



The Mobile Broadband Standard



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GPRS & EDGE

General Packet Radio Service / Enhanced Data rates for Global Evolution

GSM™ is a circuit-switched network; ideal for the delivery of voice but with limitations for sending data. The standard for GSM was designed to evolve. In 2000 the introduction of General Packet Radio Service (GPRS) added packet-switched functionality and 'kick started' the delivery of the Internet on mobile handsets.

GPRS adds packet-switched functionality to GSM networks

Based on specifications in Release 97, GPRS typically reached speeds of 40Kbps in the downlink and 14Kbps in the uplink by aggregating GSM time slots into one bearer. Enhancements in Releases R'98 and R'99 meant that GPRS could theoretically reach downlink speeds of up to 171Kbps.

The next advance in GSM radio access technology was EDGE (Enhanced Data rates for Global Evolution) or Enhanced GPRS.

With a new modulation technique yielding a three-fold increase in bit rate (8PSK replacing GMSK) and new channel coding for spectral efficiency, EDGE was successfully introduced without disrupting the frequency re-use plans of existing GSM deployments.

EDGE... almost 3G

The increase in data speeds to 384Kbps placed EDGE as an early pre-taste of 3G, although it was labeled 2.75G by industry watchers.

Ongoing standards work in 3GPP has delivered EDGE Evolution, which is designed to complement high-speed packet access (HSPA) coverage.

EDGE Evolution has:

- Improved spectral efficiency with reduced latencies down to 100ms
- Increased throughput speeds to 1.3Mbps in the downlink and 653Kbps in the uplink

GPRS (Release 97) and EDGE (Release 98) are largely specified in the [GSM EDGE Radio Access Network \(GERAN\)](#) group of 3GPP;

Reading should start with the [44 series](#) and [45 series](#) of the 3GPP specifications;

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Dino Flore (RAN) and EriK Guttman (SA)



Georg Mayer (CT)

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FULL MEETING CALENDAR

GERAN	69	Malta	15-19 Feb 2016
CT	71	Gothenburg	07-08 Mar 2016
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RAN	72	Busan	13-16 Jun 2016
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ABOUT RELEASES

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BROWSE TECHNOLOGIES

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