Technologies used in making up an IoT ecosystesm

Cellular Networks:

2G networks (the first digital networks, 1G and 0G were analog):

GSM (Global System for Mobile) [Dec 1991]-

i. It was first implemented in Finland in Dec 1991. By the mid-2010s, it became a global standard for mobile communications achieving over 90% market share in over 193 countries and territories.

ii. GSM is a standard developed by the **European Telecommunications Standards Institute (ETSI)** to describe the protocols for Second Generation (2G).

iii. GSM networks developed as a replacement for 1G. and 3G is the successor(उत्तराधिकारी) of GSM.

iv. GSM provides a Short Messaging Service (SMS) 160 characters and also provides Voice and Data services.

Parameter	GSM (Dec 1991)	CDMA (1989)
Full-Form	GSM stands for Global System for Mobile communication.	CDMA stands for Code Division Multiple Access.
Basic	It is SIM-specific.	It is handset-specific.
Availability	GSM is highly available and globally used. Over 90% of the entire world’s mobile networks use it.	CDMA is not very common, and it is available in comparatively fewer carriers and countries. These devices are exclusive to Canada, Japan, and the United States.

Technology Used	It uses the Time division multiple access (TDMA) and Frequency division multiple access (FDMA).	It uses the Code division multiple access (CDMA).
Voice and Data	GSM supports the transmission of both voice and data at once.	The CDMA technology does not support any such feature. It cannot transmit voice and data simultaneously.
Rate of Data Speed	It is slower. GSM offers 42 Mbps (Megbits per second) in 3G (HSPA).	It is faster. CDMA offers 3.6 Mbps (Megabits per second) in CDMA.
Maximum Downloading Speed	GSM offers a maximum speed of 384 Kbps (Kilobits per second).	CDMA offers a maximum speed of 2 Mbps (Megabits per second).
Roaming	GSM offers worldwide roaming.	CDMA offers limited roaming.
Data Transfer Technology	The GSM technology makes use of EDGE (Enhanced Data rates for GSM Evolution)	The CDMA technology uses the EVDO (Evolution-Data Optimized) ready data transfer technology. Thus, the data transfer here is also very fast.
Radiation	On average, the GSM phones emit approx 28 times more radiation than the CDMA ones.	The CDMA devices emit very low radiation.