

## PLAGIARISM SCAN REPORT

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**\*\*Generation Gaps\*\*** Before figuring out what 5G is and what it can do, let's brush up with some basic terms. You might know what a 4G or 3G supported mobile phone is and you might own one as well. But, have you ever wondered what exactly is this number followed by the letter 'G'? Between the conversations around the lines "My mobile is better because it supports 4G and yours doesn't" this single-digit gap is what we can probably call a generation gap. The designation of a number followed by a 'G' represents generations of evolution of the wireless networks. It can be considered similar to what we have as 1st generation heir, 2nd generation heir and so on. **\*\*G starts with 0, not 1 !\*\*** Now that we know that these generations differ, let us dive in a little deeper. A lot of people do not know that wireless generation starts with a 0G and not 1G. Strange, right? The reason is actually quite simple. During the onset, 0G was a pre-cell phone mobile telephony tech, say radios and does not exactly relate to cell phones in today's terminology, this pretty little fact is lesser-known. Progress in technology and endless curiosity later gave birth to a better version of 0G, known as 1G. This generation included only voice calling signals, worked on analog cell phones and supported NMT (Nordic Mobile Telephone) and AMPS (Advanced Mobile Phone System). With this generation, we were able to do basic voice overcall. But we needed more, hence we came up with 2G and 2.5G. They brought us the world of data signals and CDMA, EDGE, TDMA, GSM, and GPRS. Boom! Now you can use the internet. Satisfied? Not yet. 3G brought us a better internet usage version and video calling services with WCDMA, and UMTS. Later on, enhancements in protocols, IP based services, and VoLTE brought to what we have now, the 4G. **\*\*Into 5G\*\*** Think we are done yet? Of course not. This brings us back to the topic- 5G. To say that 5G is a mere extension of 4G would be an understatement. But, at the same time, it is not an entirely new technology that is just coming to the surface. In the case of wireless network generation standards, the baselines are defined by an industry organization called the 3GPP (3rd Generation Partnership Project). It was created to help define worldwide standards for 3G cellular networks 20 years ago. The 3GPP creates what is called Release Documents every few years that define some core capabilities of next-generation wireless networks. The latest release document is called Release 15 which came out in June 2019 with many important new enhancements, including the full definition of the 5G NR (New Radio) standard, which forms the foundation of 5G service. The next 3GPP document is underway and is expected to be formally released by June this year. Therefore, it is not exactly an extension to 4G but a catalyst in the economic growth where AI and IoT will play a huge part. The world today is moving towards digitisation faster than ever. Owing to easier accessibility to technology we're witnessing an escalation in consumer size everyday, which inevitably results in an incredible amount of data being generated. 5G would make connection, interaction, and aggregation of data between millions of devices possible.

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