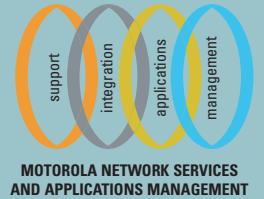


Intelligent Design for Growth Planning for GSM and UMTS Networks



The world is changing everyday as new buildings are built and old ones demolished.



After years of network growth and city reconstruction, unexpected coverage issues, inefficient system resource utilization and improper BTS traffic location planning are common side effects. As a result, operators today need effective optimization services that can address different business models for their network, in conjunction with their market growth and maturity. Motorola's Intelligent Design and Planning Service for GSM and UMTS Networks helps operators not only generate plans for system expansion, site selection and network resource redistribution based on subscriber measurement reports, but also provide the ability to intelligently optimize the network in the design phase.

Motorola's Intelligent Design and Planning Service provides an essential optimization performance prediction step for advance technology service roll-out. By analyzing each measurement report, optimal and poor data service locations can be identified.

Motorola's Intelligent Design and Planning Service is a critical UMTS design and optimization solution. It takes existing 2G network topologies into consideration to help RF engineers understand the positive aspects and limitations of existing

2G network designs. Ultimately, the knowledge gained from this network analysis can facilitate better 3G network designs.

Motorola's Intelligent Design and Planning Service can work in conjunction with other Motorola performance, optimization, and design services to drive excellence in quality of service for the network. It is enabled by a combination of tools and our experienced engineering staff. These enabling tools include Intelligent Optimization System (IOS), which is used to collect billions of Measurement Reports (MRs). Data Engine is used to predict MR locations and Cellular Office analyzes potential network impact issues. The NetPlan® tool can be used to model new radio plans.

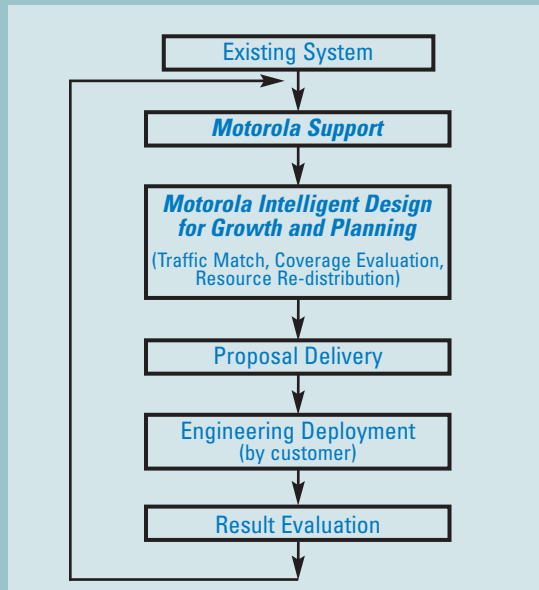


Figure 1

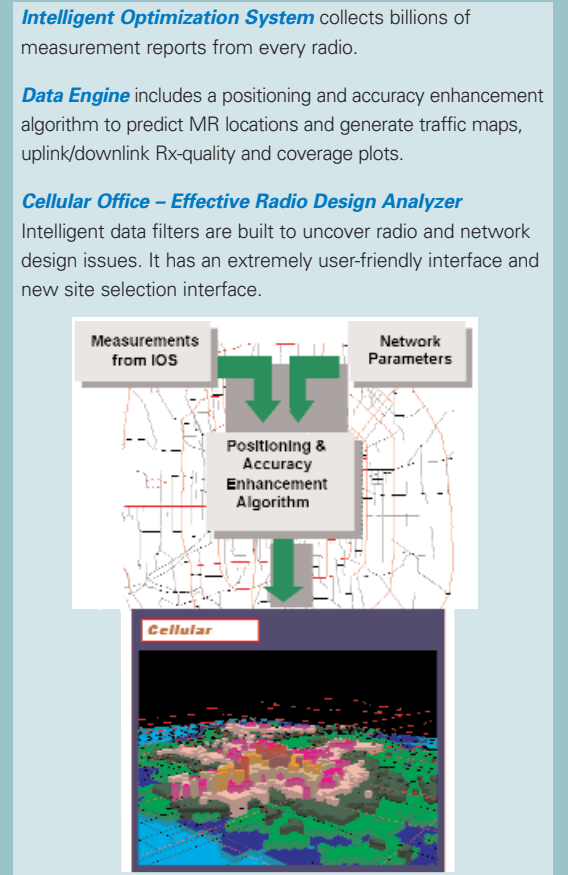


Figure 2

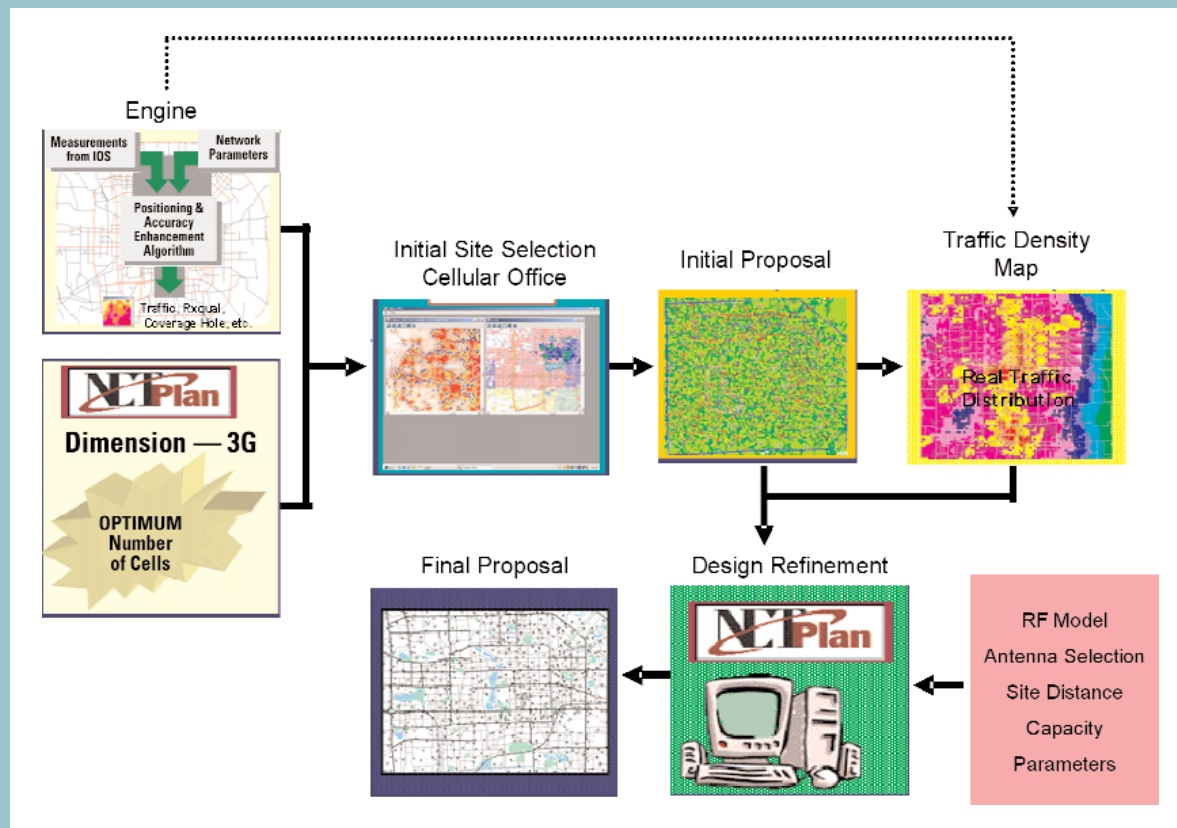


Figure 3: Customer Engagement Model

Motorola has been researching and using 2G measurement reports to enhance 3G designs by employing real traffic density distribution to lower unpredictable cell breathing risk in initial commercial rollout. In addition, Intelligent Design for Growth Planning Services can help RF Engineers evaluate existing 2G network designs before performing initial 3G site selection, rather than starting from the beginning with a traditional RF modeling exercise.

Customer Engagement Model

Motorola's Intelligent Design for Growth Planning is a multi-vendor solution for GSM and UMTS network operators that can help ensure an effective system expansion and network migration for both the radio and network arenas.

The services that are included in Motorola's Intelligent Design for Growth and Planning include:

Quality of Service

- Indoor and Outdoor Poor Signal Coverage
- Site Decommission Coverage Impact
- Antenna Blockage
- Multi-signal Impact
- Unique Cell Study
- Uplink Quality Impact

Traffic Match

- Growth Planning
- BSC/LAC Partition
- Network Resource Utilization Adjustment
- Link and Processor Loading Rebalance

Traffic Distribution Change

- Bi-annual Traffic Delta Study



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