



TITLE:

3G/UMTS – An evolutionary path to Next Generation Networks

ABSTRACT

In the context of mobile communications, the term “Next Generation Networks” may be considered to embody two characteristic features.

The first such characteristic is the convergence between mobile networks and other modes of communication – namely fixed-line services, the Internet and IT-centric networks such as WLAN. For many mobile operators, this convergence represents a natural evolution of their current voice-centric business models that are set to change dramatically with the range of multimedia applications enabled by 3G/UMTS services that are now rolling out commercially with some 15 networks already launched.

By offering complementary access – such as WiFi ‘hotspots’ in business locations or busy urban centres – operators can strengthen the existing relationship with their customers, encouraging them to spend more time using their networks while consuming a broader range of content-based and other value-added services.

As a Market Representation Partner within the Third Generation Partnership Project, the UMTS Forum provides market-focused inputs to the evolving standardisation process for UMTS, reflecting the interests of its cross-industry membership that includes operators and manufacturers as well as the developers of 3G/UMTS services and applications.

Ongoing work by The Third Generation Partnership Project (3GPP) ensures that the current specifications laid down for WCDMA/UMTS networks can evolve in an incremental fashion, giving mobile operators a stable, cost-effective platform to provide their customers with universal access to a wide range of business and consumer-centric services via their personal mobile terminal.

Complementing this convergence between the worlds of fixed communications, mobile and the Internet, the second characteristic feature of Next Generation Networks is the evolution towards fully IP based communications.

An example of this work is the standardisation of a totally packet-based IP Multimedia Subsystem (IMS) that treats all communication between terminals and network servers as IP connections. In this 'all-IP' world, operators can significantly reduce the quality of service and cost per bit of carrying voice and other services via a totally packet-based architecture. The increased flexibility and transparency of service provision enabled by IMS will be a key factor in driving evolution towards Next Generation Networks.

Other enhancements standardised within 3GPP include HSDPA (High Speed Downlink Packet Access) that offers significant improvements in the speed and capacity of the WCDMA air interface – enabling 'industrial-strength' enterprise applications where true mobile broadband at speeds to 10 Mbps and beyond is needed to realise the full vision of Next Generation Networks.

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