



# **SNS COLLEGE OF ENGINEERING**



**Kurumbapalayam(Po), Coimbatore – 641 107**

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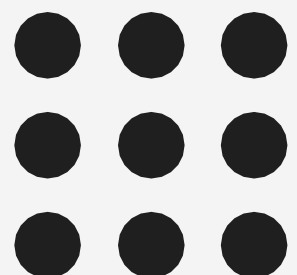
## **Department of Information Technology**

**Course Name – 19IT503 Internet of Things**

**III Year / V Semester**

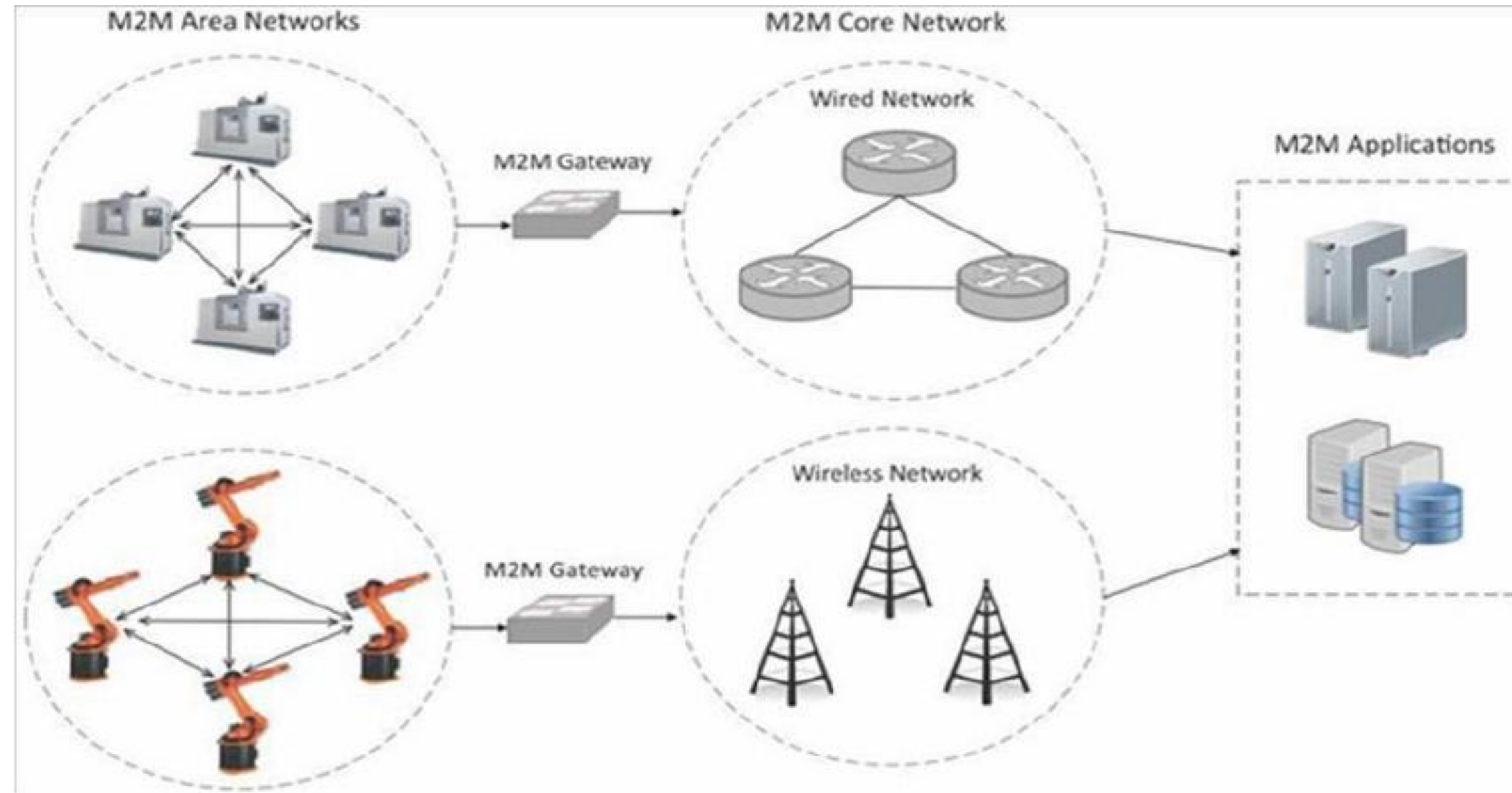
**Unit 1 – IoT INTRODUCTION AND APPLICATIONS**

**Topic 8- IoT and M2M**



# M2M

Machine-to-Machine (M2M) refers to networking of machines (or devices) for the purpose of remote monitoring and control and data exchange.





# M2M

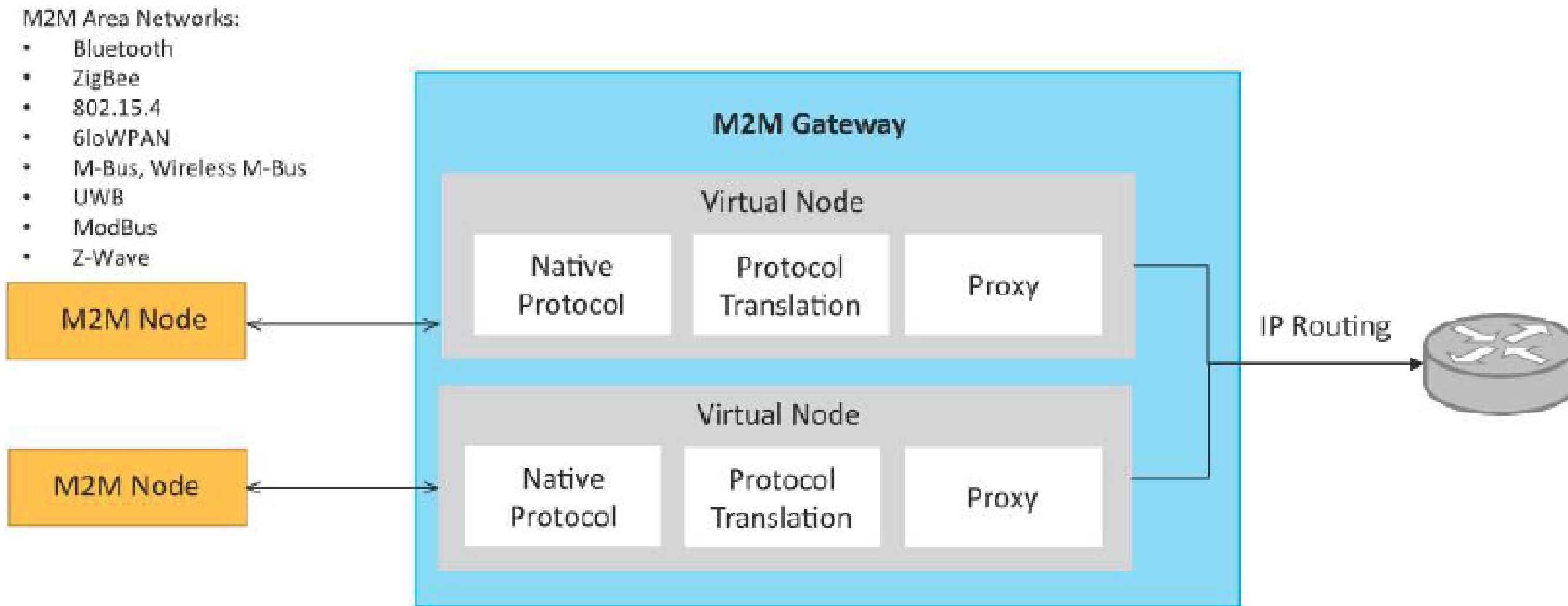


- An M2M area network comprises of machines (or M2M nodes) which have embedded hardware modules for sensing, actuation and communication.
- Various communication protocols can be used for M2M local area networks such as ZigBee, Bluetooth, ModBus, M-Bus, Wireless M-Bus, Power Line Communication (PLC), 6LoWPAN, IEEE 802.15.4, etc.
- The communication network provides connectivity to remote M2M area networks.
- The communication network can use either wired or wireless networks (IPbased).
- While the M2M area networks use either proprietary or non-IP based communication protocols, the communication network uses IP-based networks.

# M2M

## M2M Gateway

- Since non-IP based protocols are used within M2M area networks, the M2M nodes within one network cannot communicate with nodes in an external network.
- To enable the communication between remote M2M area networks, M2M gateways are used.





# Difference between IoT and M2M



## Differences

- Communication Protocol
- Machines in M2M vs Things in IoT
- Hardware vs Software Emphasis
- Data Collection & Analysis
- Applications

## Communication Protocols

- M2M and IoT can differ in how the communication between the machines or devices happens.
- M2M uses either proprietary or non-IP based communication protocols for communication within the M2M area networks.

## Machines in M2M vs Things in IoT

- The "Things" in IoT refers to physical objects that have unique identifiers and can sense and communicate with their external environment (and user applications) or their internal physical states.
- M2M systems, in contrast to IoT, typically have homogeneous machine types within an M2M area network.



# Difference between IoT and M2M



## Hardware vs Software Emphasis

- While the emphasis of M2M is more on hardware with embedded modules, the emphasis of IoT is more on software.

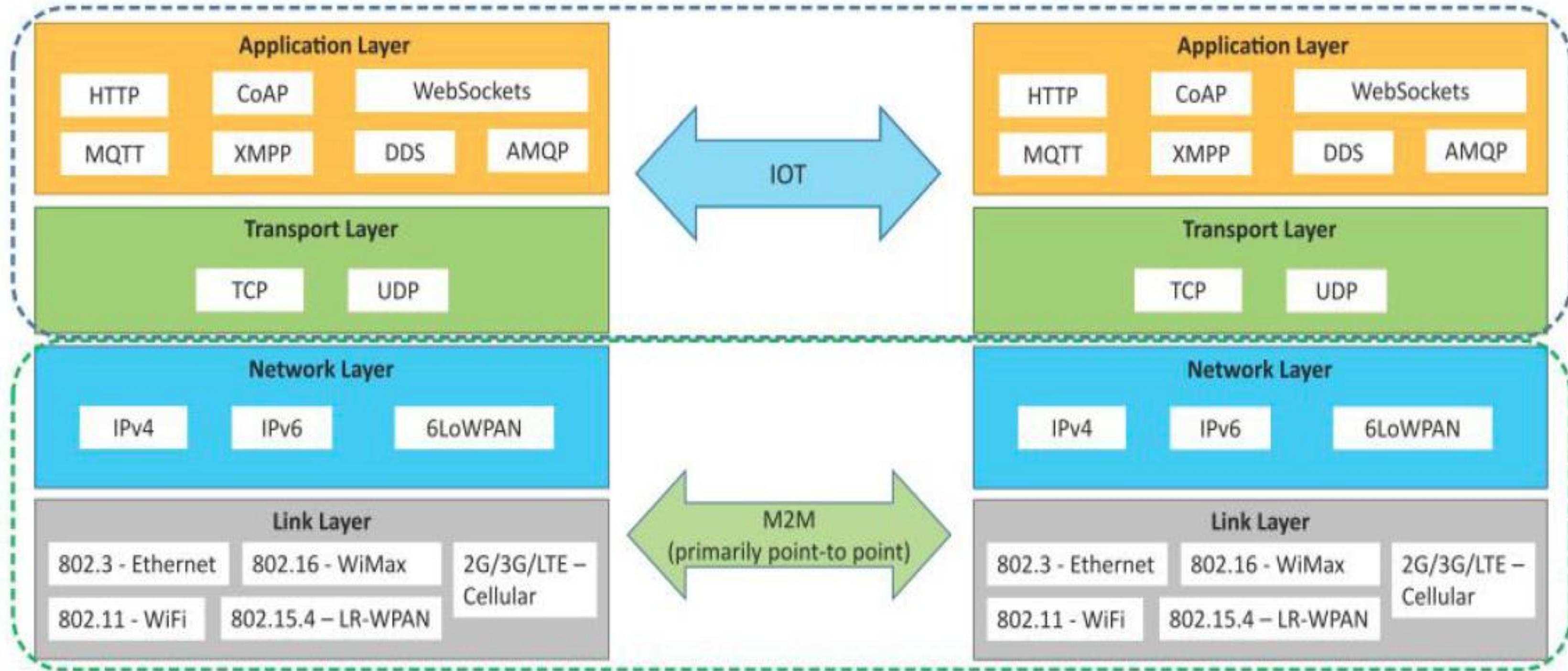
## Data Collection & Analysis

- M2M data is collected in point solutions and often in on-premises storage infrastructure.
- In contrast to M2M, the data in IoT is collected in the cloud (can be public, private or hybrid cloud).

## Applications

- M2M data is collected in point solutions and can be accessed by on-premises applications such as diagnosis applications, service management applications, and on premises Enterprise applications.
- IoT data is collected in the cloud and can be accessed by cloud applications such as analytics applications, enterprise applications, remote diagnosis and management applications, etc.

# Communication in IoT and M2M





**THANK YOU**