Introduction to IoT

Definition and Characteristics

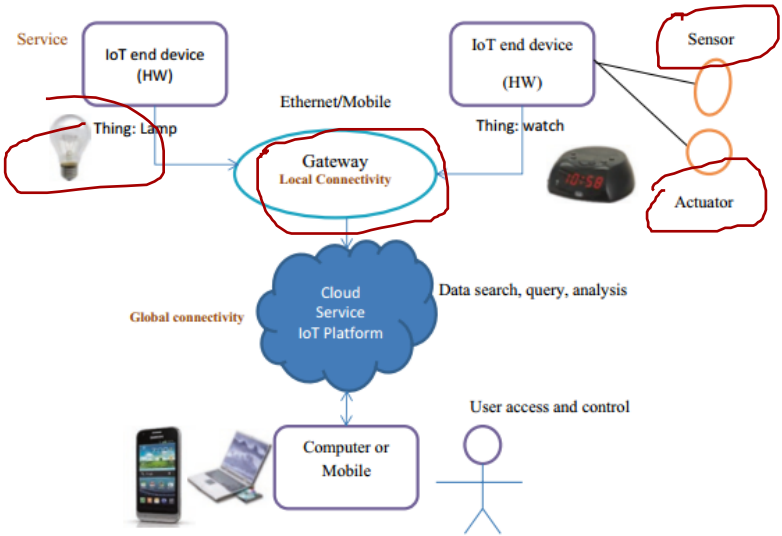
Rahul Shandilya

Internet of Things

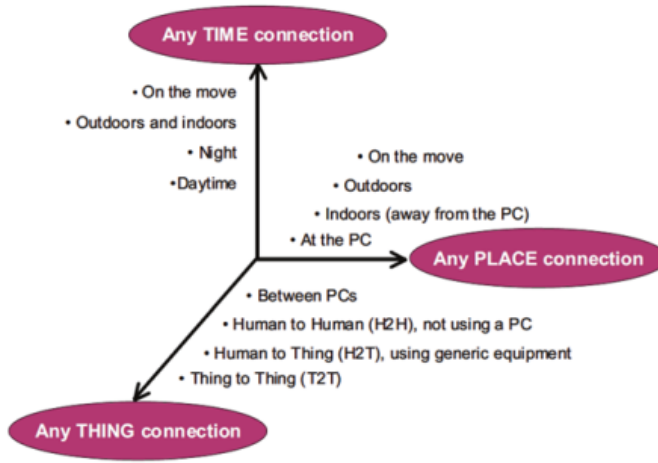
Definition

A dynamic global network infrastructure with self-configuring capabilities based on standard and interoperable communication protocols where physical and virtual "things" have identities, physical attributes, and virtual personalities and use intelligent interfaces, and are seamlessly integrated into the information network, Often communicate data associated with users and their environments.

Model of IoT Architecture



IoT Smartness



Dynamic and Self-Adapting

IoT devices and systems may have the capability to dynamically adapt with the changing contexts and take actions based on their operating conditions, user's context, or sensed environment.

IoT Characteristics

Dynamic and Self-Adapting

IoT devices and systems may have the capability to dynamically adapt with the changing contexts and take actions based on their operating conditions, user's context, or sensed environment.

Self-Configuring

IoT devices may have self-configuring capability, allowing a large number of devices to work together to provide certain functionality (such as weather monitoring).

IoT Characteristics

Dynamic and Self-Adapting

IoT devices and systems may have the capability to dynamically adapt with the changing contexts and take actions based on their operating conditions, user's context, or sensed environment.

Self-Configuring

IoT devices may have self-configuring capability, allowing a large number of devices to work together to provide certain functionality (such as weather monitoring).

Interoperable Communication Protocols

IoT devices may support a number of interoperable communication protocols and can communicate with other devices and also with the infrastructure.

Unique Identity

Each IoT device has a unique identity and a unique identifier (such as an IP address or a URI). IoT systems may have intelligent interfaces which adapt based on the context, allow communicating with users and the environmental contexts.

Unique Identity

Each IoT device has a unique identity and a unique identifier (such as an IP address or a URI). IoT systems may have intelligent interfaces which adapt based on the context, allow communicating with users and the environmental contexts.

Integrated into Information Network

IoT devices are usually integrated into the information network that allows them to communicate and exchange data with other devices and systems. IoT devices can be dynamically discovered in the network, by other devices and/or the network, and have the capability to describe themselves (and their characteristics) to other devices or user applications.

Growth and Challanges