U.S. Department of Commerce
National Telecommunications and Information Administration

Smart Communities Glossary

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Numerals

4G: The fourth-generation cellular wireless telecommunications standard with maximum download and upload speeds of at least 100 Mbps.[1]

5G: The next generation of wireless connectivity, which will allow new high-speed, low latency wireless broadband services.[2]

B

Backhaul: The portion of a broadband network in which the local access or end user point is linked to the main Internet network.[3]

Big Data: Consists of extensive datasets—primarily in the characteristics of volume, variety, velocity and/or variability—that require a scalable architecture for efficient storage, manipulation and analysis.[4]

Broadband: High-speed Internet access that is always on and faster than traditional dial-up access. Broadband includes several high-speed transmission technologies, such as fiber, wireless, satellite, digital subscriber line and cable. For the Federal Communications Commission (FCC), broadband capability requires consumers to have access to actual download speeds of at least 25 Mbps and actual upload speeds of at least 3 Mbps.[5]

C

Civic Technology: The use of digital tools and technology to deepen the relationship between citizens and their government.[6]

Cloud Computing: A model for allowing convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.[7]

Connected Vehicles: Implementation of technology and short-range radio signals to enable cars, trucks, buses, trains and other vehicles to communicate with one another, connected roads and other connected infrastructure, allowing them to continuously share important safety and mobility information.[8]

Cybersecurity: The ability to protect or defend the use of cyberspace from cyber-attacks.[9]

D

Data Analytics: The scientific operation of transforming data into insights, allowing users to make more informed decisions.[10]

Data Visualization: The representation of data that has been abstracted in some schematic form, including attributes or variables for the units of information.[11]

Digital Inclusion: Implies that individuals and communities have access to robust broadband connections; Internet-enabled devices that meet their needs; and the skills to explore, create and collaborate in the digital world.[3]

Distance Learning: A form of education that utilizes certain technologies such as broadband Internet, audio conferencing, satellite, or wireless communications devices to deliver educational services to students who are not in close proximity to the instructor.[12]

E

E-Government: Focuses on the utilization of information and communication technologies to deliver government services through the Internet and other digital technologies.[13]

E-Health: The delivery of health care through simplified, standardized electronic information and technology, to gain improved quality of care, better health outcomes and reduced costs.[14]

Edge Device: General purpose devices capable of running full-fledged operating systems that are often battery-powered.[15]

Embedded Systems: A system using a combination of computer hardware, software and additional mechanical parts (often part of a larger system, product or device) designed to perform a dedicated function.[16]

F

Fiber: A flexible, hair-thin glass or plastic strand that is capable of transmitting large amounts of data at high transfer rates as pulses or waves of light.[3]

G

Geospatial Data: Information that identifies the geographic location and characteristics of natural or constructed features and boundaries on the Earth and includes: (a) statistical data and information derived from, among other things, remote sensing, mapping, and surveying technologies; and (b) mapping, charting, and geodetic data, and related products.[17]

H

Hackathons: Events where numerous participants come together to collaborate on computer coding projects and work on computer applications and programs.[18]

I

Information and Communication Technology (ICT): Various manufacturing and services that capture, transmit and display data and information electronically.[19]

Intelligent Transportation System (ITS): Applies information, technology and systems engineering principles to the management and operations of surface transportation facilities and systems, including freeways, arterials and transit.[20]

Internet of Things: An umbrella term to reference the technological development in which a greatly increasing number of devices are connected to one another and/or to the Internet.[21]

Interactive Kiosk: Strategically placed interactive computer displays that provide users information via video presentations, menus and question prompts; users operate programs with touch-screens, keys, a mouse or a trackball.[22]

L

LTE (Long Term Evolution): A 4G wireless broadband technology that provides speeds of up to 100 Mbps download and 30 Mbps upload.[3]

M

Machine to Machine (M2M): Refers to the exchanging of information between computers and/or machines with little or no human involvement.[23]

P

Precision Agriculture: A management system that is information and technology based, is site specific, and uses one or more sources of data – soils, crops, nutrients, pests, moisture, or yield – for optimum profitability, sustainability and protection of the environment.[24]

Public Wi-Fi: Provides consumers with free, ubiquitous, wireless, high-speed Internet options.[25]

S

Sensor: A device that responds to a physical stimulus and produces an electronic signal.[26]

Small Cell Technology: Low-powered wireless base stations that do not require high-location installation and function like traditional cells in a mobile wireless network, addressing coverage and capacity shortfalls in smaller infrastructure footprints than Distributed Antenna Networks.[27]

Smart Community: A concept in which cities utilize broadband, digital technologies and intelligent city planning to create smart and sustainable cities with high-quality living, education, healthcare, public safety and job opportunities.[28]

Smart Device: Embedded intelligence in devices.[29]

Smart-Grid Technology: An electrical grid consisting of sensors, controls, computers, automation and other equipment that uses digital technology and allows for two-way communication between the utility and its customers. This allows power grid managers to improve the efficiency and sustainability of utility services.[30]

Smart Lighting Systems: Internal and external lighting systems that can be controlled remotely by users or that can adapt to existing light conditions, enhancing public safety and reducing energy consumption. For instance, cities can use smart lampposts to give motorists warnings for detours during road construction or weather emergencies.[31]

Smart Manufacturing: The creation, communication and use of electronic information, as well as the interface of these information systems with the human element, for data-driven decision making and performance optimization.

This includes how data and information generated during the production process are communicated and used during design, engineering and production phases of the product cycle.[32]

Smart Meter: A digital meter that measures and records electricity usage at a minimum of hourly intervals and provides that data to both the utility and utility customers at least once a day.[33]

Smart Water Management: The use of ICT products and systems to address challenges in urban and rural water management. For instance, water utilities can utilize connected devices, sensors and meters to detect leaks or faulty infrastructure.[34]

T

Telemedicine: The use of high-speed, high-capacity Internet to support long-distance healthcare services, patient and provider education and enhanced healthcare administration.[35]

U

Unmanned Aerial System (UAS): Often referred to as a drone, an aircraft that operates with no human pilot onboard and is controlled from an operator on the ground.[36]

Unmanned Aerial Vehicle (UAV): Air vehicles that do not contain human operators and can fly beyond visual line of sight via remote or autonomous control.[37]

W

Wireless: A type of technology system that transmits and receives information without wires.[26]

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