DEPLOYMENT VIEW

INTERNET OF THINGS

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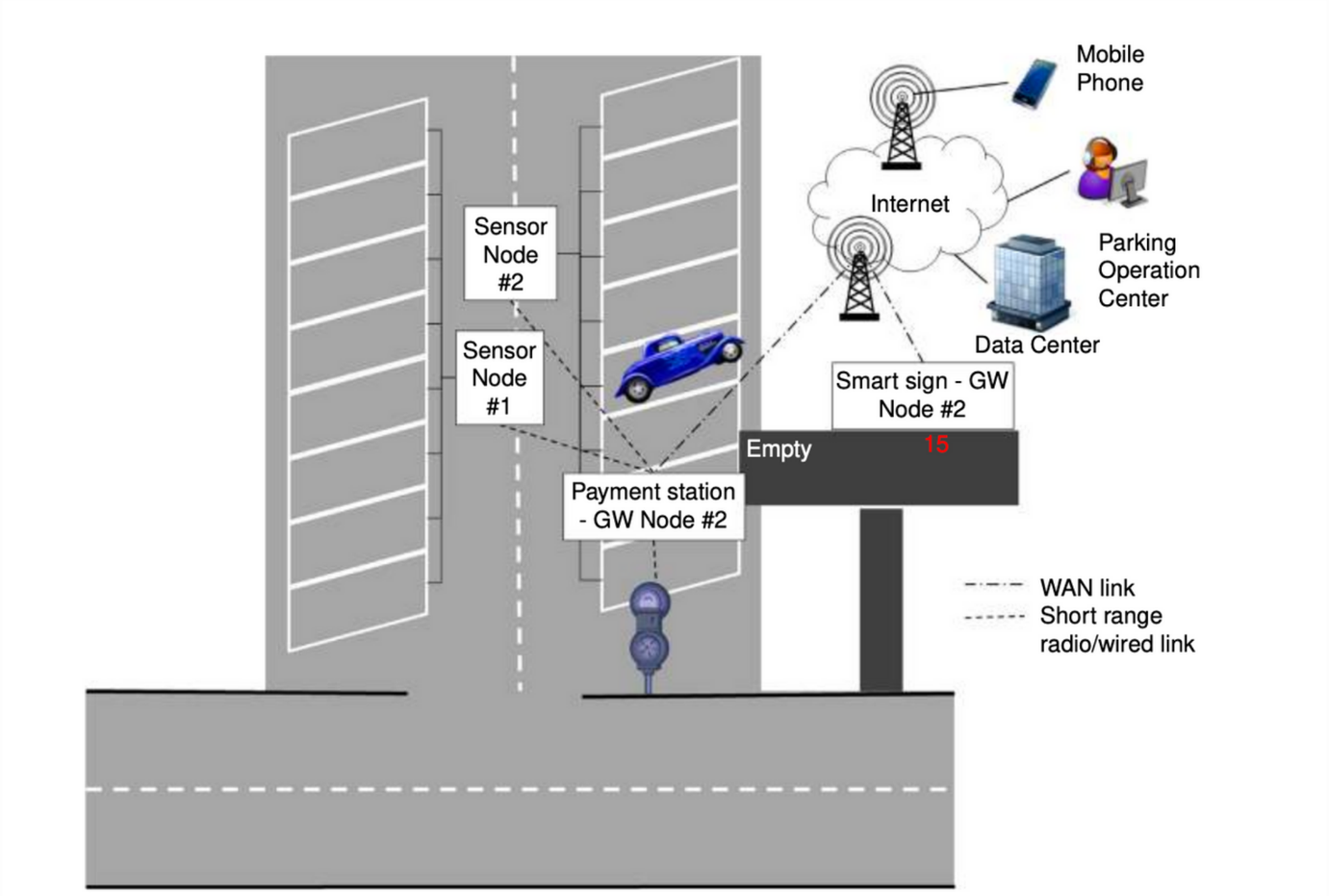
DEPLOYMENT & OPERATIONAL VIEW

A "deployment view" is a term commonly used in the field of software engineering and system architecture to describe a perspective or representation of a system's architecture that focuses on how the system is physically deployed or distributed across hardware and network infrastructure. It provides a high-level overview of how the software components are distributed across different servers, machines, data centers, or other computing resources.


Mobile
Phone
Internet
Parking
Operation
Center
Data Center
Sensor
Node
#2
Sensor
Node
#1
Smart sign - GW
Node #2
Empty
15
Payment station
- GW Node #2
WAN link
Short range
radio/wired link

DEPLOYMENT VIEW

- Sensors
- Gateways
- Central Server
- User Interfaces

DEPLOYMENT VIEW

Sensors: In a parking lot, sensors are deployed in individual parking spaces. These sensors can be ultrasonic sensors, magnetic sensors, or other types designed to detect the presence of vehicles. Sensors are placed in each parking spot and connected to a centralized system.

Gateways: Gateways or access points are strategically placed throughout the parking lot to collect data from the sensors. These gateways act as a bridge between the sensors and the central control system. They communicate with the sensors and relay data to the central server.

Central Server: The central server is responsible for aggregating and processing data from the sensors and gateways. It runs the parking lot management software, which interprets sensor data and makes real-time decisions based on occupancy information.

User Interfaces: User interfaces can include mobile apps for customers, parking attendants, and a web-based dashboard for parking lot managers. These interfaces allow users to check parking availability, reserve spots, or manage the parking lot efficiently.

HOW DEPLOYMENT WORKS ?

Physical Entities: These are the actual devices and equipment involved in the parking lot system, such as sensor nodes, payment stations, occupancy signs, and communication gateways. They are the tangible parts of the system that interact with the environment.

Placement of Devices: The deployment view shows where each device is located within the parking lot. For example, it specifies where the sensor nodes are placed to detect car presence, where payment stations are positioned for drivers to access, and where occupancy signs are mounted for visibility.

Communication Infrastructure: It also outlines how these devices are connected. This includes whether they communicate wirelessly or through wired connections. For instance, sensor nodes communicate with payment stations, and payment stations connect to the internet through Wide Area Network (WAN) technology.

Internet Connectivity: The view explains how the parking lot system is linked to the Internet. In this case, it describes that the payment stations and occupancy signs are connected to the internet through WAN technology, which allows data to be transmitted to a central data centre.

Data Center and Software: The data centre is where data from the parking lot is sent. It also hosts the parking lot management software. This software helps in processing data, managing parking operations, and making information available to users and the parking operation centre.

Scalability: The deployment view might indicate whether this system is designed to be expanded to manage multiple parking lots, suggesting that it is a scalable solution that can be used across various locations.

A deployment view is often represented using diagrams or models, such as deployment diagrams in Unified Modeling Language (UML) or other architectural modeling languages. These diagrams help software architects, developers, and operations teams understand how the system is physically organized and how various components interact in a distributed environment. This view is crucial for ensuring that a system can be effectively deployed, maintained, and scaled in a real-world environment.

By combining the deployment and operational views, the IoT system for the parking lot can optimize parking space usage, improve customer experience, and streamline management. This example illustrates how IoT technology can enhance the efficiency and effectiveness of parking operations.

THANK YOU