

# How to Design Really Low-Power Cellular Systems

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## Abstract

Chipset design for cellular communications has a long tradition of creating low-power system solutions for handsets. As the energy cost for running the infrastructure network is increasing dramatically, new total system solutions are necessary. How can we design from gate to chip to network element to system solutions? A set of new approaches and challenges shall be addressed, paving the path for a complete new design methodology for future "cool silicon".

## Curriculum Vitae



Dr. Gerhard Fettweis studied Electrical Engineering at the University of Technology (RWTH) Aachen and earned his Ph.D. degree at the same university in 1990. From 1990 to 1991, he was Visiting Scientist at the IBM Almaden Research Center in San Jose, CA, developing signal processing innovations for IBM's disk drive products. From 1991 to 1994, he was a Scientist with TCSI Inc., Berkeley, CA, responsible for signal processor development projects for cellular phone chip-sets. Since 1994 he holds the Vodafone Chair at the Technical University of Dresden, Germany. During this time, next to producing scientific innovations, he has founded six start-ups: Systemonic (today NXP Semiconductors), Radioplan (today Actix), Signalion, InCircuit, Dresden Silicon (today Signalion), and Freedelity. Dr. Fettweis is an active member of the scientific community in general, also organizing conferences (e.g. TPC Chair of ICC 2009) and research projects. His research focuses on new wireless communications, systems for cellular and short range networks, and hardware/software implementation architectures.