A wide variety of different wireless data technologies exist, some in direct competition with one another, others designed for specific applications. Wireless technologies can be evaluated by a variety of different metrics.

Standards can be grouped as follows in increasing range order:

Personal area network (PAN) systems are intended for short range communication between devices typically controlled by a single person. Some examples include wireless headsets for mobile phones or wireless heart rate sensors communicating with a wrist watch. Some of these technologies include standards such as ANT [UWB](https://en.wikipedia.org/wiki/Ultra-wideband), [Bluetooth](https://en.wikipedia.org/wiki/Bluetooth), [ZigBee](https://en.wikipedia.org/wiki/ZigBee), and [Wireless USB](https://en.wikipedia.org/wiki/Wireless_USB).

[Wireless Sensor Networks](https://en.wikipedia.org/wiki/Wireless_Sensor_Networks) (WSN / WSAN) are, generically, networks of low-power, low-cost devices that interconnect wirelessly to collect, exchange, and sometimes act-on data collected from their physical environments - "sensor networks". Nodes typically connect in a star or mesh topology. While most individual nodes in a WSAN are expected to have limited range ([Bluetooth](https://en.wikipedia.org/wiki/Bluetooth), [ZigBee](https://en.wikipedia.org/wiki/ZigBee), [6LoWPAN](https://en.wikipedia.org/wiki/6LoWPAN), etc.), particular nodes may be capable of more expansive communications ([Wi-Fi](https://en.wikipedia.org/wiki/Wi-Fi), [Cellular networks](https://en.wikipedia.org/wiki/Cellular_networks), etc.) and any individual WSAN can span a wide geographical range. An example of a WSAN would be a collection of sensors arranged throughout an agricultural facility to monitor soil moisture levels, report the data back to a computer in the main office for analysis and trend modeling, and maybe turn on automatic watering spigots if the level is too low.

For wider area communications, [wireless local area network](https://en.wikipedia.org/wiki/Wireless_local_area_network) (WLAN) is used. WLANs are often known by their commercial product name [Wi-Fi](https://en.wikipedia.org/wiki/Wi-Fi). These systems are used to provide wireless access to other systems on the local network such as other computers, shared printers, and other such devices or even the internet. Typically a WLAN offers much better speeds and delays within the local network than an average consumer's [Internet access](https://en.wikipedia.org/wiki/Internet_access). Older systems that provide WLAN functionality include [DECT](https://en.wikipedia.org/wiki/DECT) and [HIPERLAN](https://en.wikipedia.org/wiki/HIPERLAN). These however are no longer in widespread use. One typical characteristic of WLANs is that they are mostly very local, without the capability of seamless movement from one network to another.

[Cellular networks](https://en.wikipedia.org/wiki/Cellular_networks) or [WAN](https://en.wikipedia.org/wiki/Wide_Area_Network) are designed for citywide/national/global coverage areas and seamless mobility from one access point (often defined as a [Base Station](https://en.wikipedia.org/wiki/Base_Station)) to another allowing seamless coverage for very wide areas. Cellular network technologies are often split into 2nd generation [2G](https://en.wikipedia.org/wiki/2G), [3G](https://en.wikipedia.org/wiki/3G) and [4G](https://en.wikipedia.org/wiki/4G) networks. Originally 2G networks were voice centric or even voice only digital cellular systems (as opposed to the analog 1G networks). Typical 2G standards include [GSM](https://en.wikipedia.org/wiki/GSM) and [IS-95](https://en.wikipedia.org/wiki/IS-95) with extensions via [GPRS](https://en.wikipedia.org/wiki/GPRS), [EDGE](https://en.wikipedia.org/wiki/EDGE) and [1xRTT](https://en.wikipedia.org/wiki/CDMA2000#1X), providing Internet access to users of originally voice centric 2G networks. Both [EDGE](https://en.wikipedia.org/wiki/EDGE) and [1xRTT](https://en.wikipedia.org/wiki/1xRTT) are 3G standards, as defined by the [ITU](https://en.wikipedia.org/wiki/IMT-2000), but are usually marketed as 2.9G due to their comparatively low speeds and high delays when compared to true 3G technologies.

True 3G systems such as [EV-DO](https://en.wikipedia.org/wiki/EV-DO), [W-CDMA](https://en.wikipedia.org/wiki/W-CDMA) (including [HSPA](https://en.wikipedia.org/wiki/High_Speed_Packet_Access)) provide combined [circuit switched](https://en.wikipedia.org/wiki/Circuit_switching) and [packet switched](https://en.wikipedia.org/wiki/Packet_switching) data and voice services from the outset, usually at far better data rates than 2G networks with their extensions. All of these services can be used to provide combined mobile voice access and Internet access at remote locations.

4G networks provide even higher bitrates and many architectural improvements, which are not necessarily visible to the consumer. The current 4G systems that are deployed widely are [HSPA+](https://en.wikipedia.org/wiki/HSPA%2B), [WIMAX](https://en.wikipedia.org/wiki/WIMAX) and [LTE](https://en.wikipedia.org/wiki/LTE_(telecommunication)). The latter two are pure packet based networks without traditional voice circuit capabilities. These networks provide voice services via [VoIP](https://en.wikipedia.org/wiki/Voice_over_IP).

Some systems are designed for point-to-point line-of-sight communications, once two such nodes get too far apart they can no longer communicate. Other systems are designed to form a [wireless mesh network](https://en.wikipedia.org/wiki/Wireless_mesh_network) using one of a variety of [routing protocols](https://en.wikipedia.org/wiki/List_of_ad_hoc_routing_protocols). In a mesh network, when nodes get too far apart to communicate directly, they can still communicate indirectly through intermediate nodes.