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RF Pathloss Database Application



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AVIAT NETWORKS

- ❖ Multinational US based company
- ❖ Offer microwave network solutions globally
- ❖ Provision and installation of backhaul equipment
- ❖ Provision of IP Network solutions
- ❖ Often in remote areas such as Rainforest and desert



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Image courtesy of Mer Telecoms



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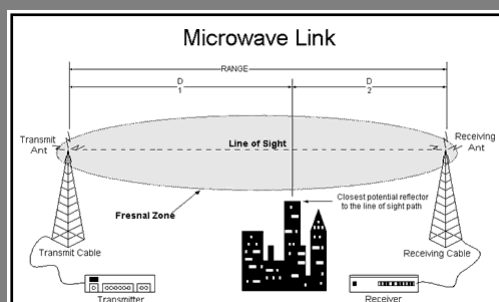


Image courtesy of Global Microwave Systems



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PATHLOSS FILES

- ❖ Path Loss – attenuation of a point to point signal
- ❖ Aviat provide Pathloss Files and engineering datasheets to customers
- ❖ These can then be used by customers when designing new network branches
- ❖ And also used with existing networks IE for adaptive modulation during changeable weather



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THE PROJECT

- ❖ To move from a manual based system to a comprehensive web based application
- ❖ A database to hold the engineering data
- ❖ A web based interface
- ❖ An application with the following capabilities:



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THE APPLICATION

- ❖ Create Pathloss and XML files from engineering data and store on a server for download
- ❖ Allow users to do parameter based searches for suitable radio units
- ❖ Allow users to download the selected Pathloss files that match those searches
- ❖ Allow users display all transmission curves for each radio unit



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	Frequency MHz	Response dB
1	-20.0	-80.7
2	-19.9	-80.3
3	-19.9	-80.8
4	-19.8	-80.0
5	-19.7	-81.3
6	-19.7	-80.2
7	-19.6	-80.7
8	-19.5	-79.7
9	-19.5	-80.8
10	-19.4	-79.7
11	-19.3	-80.3
12	-19.3	-80.8
13	-19.2	-80.3
14	-19.1	-80.3
15	-19.1	-81.0
16	-19.0	-79.2
17	-18.9	-80.5
18	-18.9	-80.2
19	-18.8	-74.0
20	-18.7	-80.8

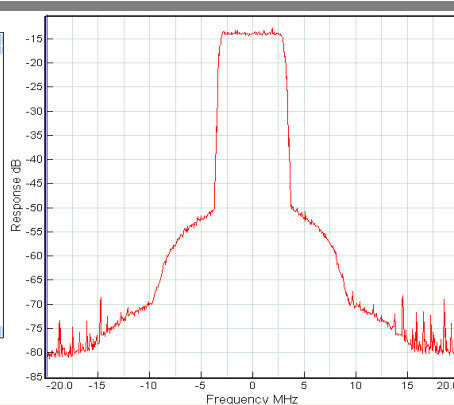


Image courtesy of AntRad

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PARAMETER SEARCHING

- ❖ Engineering datasheet has over 400 data fields
- ❖ As well as up to 29 transmission curve datasets for each radio unit
- ❖ Searches only based on some parameters
- ❖ Parameters could be 1 or many from all 400 data fields

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THE MAIN CHALLENGE

- ❖ Finding the most efficient way of presenting the parameter options
- ❖ Using only the parameters that are required when :
 - ❖ Inputting new radio unit data
 - ❖ Querying the database
 - ❖ Selecting multiple files for download
 - ❖ Displaying relevant transmission curves



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TECHNOLOGIES USED

- ❖ Java Servlets and JSP
- ❖ Apache Tomcat server
- ❖ HTML5
- ❖ MySQL
- ❖ Javascript with JQuery.js and Chart.js



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THANK YOU