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UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION

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COURSE ON BASIC TELECOMMUNICATIONS SCIENCE

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RS3 Simulation Model

CCIR, Geneva, Switzerland

RS3 SIMULATION MODEL

Note: This software has not been tested completely. It is a prototype version released for tests and comments by the members of CCIR IWP 1/4.

Description

The RS3 software simulates operation of a radio communication system in an interference environment. The system consists of one transmitting station and one or more receiving stations which can be placed in a three-dimensional space at regular intervals. The simulation model includes simplified empirical models for directive antenna radiation patterns and for propagation predictions.

The environment involves one or more man-made interference sources arbitrarily located in a three-dimensional space, within specified boundaries. The sources are isotropic and working at the same frequency and at the same time as the system. Their radiation intensity is random, within specified limits.

The system performance measure is the coverage loss caused by interference. The coverage loss is the number of locations at which the receiver operation is satisfactory with the interference-free environment and unsatisfactory with the actual environment, divided by the total number of locations at which the receiver operation is satisfactory with the interference-free environment.

Mode of operation

Interactive, with an IBM PC AT/EGA and MS-DOS operating system.

Input requirements

The simulation scope, test area, antennas, minimal signal level propagation models, interference sources, and other parameters controlling the simulation process are to be defined by the user. There are about 40 such parameters.

Data output

The coverage loss caused by interference is computed. In addition, depending on the user choice, additional data are provided, such as maps and histograms of statistical distributions of relevant variables.

Output media

Terminal display. Diskette file.

Point of contact

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