



Ruwan Wigamage
ruwanvigamage@gmail.com
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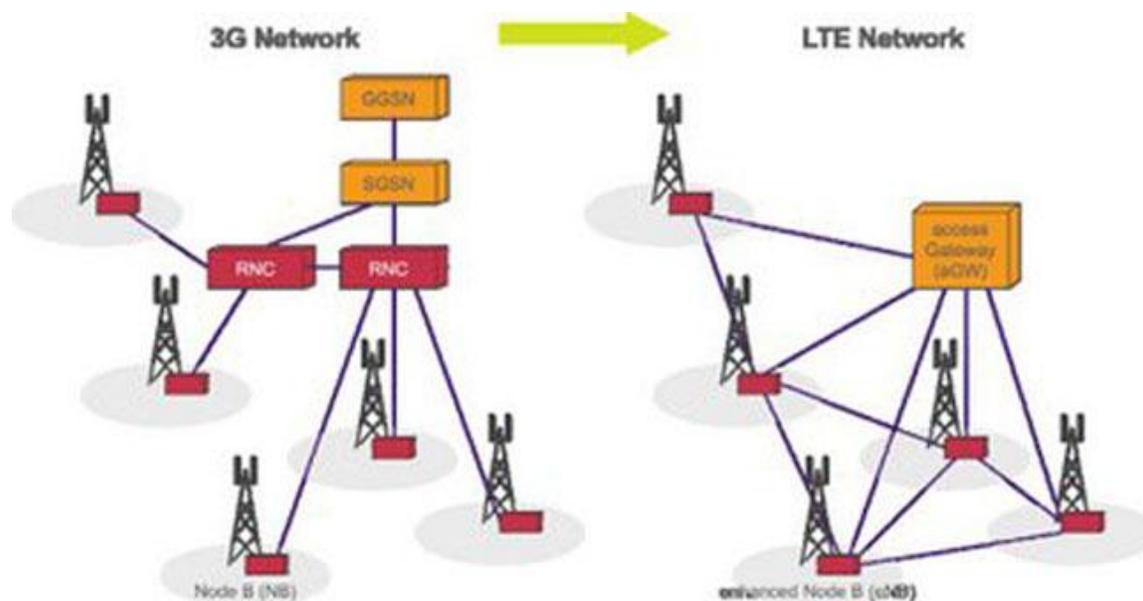
4G Technology

This article is about the mobile telecommunications standard.

In [telecommunications](#), **4G** is the fourth generation of [cellular wireless](#) standards. It is a successor to the [3G](#) and [2G](#) families of standards. In 2009, the [ITU-R](#) organization specified the **IMT-Advanced** (International Mobile Telecommunications Advanced) requirements for 4G standards, setting peak speed requirements for 4G service at 100 [Mbit/s](#) for high mobility communication (such as from trains and cars) and 1 [Gbit/s](#) for low mobility communication (such as pedestrians and stationary users).

A 4G system is expected to provide a comprehensive and secure all-IP based [mobile broadband](#) solution to laptop computer [wireless modems](#), [smartphones](#), and other mobile devices. [Facilities](#) such as [ultra-broadband](#) Internet access, [IP telephony](#), gaming services, and streamed multimedia may be provided to users.

Pre-4G technologies such as [mobile WiMAX](#) and first-release [Long term evolution](#) (LTE) have been on the market since 2006 and 2009 respectively, and though often branded as 4G in marketing materials, the current versions of these technologies provide downstream [peak bitrates](#) of 144 Mbit/s and 100 Mbit/s respectively. The [ITU](#) announced in December 2010 that WiMax, LTE, and HSPA+ are 4G technologies.



[IMT-Advanced](#) compliant versions of the above two standards are under development and called "[LTE Advanced](#)" and "[WirelessMAN-Advanced](#)" respectively. ITU has decided that "LTE Advanced" and "WirelessMAN-Advanced" should be accorded the official designation of IMT-Advanced. On December 6, 2010, ITU announced that current versions of LTE, WiMax and other evolved 3G technologies that do not fulfill "IMT-Advanced" requirements could be considered "4G", provided they represent forerunners to IMT-Advanced and "a substantial level of improvement in performance and capabilities with respect to the initial third generation systems now deployed."

As seen below, in all suggestions for 4G, the [CDMA spread spectrum](#) radio technology used in 3G systems and [IS-95](#) is abandoned and replaced by [OFDMA](#) and other [frequency-domain equalization](#) schemes. This is combined with [MIMO](#) (Multiple In Multiple Out), e.g., multiple antennas, [dynamic channel allocation](#) and [channel-dependent scheduling](#).

From Wikipedia, the free encyclopedia

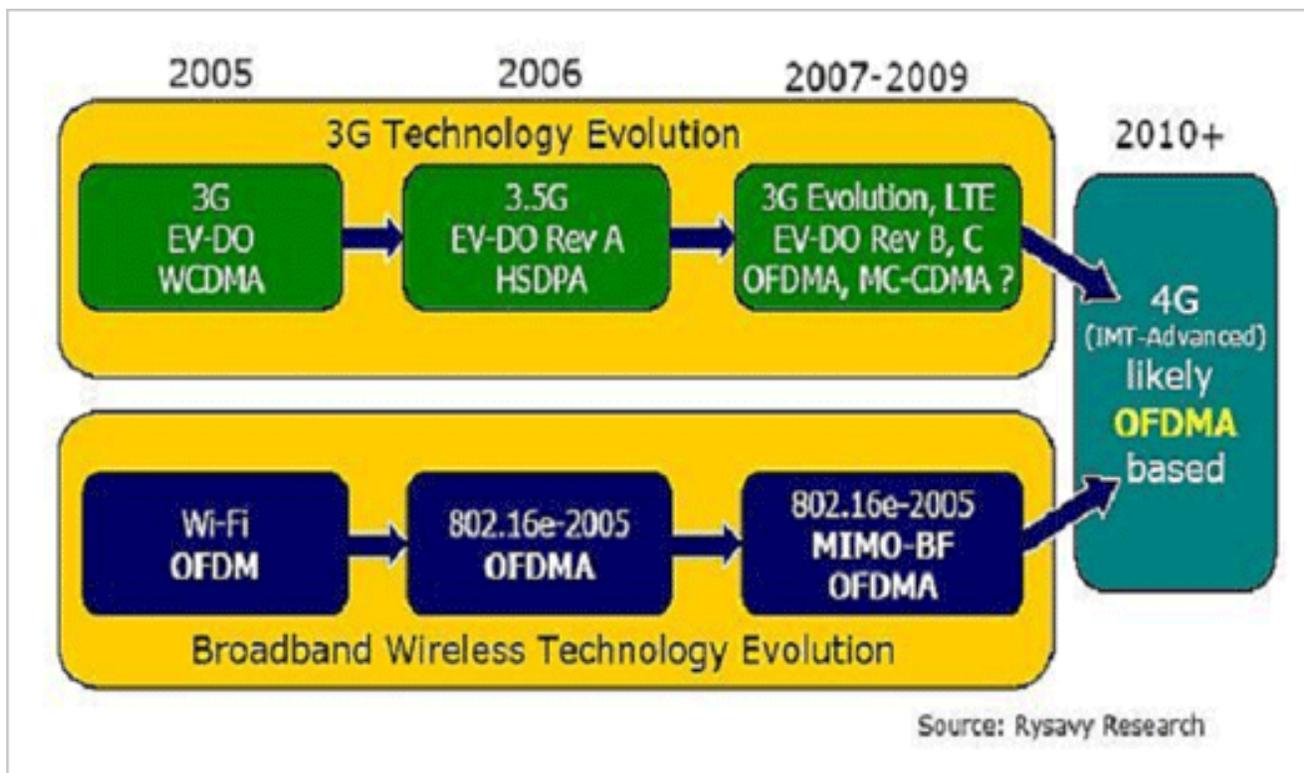
Objectives of 4G:

This wonder technology is expected to cover the data rate deficiency in previous generations. It is also aimed to achieve quality of services. This technology would provide many multimedia services. These multimedia services would not only include voice chat and video calls but also includes MMS, HDTV, video chat, and voice over the internet. This network would allow interactive roaming with existing LAN and digital broadcasting systems. This network's goal is to provide 100Mbps data rate for moving customers and 1GB for stationary users.

So that the users can enjoy uninterrupted connectivity with high speed anywhere they go. Very smooth handover over heterogeneous networks. Flawless connectivity and international roaming across innumerable networks of the world is its next target. It should also provide Very high quality multimedia support in order to get approval from ITU. The interoperability with existing network infrastructure is another prominent feature of this technology.

It is an all IP switched network and several working groups propose that it should offer an open internet protocol. The early 4G technology comprise of flash OFDM, 802.16e,

wireless or mobile WiMax and HC SDMA. The demand of the wireless network users combined with the efforts of the 4G working groups would give technology and edge over its previous counterparts. This technology would revolutionize the world of cellular networks with amazing wireless broadband speed. This technology would also provide job opportunities for many. The further development for supporting 4G network is dependent upon the approval from ITU.



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