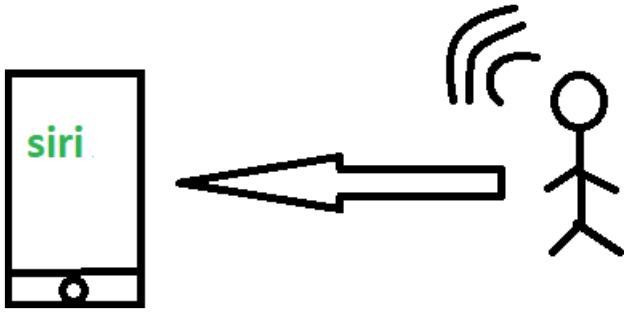
Types of Communications in IOT:

The following are some communication types in IoT:-

a. Human to Machine (H2M):

In this human gives input to IOT device i.e as speech/text/image etc. IOT device (Machine)like sensors and actuators then understands input, analyses it and responds back to human by means of text or Visual Display. This is very useful as these machines assist humans in every everyday tasks. It is a combo of software and hardware that includes human interaction with a machine to perform a task.



H2M communication

Merits: This H2M has a user-friendly interface that can be quickly accessed by following the instructions. It responds more quickly to any fault or failure. Its features and functions can be customized.

Examples:

· Facial recognition.

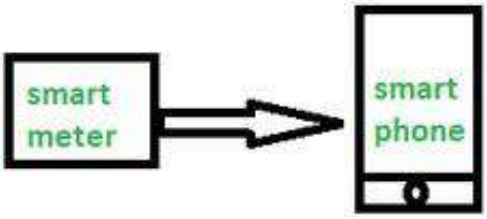
· Bio-metric Attendance system.

· Speech or voice recognition.

b. Machine to Machine (M2M):

In this the interaction or communication takes place between machines by automating data/programs. In this machine level instructions are required for communication. Here communication takes place without human interaction. The machines may be either connected through wires or by wireless connection. An M2M connection is a point-to-point connection between two network devices that helps in transmitting information using public networking

technologies like Ethernet and cellular networks. IoT uses the basic concepts of M2M and expands by creating large “cloud” networks of devices that communicate with one another through cloud networking platforms.



M2M communication

Merits: This M2M can operate over cellular networks and is simple to manage. It can be used both indoors and outdoors and aids in the communication of smart objects without the need for human interaction. The M2M contact facility is used to address security and privacy problems in IoT networks. Large-scale data collection, processing, and security are all feasible.

Demerits: However, in M2M, use of cloud computing restricts versatility and creativity. Data security and ownership are major concerns here. The challenge of achieving interoperability between cloud/M2M IoT systems is daunting. M2M connectivity necessitates the existence of a reliable internet connection.

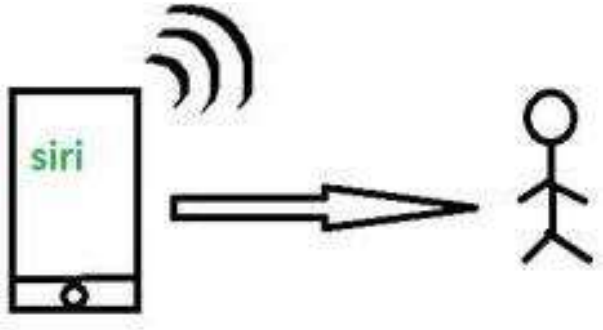
Examples:

· Smart Washing machine sends alerts to the owners’ smart devices after completion of washing or drying of clothes.

· Smart meters tracks amount of energy used in household or in companies and automatically alert the owner.

c. Machine to Human (M2H) :

In this machine interacts with Humans. Machine triggers information (text messages/images/voice/signals) respective / irrespective of any human presence. This type of communication is most commonly used where machines guide humans in their daily life. It is way of interaction in which humans co-work with smart systems and other machines by using tools or devices to finish a task.



M2H communication

Examples:

· Fire Alarms

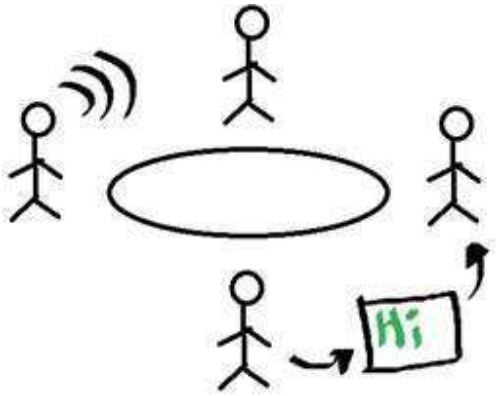
· Traffic Light

· Fitness bands

· Health monitoring devices

d. Human to Human (H2H) :

This is generally how humans communicate with each other to exchange information by speech, writing, drawing, facial expressions, body language etc. Without H2H, M2M applications cannot produce the expected benefits unless humans can immediately fix issues, solve challenges, and manage scenarios.



H2H communication