

- Blockchain City
- AI City

Dubai is the only country in the world which have the ministry dedicated to Artificial Intelligence.

Chapter 3

5G Basics

One the major component of 4th Industrial Revolution (4IR) is 5G, everything is connected through this as higher speed connectivity is required.

What is 5G?

5G is the 5th generation mobile network. It is a new global wireless standard after 1G, 2G, 3G, and 4G networks. 5G enables a new kind of network that is designed to connect virtually everyone and everything together including machines, objects, and devices.



5G wireless technology is meant to deliver higher multi-Gbps peak data speeds, ultra low latency, more reliability, massive network capacity, increased availability, and a more uniform user experience to more users. Higher performance and improved efficiency empower new user experiences and connects new industries.

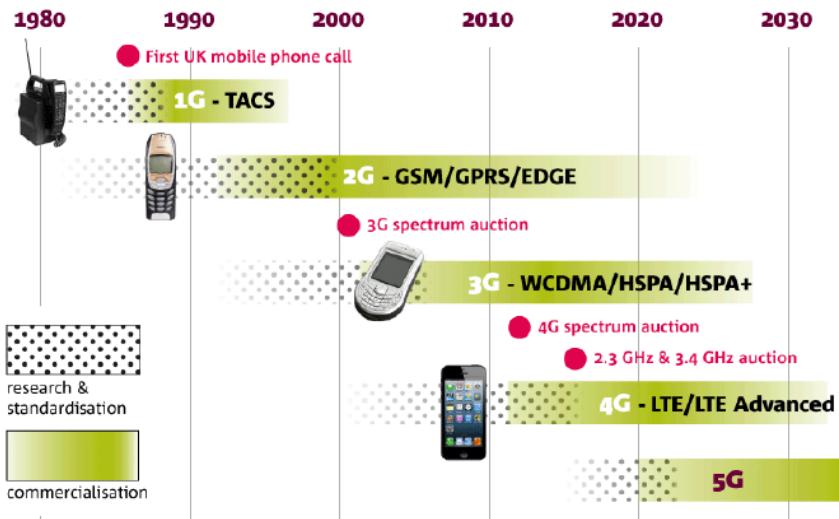
Difference with previous generations

- **First generation - 1G**
1980s: 1G delivered analog voice.
- **Second generation - 2G**
Early 1990s: 2G introduced digital voice (e.g. CDMA-Code Division Multiple Access).
- **Third generation - 3G**
Early 2000s: 3G brought mobile data (e.g. CDMA2000).
- **Fourth generation - 4G LTE**
2010s: 4G LTE ushered in the era of mobile broadband.

1G, 2G, 3G, and 4G all led to 5G, which is designed to provide more connectivity than was ever available before. 5G is a unified, more capable air interface. It has been designed with an extended capacity to enable next-generation user experiences, empower new deployment models and deliver new services.

With high speeds, superior reliability and negligible latency, 5G will expand the mobile ecosystem into new realms. 5G will impact every industry, making safer transportation, remote healthcare, precision agriculture,

Evolution of mobile phone communications



digitized logistics and many more, this coming and this is a reality. Incoming era of network automation is must, without automation networks will unable to provide the fast & reliable connectivity, to achieve this telecom services provider solutions need to be open sourced.

5G Speed

Few you need to understand are the followings:

- 5G will meet the new demands being placed on networks with up to 20x faster data speeds, by some predictions, and nearly 50x latency
- New prediction to made it over 100x4G

- It is improvements in latency that hold much of the promise for Internet of Things (IoT) and Artificial Intelligence (AI) apps.

Why 5G is required?

5G is used across three main types of connected services, including enhanced mobile broadband, mission-critical communications, and the massive IoT. A defining capability of 5G is that it is designed for forward compatibility—the ability to flexibly support future services that are unknown today.

Pillars of 5G Technology

Enhanced mobile broadband

