.

### Challenges

With over 18 million customers and annual revenue of more than \$4.2 billion, E-Plus Group is Germany's third largest mobile telecommunications network operator.

As a basis for the company's radio network planning, E-Plus Group was using a digital terrain model (DTM) based on individual maps of the German federal states – each more than 20 years old, and each with very different vertical accuracies. This resulted in miscalculations and errors in the company's elevation models. "You can imagine what happens to radio waves if they hit such artificial, and wrong, barriers," said Senior Expert Frank Schwedler, Geographic Information Systems (GIS) and Geo Data Group. "We needed a more precise model of the terrain without anomalies to help us optimize our investments and ultimately to gain the highest customer satisfaction. We calculate how many customers we cover and the number of radio cells needed based on our DTM. Models based on bad data give us unrealistic results, and we might build too few base stations or too many."



*E-Plus' planning and optimization tool showing a field strength prediction with the areas in red being well-supported (good coverage and signal strength).*

## Solution

A new requirement analysis by Schwedler revealed that to gain optimum results in its radio network planning, E-Plus Group needed a DTM with vegetation and buildings removed. The company purchased digital elevation models created by Intermap's proprietary interferometric synthetic aperture radar (IFSAR) technology. "We compared Intermap's data to our old resources and saw a much more precise option with many more details and anomalies are no longer present," said Schwedler.

"In the delivery phase, Intermap answered all of our questions," he said. "Every time we needed additional datasets for our testing we got them and any initial problems have been solved to our complete satisfaction.

It's a pleasure to work with the people from Intermap."

## Results

E-Plus Group began using the Intermap dataset within its radio propagation software in June 2009. The company has since made several additional quality checks, "all with excellent results," according to Schwedler. With better radio propagation models, the company can make better investment decisions leading to increased customer satisfaction. "From the initial testing, the improvements were quite visible and impressive to E-Plus Group's management and key to their buying decision," Schwedler said. "I have already recommended Intermap to many of our contacts and other companies and in the telecommunications industry."

**“** The superior level of detail, the more precise and more homogeneous dataset, and the ability to make better propagation models is easily worth our investment. **”**

**Frank Schwedler**  
Senior Expert, Planning and Solutions  
GIS and Geo Data Group

# INTERMAP®

Intermap Technologies® is a global geospatial solutions leader focused on improving the ways in which people, businesses, and governments use location-based information. Intermap provides products, services, and solutions that help businesses and governments solve their geospatial challenges.

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