

The WINNER Beyond 3G Radio Interface Concept

Mikael Sternad
Uppsala University
E-mail: ms@signal.uu.se

Abstract

The IST-WINNER (Wireless World Initiative New Radio) integrated project is a consortium of 38 partners coordinated by Siemens working towards enhancing the performance of mobile communication systems. The improvements of radio transmission to be explored by WINNER are crucial for enabling new mobile services and applications anytime and anywhere.

The aim is to design a radio interface architecture that is efficient yet flexible, and can be used in wide area coverage, metropolitan area systems, hotspots as well as indoor systems. The target peak aggregate bitrates are 100 Mbps for new mobile access and up to 1 Gbps for new nomadic /local area wireless access. One of several important challenges is to simultaneously attain high spectral efficiency and easy deployment.

Key system elements that are combined in different ways in various deployment scenarios are

- link and system adaptation on different time-scales
- multi-antenna transmission as a basic design element, rather than an add-on
- relaying, to extend the transmission range and re-distribute the capacity over the cell area.

WINNER is as present 18 months into its first 2-year phase 2004-2005. The output of this first work is a system concept. The talk will give a snapshot of the current thinking within the project and the method we use working towards this goal. The output of a planned WINNER phase II is intended to be an optimized system proposal. WINNER is also providing significant input to the process of assigning new spectrum, with decisions planned in 2007.