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Smart homes enable occupants to remotely control or program an array of automated home electronic devices by entering a single command, for example you are able to control your thermostat, a webcam, lights, TV, security and much more, all from a remote or an Android or iOS smartphone.

Smart homes connect all the devices and appliances in your home so they can communicate with each other and with you. Anything in your home that uses electricity can be put on the home network and is at your command. Whether you give that command by voice, remote control or computer, the home reacts. Most applications relate to lighting, home security, home theatre and entertainment and thermostat regulation.

The appliances and devices in the home are all receivers and the remote controls or keypads are all transmitters. For example, if you want to turn off a lamp in another room the transmitter will issue a message in numerical code that includes - An alert to the system that it's issuing a command, an identifying unit number for the device that should receive the command and a code that contains the actual command, such as "turn off."

Technology to equip homes with smart devices has previously worked on the development of the European Installation Bus, or Instabus. This is an embedded control protocol for digital communication between devices consisting of a 2 way wire bus line that is installed along with normal wiring. The Instabus line links all appliances to a decentralised communication system and functions like a telephone line over which appliances can be controlled. However, to make smart homes more efficient organisations are looking to drive adoption of an open interoperability standard among vendors in the control networks industry.

Smart homes are looking to use a standardised platform as there are some limitations to the Instabus technology. Communicating over electrical lines is not always reliable because the lines get "noisy" from powering other devices. The device could interpret electronic interference as a command and react, or it might not receive the command at all.

Instead of going through the power lines, some systems use radio waves to communicate, which is also how WiFi and mobile phone signals operate. However, home automation networks don't need all the juice of a WiFi network because automation commands are short messages. Some technologies are currently using mesh networks, meaning there's more than one way for the message to get to its destination.

Using wireless communications and standardised technology provides you with less installation costs and flexibility as to where you place your devices in the home and allows you devices to communicate with each other freely.

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