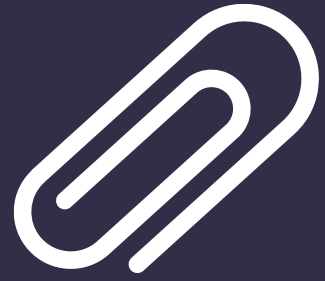


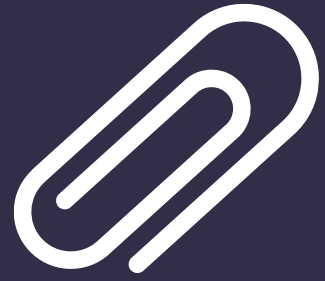
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Improving the quality of life for people with disabilities and the growing share of older people becomes an increasingly important task for the European society. One of the ways to improve the quality of life is to make living space a happier place to live, introducing clean technology into a smart home. Expressions like a smart home, intelligent house and home networking have been used for more than a decade to introduce conceptual network devices and equipment inside the home. One of the best definitions of smart home technology is that a smart home represents the integration of technology and services through home networking for a better standard of living. Still some of the terms that relate to a smart home are conscious houses, changing houses and ambient intelligence. These phrases are used to emphasize the fact that home areas should be able to always respond or adapt according to its diverse population and their changing needs. For example, ambient intelligence is defined as a digital environment that is sensitive, adaptable and courageous to the presence of people. The smart home is a homeowner place with smart technology that provides services that improve human life, such as security, entertainment and the like, will enable older people to lead an independent life in their homes. A smart home is an integral part of the data network that connects and integrates key electrical devices, and allows them to be controlled from a central source.

Electrical devices and functions include, but are not limited to, things like heating, lighting, alarm systems, "white" and "brown" home appliances, remote controls and communication devices. Smart homes allow interaction between the controlled elements, and this system makes it different from the general control systems around the environment. Smart systems use electricity, coaxial cables, telecommunication systems, infrared rays, internet or radio frequencies, or a combination of several others as communication media and controls. The basic installation of a smart home is easily programmed to meet any individual's needs and is therefore highly adapted to the design principles for everyone.

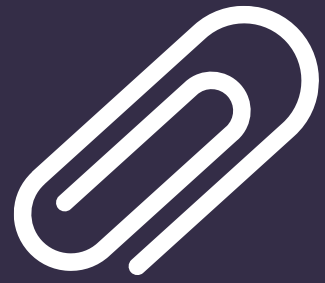
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Smart home systems include user control, automatic control of functions through interaction between components and connections, and interaction with various communication media.

Smart home technology is a collective term for information and communication technology (ICT), used in homes where various components communicate through the local network. This technology can be used to track, warn and perform functions according to selected criteria. Smart home technology enables automatic communication with the environment, via the Internet, regular landline phones, or mobile phones. Smart home technology gives a completely different flexibility and efficiency than conventional installations and environmental control systems due to programming, integration, and unit response to messages sent through the network. For example, lighting inside a smart home can be controlled automatically, or the lamps can fire while other things are happening at home. A smart home is an expression for homes that contain technology installed within smart homes. Good physical access is a prerequisite for optimal use of this technology. Generally speaking, if the electrical equipment is switched on but not being used, there is still a current of electricity. That means we will spend 5 to 10% of electricity, which makes the loss of money for no reason. Also, this can be the cause of many accidents, such as fires occurring at short electrical connections. Therefore, all people who forget to turn off electrical appliances when they go out must be reminded of it every day. On the other hand, if they go out of the way, forgetting to turn off the appliances, they have to go back to switch off plugs, so this is a waste of money. To solve this problem, smart home technology is essential. With technology advancement, many research projects on smart homes have evolved to improve people's living conditions. A smart home technology is used to make all electronic equipment in the home to behave "smartly" or "intelligently" and from this smart home have highly advanced automated lighting systems, temperature control, security and many other functions.

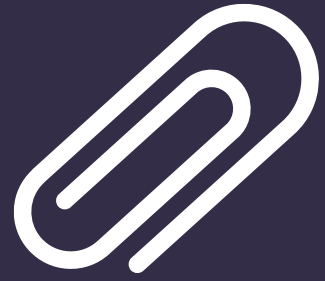
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The smart device is a standard device with a sophisticated computer that is installed to give it more efficiency and can track so many aspects of daily routines. A smart home is useful to everyone and can be used to improve everyday life at home. Accordingly, smart home technology consists of three parts, namely network, device control, and home automation. The network is used to connect automation for controlling devices, and can be wire or wireless network. Control devices are used to control the systems. Home automation is a device that controls the physical environment of a home. The network technology of a smart home can be classified into two basic types of connectivity, wired system and wireless system. In a wired system, the equipment will be directly connected to the main power source so that the data will be sent to the device to activate and deactivate.

There are many types of wires that people want to incorporate into the wall. Many types of house automation are connected through the wire system as new wires (twisted cables, optical fibers). An outstanding example of smart home technology is the X10, which is an open standard for home automation. X10 transmits binary data using amplitude modulation technique (AM). X10 controllers send signals via existing AC wires to receiver modules. Some of the smart home technologies are the Home Plug, the Consumer Electronics Bus (CEBus), etc. When it comes to wireless systems there must be two main elements: senders and receivers. Many new appliances / household appliances use wireless technology to communicate with other devices. Examples of wireless communication systems are microwaves, infrared radiation (IR), radio frequency (RF), Wi-Fi, Bluetooth, etc. Further, some of the network standards of smart home can work using both wired and wireless systems. An example of a wireless communication system for smart homes is Z-wave, a reliable and affordable wireless automation solution for homeowners. Z-wave is a radio-based wireless method for automatic device control. Controlling smart home devices are used to manage systems by sending data or signals to control drives or drives.

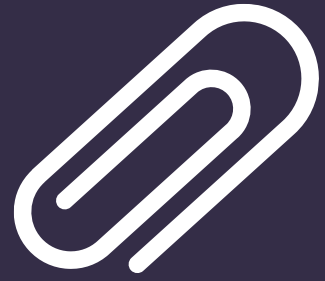
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An example of controllers are not just control devices but they can also be in the form of smartphones or smartphonses, tablets (iPads), browsers and SMS services. Moreover, some of these systems may have a computer that acts as the center of perception of the environment or assessment unit. The most popular smart technology is the one in the kitchen. Examples of kitchen appliances that are smart are microwave ovens, coffee makers, dishwashers, refrigerators and the like. IR or Internet refrigerator applies smart home technology to facilitate many household affairs. Connected to the Internet, allowing communication with users via the Internet. It is able to remove recipes and display them on the LCD screen. Also, this refrigerator is able to automate the inventory of the content inside it, so it informs users of what's in it. Moreover, microwave ovens are smart. Microwave ovens can communicate with smart coolers, and suggest prescriptions based on available food inside the refrigerator. The microwave oven can also be adjusted to turn on at a certain time when the users are not at home.

Another part of the home that possesses smart technology is the living room. Smart devices such as television and radio use this technology to enhance the home entertainment experience. Smart television has many features that allow interactive content on television. Further, lighting control systems can be used to control electric light in the household by using motion detectors that automatically discharge light after people come out of it or automatically fall off after someone enters the room. As far as the bedroom is concerned, it has a climate and atmosphere control that allows users to adjust the night temperature or day-to-day heating in the room as well as the corresponding light profile. Beds are also equipped with sensors that follow the movements of a person in bed, thus revealing a person's health condition. However, smart devices can be used in many aspects, such as for health purposes, because they can be used for health monitoring, such as personal trainers, remote diagnosis, and then used for entertainment through television, video games, HD video distribution or controlling the environment through remote home lighting control, air conditioning control, energy usage and many other things.

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