SNS COLLEGE OF ENGINEERING

Kurumbapalayam(Po), Coimbatore – 641 107

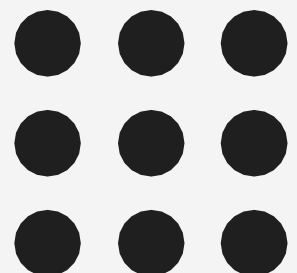**Accredited by NAAC-UGC with 'A' Grade**

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Department of Information Technology

Course Name – Internet of Things & AI

III Year / V Semester

## CONNECTIVITY TECHNOLOGIES AND COMMUNICATION PROTOCOLS

Introduction

- A wireless sensor network (WSN) is a wireless network consisting of spatially distributed autonomous devices using sensors to cooperatively monitor physical or environmental conditions, such as temperature, sound, vibration, pressure, motion or pollutants, at different locations.

- A collection of sensing devices that can communicate wirelessly.

Wireless Sensor Networks(WSN)

- Even though wireless sensors has limited resources in memory, computation power, bandwidth, and energy.

- With small physical size. It Can be embedded in the physical environment.

- Self-organizing multi-hop ad-doc networks

Wireless Sensor Network Architecture

Sensor Node

Gateway Sensor Node
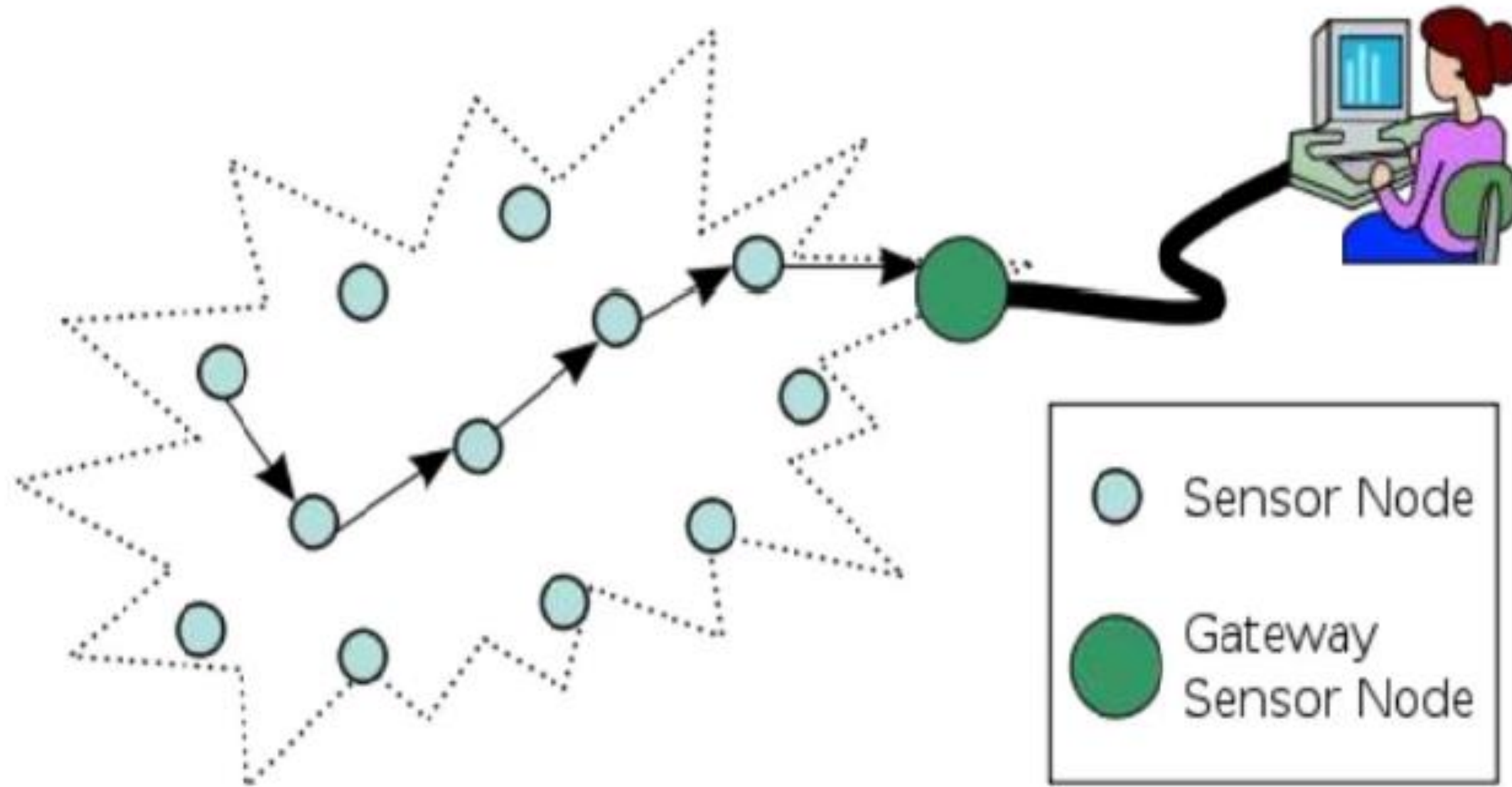
Architecture for a WSN

Special addressing requirement

- Local unique addresses
- Data-centric
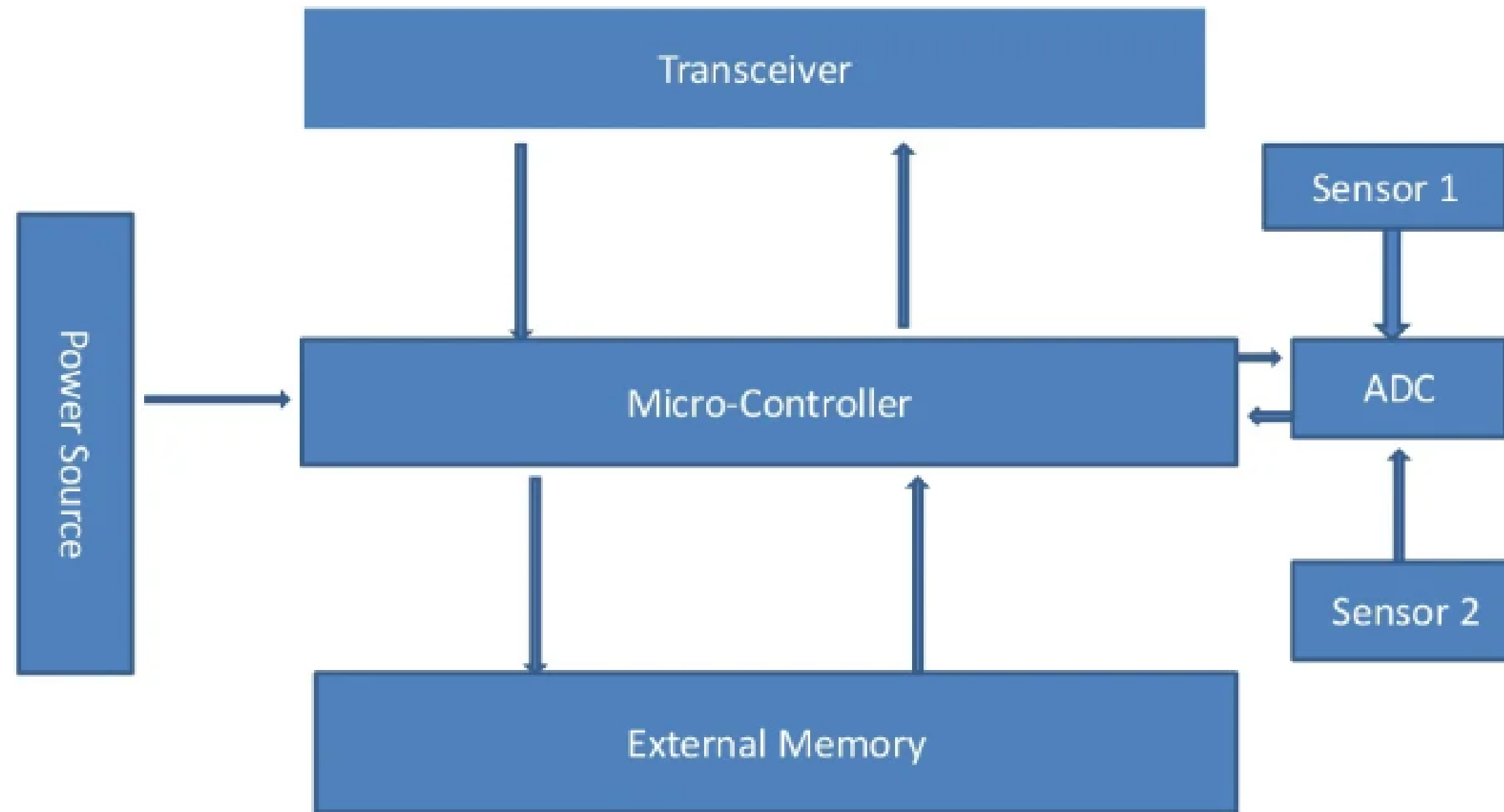- *Example: Each node has an unique number.*

Attribute-based naming architecture

- Data is named by one or more attributes.
- *Example: Each node is distinguished by an attribute – GPS sensors are practical for this.*
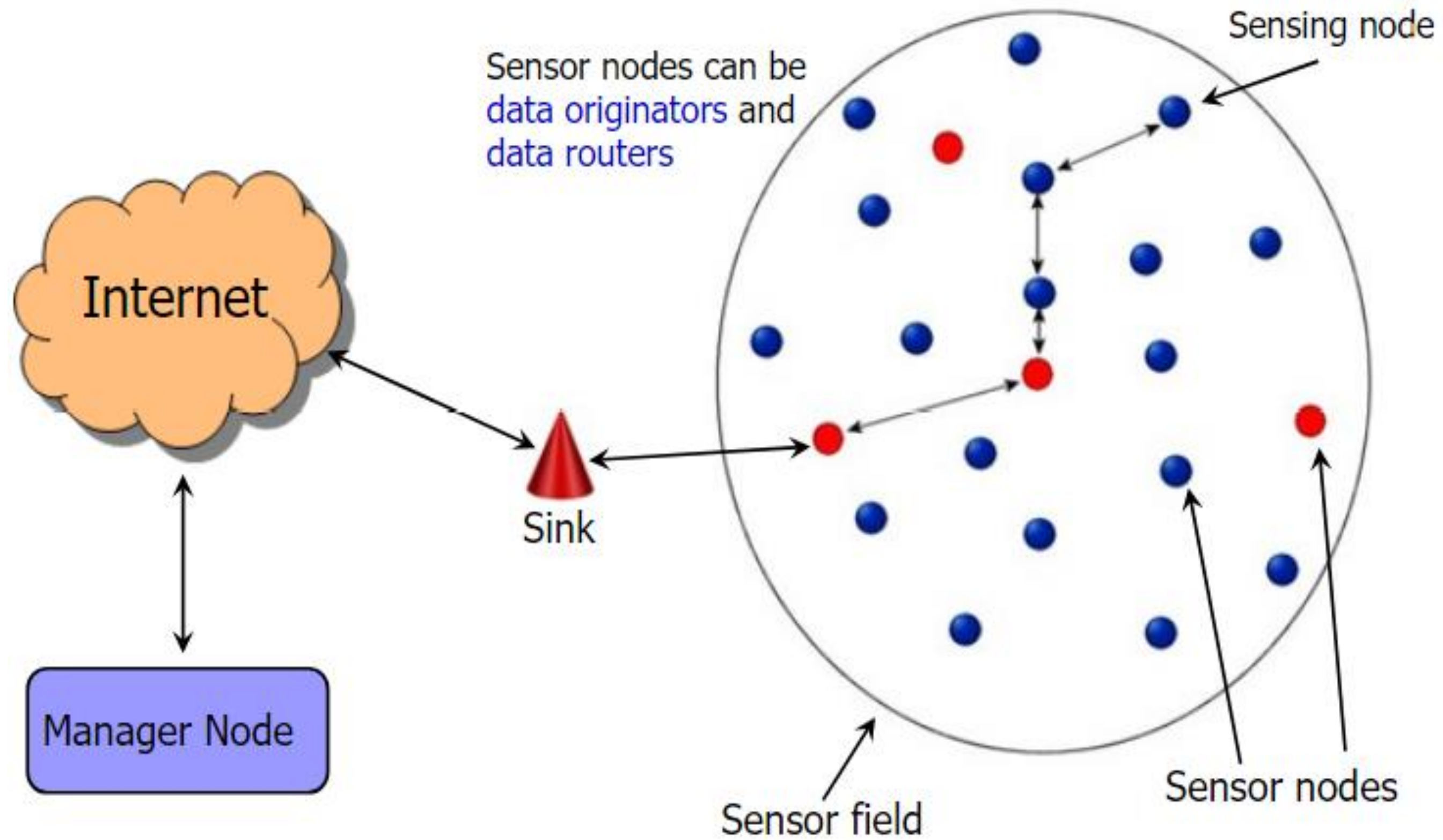
Wireless Sensor Node

- ## sensor
  - A transducer
  - converts physical phenomenon e.g. heat, light, motion, vibration, and sound into electrical signals

- ## sensor node
  - basic unit in sensor network
  - contains on-board sensors, processor, memory, transceiver, and power supply

- ## sensor network
  - consists of a large number of sensor nodes
  - nodes deployed either inside or very close to the sensed phenomenon

Architecture of Sensor Node

Sensor nodes can be
data originators and
data routers

Internet

Sink

Manager Node

Sensing node

Sensor nodes

Sensor field

Advantages

➢ It avoids a lot of wiring .

➢ It can accommodate new devices at any time .

➢ It's flexible to go through physical partitions .

➢ It can be accessed through a centralized monitor