**Comparative Analysis of IoT Protocols**

**Introduction**

The Internet of Things (IoT) is a collective system of various devices, machines, objects & people connected together over a network, used for data transfer and communication without direct human interaction or interfacing. IoT consists of various elements such as gateways for controlling and managing flow of data in system, computing devices for processing data, storage media for data storage & protocols for specifying the structure rules that govern the complete system. Applications of IoT include disaster management, law enforcement, health care, military operations, security systems, retail, automation etc.

**Standards in IoT**

*Protocol*

A protocol is a set of rules that define a procedure for functioning of a system.

*List of protocols*

1. MQTT
2. MQTT-SN
3. XMPP
4. AMQP
5. CoAP
6. DDS

*Machine to Machine Communication (M2M)*

Machine to machine communication (M2M) refers to the direct communication between two or more physical devices connected over a network without interference of humans or other entities.

**Message Queueing & Telemetry Transport (MQTT)**

MQTT is a commonly used protocol for M2M (generally sensors). It is based on publish/subscribe model. It is used for remote transport of sensor data over a medium such as local network or Internet. It consist of a broker that handles the transport of messages from publishers to subscribers. Publishers are the entities that publish the data on topics which are ultimately subscribed by the subscribers who receive the data.

**Extensible Messaging & Presence Protocol (XMPP)**

XMPP is a communication protocol that allows data transfer between two or more devices/networks and is based on Extensible Markup Language (XML). XMPP follows client server architecture and works on the basis of request/response model. A publish/subscribe extension is also available for the protocol mainly for implementations in the domain of IoT and hence is said to be *“extensible”*. Applications of XMPP include real-time systems, electronic messengers etc.