

## Overview

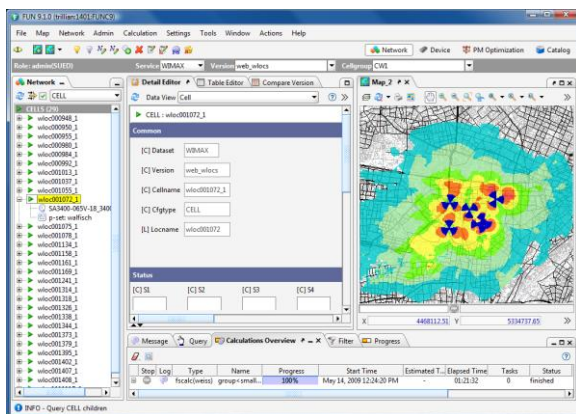
This brochure provides a description of FUN's WIMAX wireless network planning and optimisation functionality. The general features, like GIS (Geographic Information System), open architecture standards, RDBMS, and distributed computing capabilities are described in the FUN Overview brochure. Please see the FUN GSM, UMTS and Microwave brochures for more information on the product family.

FUN WIMAX has been designed as a comprehensive planning tool to satisfy operator requirements for network planning and optimisation. Its newly designed user interface is intuitive and provides easy access to a rich feature-set of planning functionality. FUN supports large operator networks for a multitude of wireless technologies in large regional office deployments as well as small work-group configurations. It is available as a stand-alone product, or as part of the FUN wireless network-planning suite of tools.

Principle Features include:

The WIMAX module utilizes all the foundation functionality as described in the FUN GSM brochure. This includes:

- Intuitive user interface
- Comprehensive multi-technology data model
- Wide range of Macro / Micro / Pico cell propagation models including ray tracing model
- Powerful interference algorithms



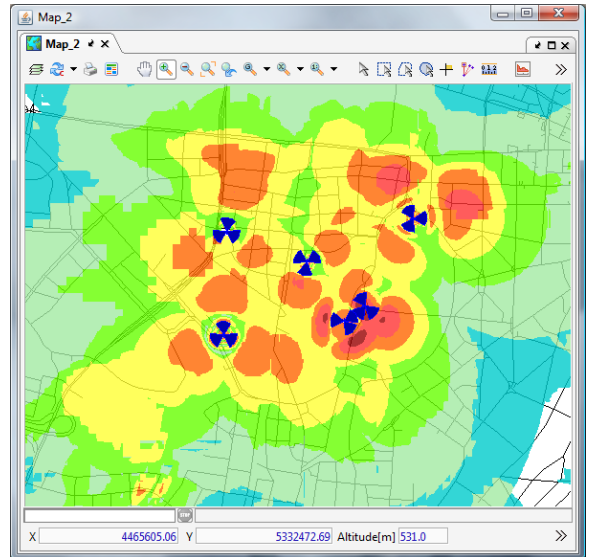
## Parameter Planning

FUN WIMAX provides functions and algorithms for planning LOS and NLOS scenarios in fixed and mobile WIMAX networks providing full functionality to enable all aspects of: Initial planning (e.g., marketing and preliminary stage planning), network planning, network deployment, and optimisation to be supported.

## Geographical Displays

FUN WIMAX provides lots of geographical displays to analyse the network: Rx Level, Best Server, Interference, C/I, Downlink/Uplink Traffic and Utilization, etc.

Additional displays can be provided upon request. Displays depend on service, radio link type and user equipments.



## Interference Calculation

FUN can provide runtime interference calculations on-the-fly specifically for the area and resolution displayed in the geographic window. This fast approach enables users to quickly evaluate numerous different scenarios before making a selection. Alternatively, complete calculations can be performed and stored at fixed resolution for arbitrary areas. Interferences can be calculated with respect to one cell, a group of cells, or between groups.

## Cell Assignment Probabilities

Whereas most cell size calculation algorithms are based only on a best-server field strength comparison, FUN incorporates probability based assignment calculations even with the option to take into account handover parameters. This feature enables the automatic generation of neighbour cell lists that are consistently more accurate than manually optimised lists.

## Traffic Calculations

The cell traffic can be calculated in both ways:

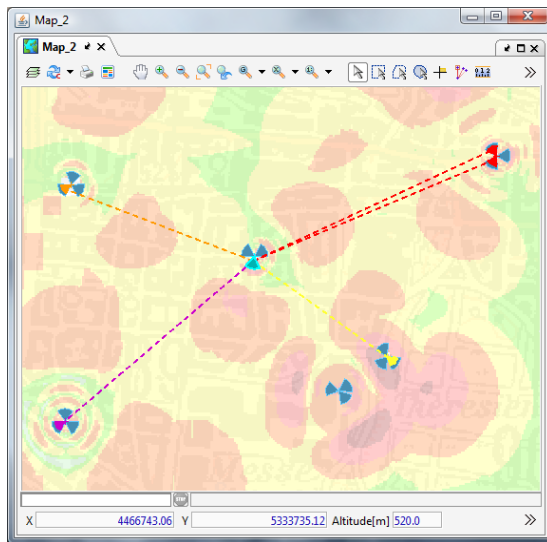
- Import cell traffic from real network and calculate distributed traffic maps based on clutter weights and cell areas.
- Use geographic traffic maps to calculate cell traffic forecast.

### Automated Frequency Planning

FUN offers a sophisticated Automatic Frequency Planning (AFP) algorithm developed to accommodate even the most complex networks. The algorithm supports:

- Automatic border coordination
- Channel restrictions due to equipment limitation
- Channel grouping
- Multi-band networks

Both manual and automatic optimisation is supported. The frequency algorithm has been developed for fast, easy, and efficient handling without compromising efficient spectrum use and interference level. Highly automated functions for Border Coordination are available. Full integration of third party modules or customer specific algorithms is also supported.



### Fixed Subscriber Support

Fixed subscribers and their different profiles (e.g. Indoor, Outdoor, Private, Business, etc.) can be stored in the Fun Database.

FUN WiMAX support Subscriber analysis like Best Server, Rx Input Level, C/I, available Modulation scheme, Path Budget, Path Profile

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