



6G Wireless Technology

6G (sixth-generation wireless) is the successor to 5G cellular technology. 6G networks will be able to use higher frequencies than 5G networks and provide substantially higher capacity and much lower latency. One of the goals of the 6G internet is to support one microsecond latency communications. This is 1,000 times faster than one millisecond throughput.

The vision for 6G is built on the desire to create a seamless reality where the digital and physical worlds as we know them today have merged. This merged reality of the future will provide new ways of meeting and interacting with other people, new possibilities to work from anywhere and new ways to experience faraway places and cultures. By delivering ever-present intelligent communication, 6G will contribute to the creation of a more human-friendly, sustainable and efficient society.

Very high data rates than 5G mmwave band (FR2)

IRS enabled beam forming for LOS and NLOS communications

THz bands Development of new Radio

TNW and NTNW Integrating terrestrial wireless with satellite/airborne systems

Power efficiency: THz wireless Links improvement in power efficiency; security based on quantum mechanics;

AI-driven network optimisation

MEC Multi-access edge computing brings technology resources closer to the end user (reduces Latency)

Full Duplex Systems

Very broad frequency bands (e.g., 73GHz-150GHz and 0.1THz-3THz)





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5G	→	6G
Soft Air Interface		Intelligent Air interface
Add — on AI Optimization		Native AI
Add — on Power Saving		Built in Power saving
Communication Only		Communication & Sensing
Passive BF & BeamMagement		UE Centric BF with controlled channel
Reactive channel tracking		Active channel senesinp (Prediction &Controlling
Cellular and satellite		Terrestrial + Non Terrestrial
Multi carrier operation		Flexible Spectrum usage
Analogy/ RF unaware		Analogy/RF aware

