



Session 5.9

Supporting Network Planning Tools III

Roland Götz LS telcom AG / Spectrocan









Network Processor



Network Processor

The Network Processor

- produces network-wide results out of the single-cell-based results
- allows to analyse the radio network
- allows to simulate changes of the network parameter
- allows to simulate changes of the network design
- allows to optimise the radio network
- allows to plan the future roll-out phases
- produces statistics on the selected results

Each Service needs an own service-specific Network Processor



Coverage of Single Sectors



Network Processor















Maximum Field Strength



Network Processor

Maximum Field Strength:

For every pixel, this plot shows the signal level of the cell/transmitter producing the maximum single field strength.





Maximum Field Strength



test.mfs - 🗆 × 7 Q 13 [dBm] -36.0 -54.2 -72.4 -90.7 -108.9 -127.1 -145.3 -163.6 -181.8 -200.0 Basel **Base Station Base** ٨P 007E34 18.187 Lat.: 47N35 51.652 -87.9 dBm Long.:





Maximum Field Strength (Network)



Network Processor









Network Processor

Maximum Server:

The maximum server plot shows, for a certain pixel, the name of the transmitter featuring the maximum signal; its field strength must exceed the minimum field strength required for coverage, $E_{min equiv}$.





Maximum Server





Network Processor

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Maximum Server (Network)











Spectrocan

Network Processor Results



















Many other service-specific results can be processed by a powerful Network Processor, like:

- Number of Max Sever
- Number Best Server
- Strongest Interferer
- Level of Strongest Interferer
- Coverage Probability
- Coverage Reserve

- Power Difference
- Assignment Probability
- Handover Zone
- Requeired Channels
- Coding Sheme Area (GPRS)
- SFN Level Gain





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Spectrocan Network Processor – Advanced Analysis



Automissed Frequency / Channel Assignment

Interference Analysis



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Live Planning Tool Demonstration



"MULTIIink" Design Tool for Engineering Microwave Links and PMP / WLL / LMDS Planning

LS telcom Spectrocan Modern Radio Network Planning Tools **Radio Network Planning Tool** Data / Result Output Data / Result Output Network Processor Interference Analysis **Propagation Prediction G**raphical User Interface Data Management Geo Information System



Import and Export



Data / Result Output

Import and Export of

Databases and Tables (Sites, Antennas,...) Result Files Measurement Data

Should be possible in several formats (.txt, .xls, ASCII, .jpg, ...)





Example: Measurement Data



Data / Result Output

Import measurement data

- Analogue
- Digital
- BER

Evaluation of measurement data

- Rohde&Schwarz,
- Alcatel, Ericsson TEMS, generic ASCII

Plotting of measurement data

Calibration

- Path loss fit
- Calibration of extended OH model









Printing of Maps and Result Plots



Result Output

	Data / Result C
	Print Process Preview
	Application specific frame
	Legend
	Print in specific map scale
	Specify margins and borders
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Printing of Database Lists



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Example



Network Optimization





Current network coverage

Legend indoor urban indoor suburban outdoor urban outdoor rural



Now, we want to improve the coverage in this region.

Network Processor





00°





00°





00°



Selection of Candidate Steffisburg C





Supporting Network Planning Tools





Solutions for Spectrum Management, GSM900, GSM1800, Microwave Links, PMP, LMDS, Radio/TV Broadcast, DVB, DAB, Trunked Radio, TETRA, Paging, Satellite Services





Thank you for your attention

For more information:



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