

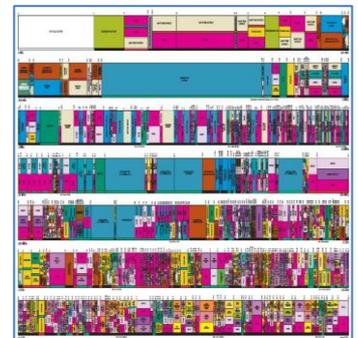
## Summary

Everybody is cautious with money, and the bigger the sum, the more cautious people are. So, when a spectrum regulator offers frequencies for sale with price tag in millions, everybody involved wants an extremely precise definition of what is being sold and what it will do.



## Challenge

A European regulator was preparing for an auction of spectrum to operators of Long Term Evolution (LTE) mobile networks and asked ATDI to provide the planning and modelling that would identify potential of the frequencies, areas where there might be issues and what strategies and tactics were available to reduce or remove those issues. All parties were acutely conscious that in this mountainous country, the population was concentrated in a few cities and that the frequencies for sale were close to those used by television broadcasters; significant interference to either the television or LTE signals would not be acceptable, nor would wholesale exclusion of the rural population from services.



## Strategy

To reduce the interference between television and LTE networks, several mitigation techniques were investigated in a sample area around the capital city. One of the most efficient mitigation techniques was found to be to limit the interfering LTE base stations to only vertical polarisation; this is based on the fact that, with a few minor exceptions, the country's digital television network is horizontally polarised. ATDI also proposed that while network designs were being completed, LTE operators should consider the interference potential to the television networks and suggest mitigation techniques they could deploy to overcome the effects, including filtering. In addition, the company advocated a feasibility study to assess the re-assignment of spectrum of affected areas away from channels 58 to 60; the study would also look at the effect of not using these channels in highly populated areas.



**ATDI: smoothing the path of radio auction**