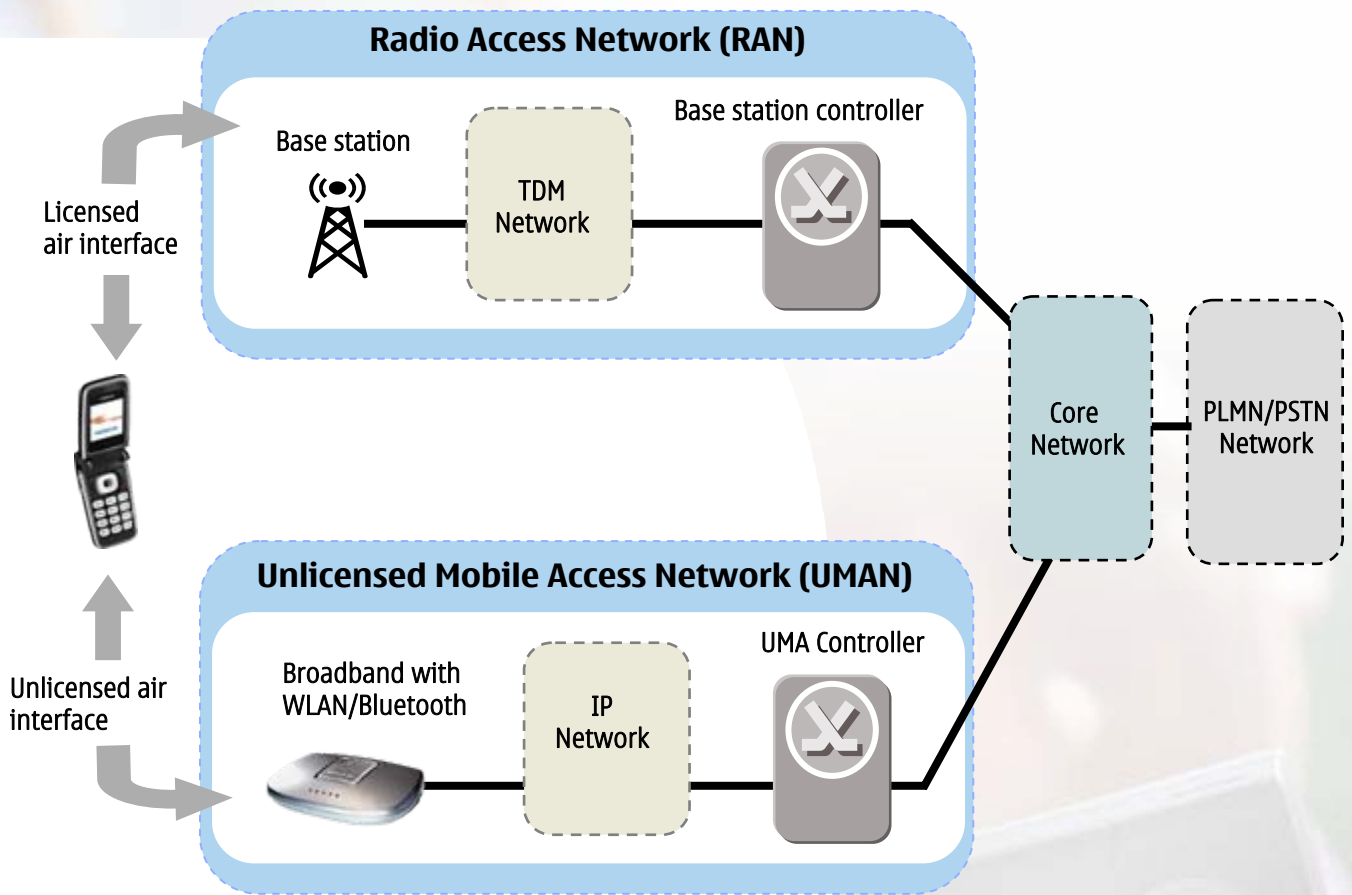


Unlicensed Mobile Access (UMA)

Unlicensed Mobile Access is a new technology that complements an operators' network coverage with unlicensed wireless technologies, such as WLAN or Bluetooth. UMA opens a new range of opportunities for both consumers and operators. It allows consumers to enjoy the benefits of better indoor coverage using WLAN radio access. UMA serves to give operators the ability to fully leverage their cellular assets via alternative radio access methods. UMA is a cost-effective way to expand cellular coverage for voice and data services to homes and enterprises where it might be too difficult or expensive to build cellular coverage indoors.

For example, a consumer who previously had no network coverage at home can now set up a WLAN network and use it for making calls with a UMA enabled phone, such as the Nokia 6136 or Nokia N80. Once the user ventures outside the range of the WLAN, the handset automatically switches to the cellular network, and the voice call or data session continues without interruption. The same scenario applies in reverse – a consumer using a UMA-enabled phone would seamlessly switch from the cellular network upon entering an appropriate WLAN hotspot. Whether connected to the cellular network or in a WLAN hotspot, consumers can communicate using their Nokia handset and regular mobile phone number. Independent of the WLAN hotspot in use, the billing for UMA calls is always linked to a consumers SIM card.

In more technical terms, UMA technology creates a secure tunnel from a multiradio terminal, such as the Nokia 6136, to an operator's UMA Network Controller (UNC). This UNC is the link between the UMA call and the cellular core network. With a highly flexible UNC implementation, Nokia provides operators the possibility to deploy a UMA network in a very cost efficient way. WLAN and Bluetooth Wireless Technology can both be used for UMA, which is one way of using the Internet Protocol for voice services (Voice over IP, or VoIP).



Short VoIP vocabulary

VoIP (Voice over Internet Protocol/IP) refers to a class of technologies that enable the routing of voice calls over the Internet or any other IP network. VoIP is not a service, but a technology enabler used to implement services.

Internet call refers to a call deploying VoIP technology.

VoIP solutions refer to various VoIP technology implementations (VoIP flavors) in the market, such as enterprise VoIP, UMA VoIP, IP Multimedia Subsystem, Skype, etc.

UMA (Unlicensed Mobile Access) is a technology providing access to GSM and GPRS services over unlicensed spectrum technologies, such as Bluetooth and WLAN.

UMA call is a call deploying UMA technology.

UMA phone is a phone that supports UMA technology.

UMA controller is a network device for connecting the UMA call to the cellular core network.