

# LTE Architecture

LTE stands for Long-Term Evolution. It is also commonly marketed as 4G LTE.

It is a standard for wireless communication of high-speed data for mobile phones and data terminals, based on the GSM/EDGE and UMTS/HSPA network technologies.

The standard is developed by the 3GPP (3rd Generation Partnership Project).

LTE networks are cellular networks with thousands of cells using the same frequencies.

That networks is divided in two parts : a radio part (*eUTRAN*) and a network core named « EPC » (*Evolved Packet Core*).

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## I. The radio part : *eUTRAN*

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That part is simplified compared to 2G radio part (GERAN) or 3G radio part (UTRAN), thanks to the integration of monitoring functions in the eNode B base stations. These functions used to take place in the RNC (*Radio Network Controller*) for 3G UMTS networks.

The radio part of the LTE network is composed of:

- eNode B base stations
- local or distant antennas
- optic fiber links to the distant antennas (CPRI links)
- IP links between the eNode B and the network core

## II. The network core : *EPC*

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« EPC » (*Evolved Packet Core*) uses « full IP » technologies (based on the Internet Protocols to transport voice and data)

EPC allows the interconnection with the eNode B, other operators' mobile networks, phone networks and Internet through routers.

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Using IP for the whole transportation in EPC allows time savings for Internet access and LTE phone calls.

