



FASTER INTERNET
EVERYWHERE



SMARTER
CITIES

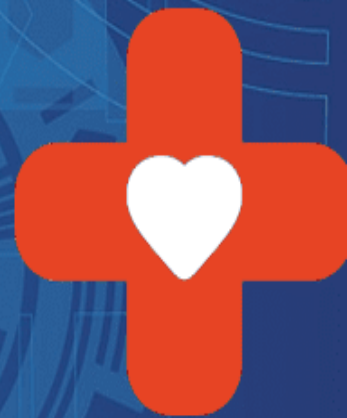


5G

CHANGES EVERYTHING



VIRTUAL REALITY
AUGMENTED REAL



BETTER
HEALTHCARE

- A Comprehensive Tutorial on How to Practically Build and Deploy 5G Networks Using Open-Source Software and General-Purpose, Off-the-Shelf Hardware

Instructor: Sadiq Iqbal



Agenda

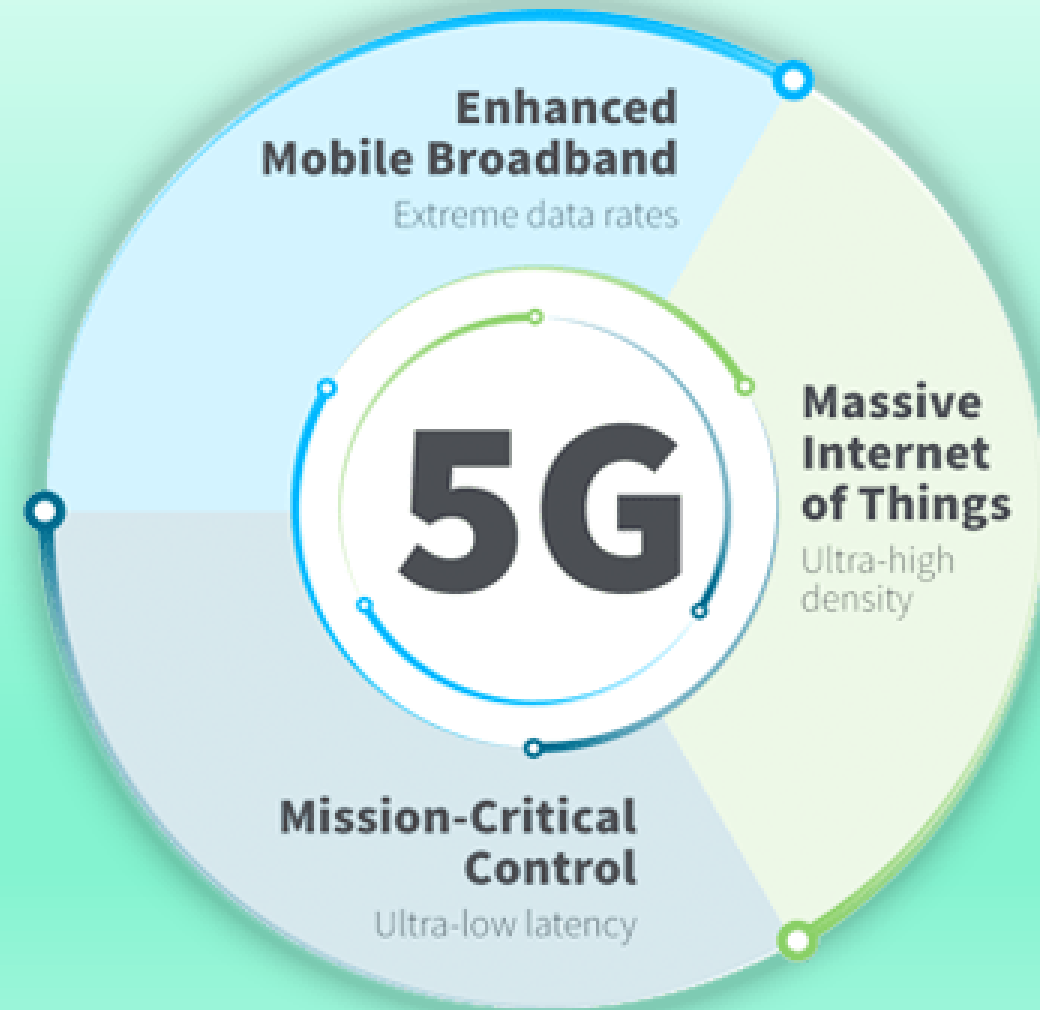
Learning the history of 5G realization.



Introduction

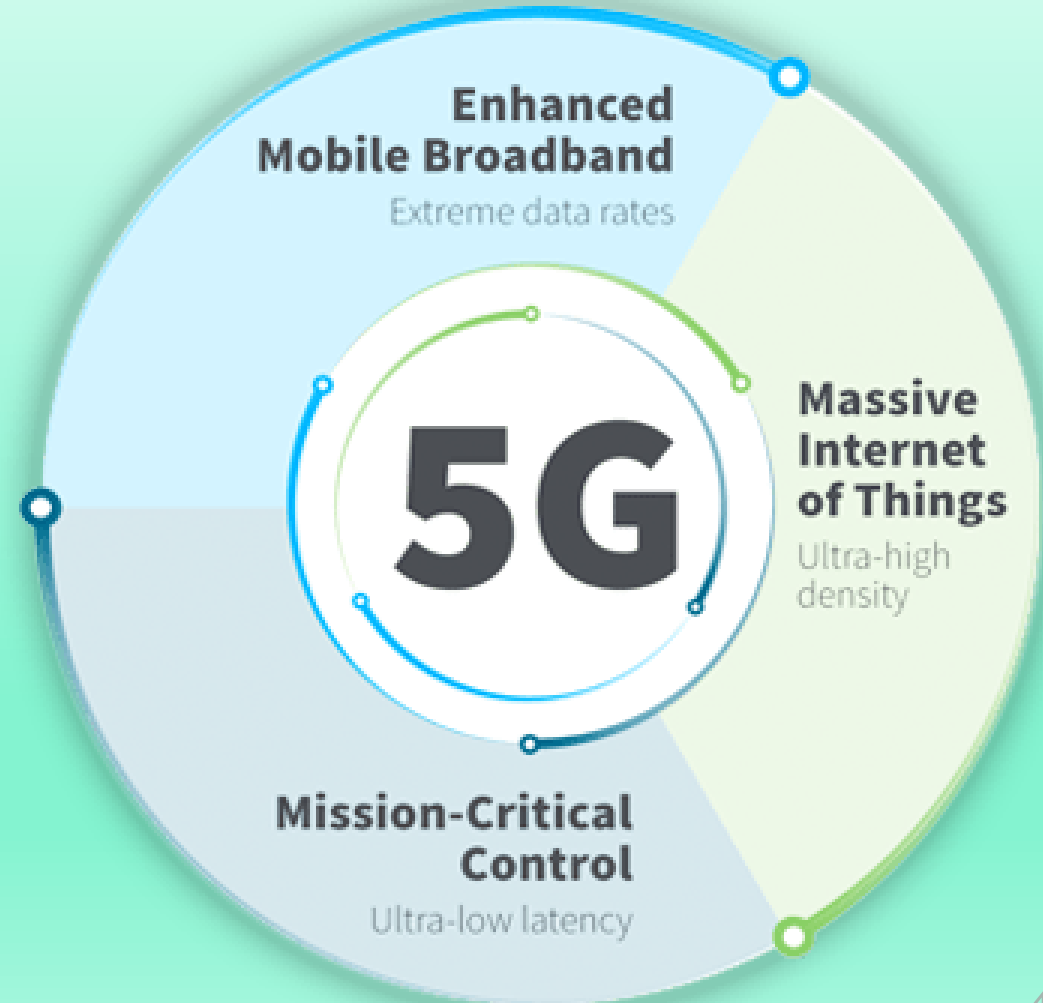
- From the beginning of 2010, the International Telecommunication Union (ITU) began researching 5G mobile communication technology.
- After several years of research, three service scenarios of 5G are available:
 - eMBB (enhanced mobile broadband), which provides data rates up to 20Gbps, much faster than traditional mobile technologies.
 - uRLLC (ultra-reliable low latency communication), which aims to minimize the latency to 1ms or lower.
 - mMTC (massive machine type communication), which supports up to 1 million connections per 1 GHz.

5G



Introduction

- Previous generations of mobile networks 1G, 2G, 3G, and 4G all led to 5G, which is offering to provide more connectivity than what is available right now.
- 5G is designed to deliver peak data rates up to 20 Gbps based on IMT-2020 requirements.
 - But 5G is about more than just how fast it is.
 - 5G is designed to provide much more network capacity by expanding into new spectrum bands, such as mmWave.
 - 5G can also deliver much lower latency for a more immediate response and provide an overall more uniform user experience so that the data rates stay consistently high even when users are moving around.



Introduction

- This clearly shows the importance of 5G due to the significant change it will bring globally.
- Thus, this leads us to think, how we can utilize the available resources to build 5G base stations and networks in an efficient and affordable manner.

