ABSTRACT

In ten years the cellular telephone has evolved from a tool for the professional to an indispensable consumer product with a very high market penetration. At the same time, the handset cost, weight, and standby time have been reduced by more than a factor of ten. These factors have been critical for the success story of the mobile phone.

The technical aspects behind the rapid handset evolution are discussed. In particular, what advances in

- the radio architecture, for example the zero-IF GSM receiver,
- the baseband (CMOS) technology, and
- the radio system design areas

have meant for the reduction of size, weight, cost, and power consumption is discussed.

Future challenges, like

- SW-DSP-digital-RF partitioning,
- linear multi-mode modulation with high linearity requirements,
- digital leakage issues, and
- power consumption limitations in multimedia handsets are discussed with future generation handsets in mind.

Bio

Sven Mattisson received his Ph.D. in Applied Micro Electronics from Lund University in 1986. From 1987 through 1994 he was an associate professor in Applied Micro Electronics in Lund where his research was focused on circuit simulation and analog ASIC design. In 1995, he joined Ericsson in Lund to work on cellular hand-set development. Presently he is with Ericsson Mobile Platforms, in Lund, where he holds a position as senior expert in analog system design. Since 1996, he is also an adjunct professor at Lund University. Dr. Mattisson is one of the principal developers of the Bluetooth concept.