

**EVEREST****EVEREST IST-2002-001858****D07*****Simulation tools: inherited features and newly implemented capabilities*****Contractual Date of Delivery to the CEC: 31.05.2004****Actual Date of Delivery to the CEC: 4.06.2004****Editor: Avelina Vega (TID)****Author(s): see list****Participant(s): UPC, KCL, PTIN, TID, TEL****Workpackage: WP3****Est. person months: 14****Security: PU****Nature: Report****Version: 001****Total number of pages: 95****Abstract:**

This deliverable provides different sets of two simulators: link and system, used for RRM algorithms specification and validation. The link simulators support high resolution (at chip/bit rate level), and cover the air interface behaviour, according to physical layer constraints imposed by the different technologies addressed and the standards. The outputs to be obtained from these tools concern mainly the BER (Bit Error Rate), BLER (Block Error Rate) versus the global interference generated on the air, which characterise the different air interfaces. The System Simulators, suited for the assessment of different RRM and traffic control mechanisms, provide an estimation of the QoS parameters for all the services involved, and a flexible environment in which different scenarios and algorithms can be accurately evaluated in short simulation times. Simulators have been developed on step by step basis, producing first a simulator skeleton and then adding new features and algorithms.

A report describing the capabilities of the architecture and functionality of the implemented simulators as well as a set of synthetic user guides for practical use of these simulators (link and system) are also provided in this report.

Keyword list: Simulation tools, Link level simulation, System level simulation, UMTS, GERAN

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EXECUTIVE SUMMARY

The scope of this document is to describe the architecture and main capabilities of both the link level and the system level simulators that will be used in the EVEREST framework. Starting from several legacy simulators available from the EVEREST partners, a set of new features have been implemented in some of these simulators, to be able to evaluate using the set of simulators described in this document both: innovative individual RRM strategies for GERAN, UTRAN, WLAN as well as CRRM strategies for beyond 3G heterogeneous networks.

The report is organised as follows. After a short introduction, the document addresses the features of the link level simulators in section 2 whereas Section 3 is devoted to system level simulators. Inside these sections, all simulators are presented in a similar way: first of all a general description, later on the architecture, inherited features, and newly implemented features, are presented. Finally outputs and guidelines of their use are described. Finally, a conclusion section closes the report.

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