Nonetheless, 6G will completely support AI for automation. It will be engaged in resource allocation, network selection, and handover, all of which will improve performance, particularly in applications where delays are an issue. The key technologies of 6G are machine learning and artificial intelligence.

C.EXTENDED REALITY

A new word that encompasses Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR) is Extended Reality (XR). Virtual reality (VR) is a computer-simulated reality experience that uses a headset to produce sounds and visuals to create an artificial environment. AR makes use of the physical world and enhances it using a particular gadget, like a smartphone. The Global Positioning System (GPS), movies, and audios can all be utilised to create an engaging atmosphere. One well-known example of AR is Pokemon. With mixed reality (MR), the real and virtual worlds combine to create a complex experience. The entire combined real and virtual environment is called XR. Because of its robust connectivity, fast data rate, high resolution, and low latency, 6G will be highly helpful for this function.

D.WIRELESS- BRAIN COMPUTER INTERFACE

The use of wearable technology has grown recently, and some of these applications involve braincomputer interfaces (BCIs). Smart body implants, smart embedded devices, and smart wearable headsets are examples of BCI applications. Brain-computer interface (BCI) technologies provide brain-toexternal discrete device communication, with the devices handling the analysis and translation of brain signals. Affective computing technologies, which allow devices to change in operation based on the user's mood, will also be incorporated into BCI. Because BCI applications need greater spectrum resources, large bit rates, very low latency, and high dependability, their use has been restricted. More applications, such as the five sense information transfer—which transfers data produced by a person's five senses to enable interaction with the environment—will be supported by 6G, nevertheless.

E.HOLOGRAPHIC BEAFORMING

Beamforming is the process of focusing power in a limited angular range to create a focused, narrow beam with a high gain for transmitting and receiving utilising antenna arrays. It provides increased signal to interference and noise ratio (SINR), improved throughput, and the ability to track users. A sophisticated beamforming method that makes use of Software-Defined Antenna (SDA) is holographic beamforming. Holographic refers to the use of an optical hologram in conjunction with an antenna to achieve beam steering; the antenna functions as an optical hologram's holographic plate. Since C-SWaP (Cost, Size, Weight, and Power) is regarded as the primary obstacle in the design of any communication system, the use of SDAs in HBF will enable adaptable and effective sending and receiving in 6G.

F. BLOCKCHAIN TECHNOLOGY

Blockchain technology represents data as dispersed, cryptographically secured chunks that are connected to one another. As in Fig 2,Blockchain will be utilised to manage massive connectivity in 6G as well as to organise and manage enormous data. It will also be utilised in spectrum sharing, which enables users to share the same spectrum, resolving the issue of 6G's enormous spectrum requirements and ensuring safe, affordable, intelligent, and effective spectrum utilisation. Enhancing the quality of service (QoS) through deep reinforcement learning and blockchain integration with artificial intelligence