



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35

**Accredited by NBA-AICTE and Accredited by NAAC – UGC with A+ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai**

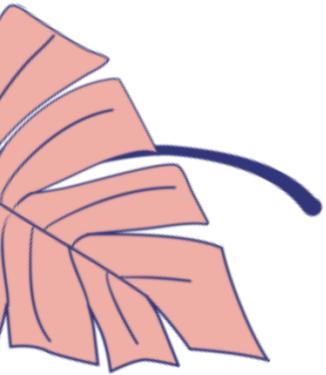
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

UNIT 2

SMART GRID TECHNOLOGIES – Communication Networks

**19EEE308 – SMART GRIDS
III year / VI Semester**





- A new method of electricity pricing has been introduced, which is commonly known as **Real time pricing** where the electricity rates vary hour-to-hour and are based on the electricity demands.
- Real time pricing requires the installation of a smart electricity meter that can send and receive information about electricity usage and electricity costs and give consumer more information about their own usage.

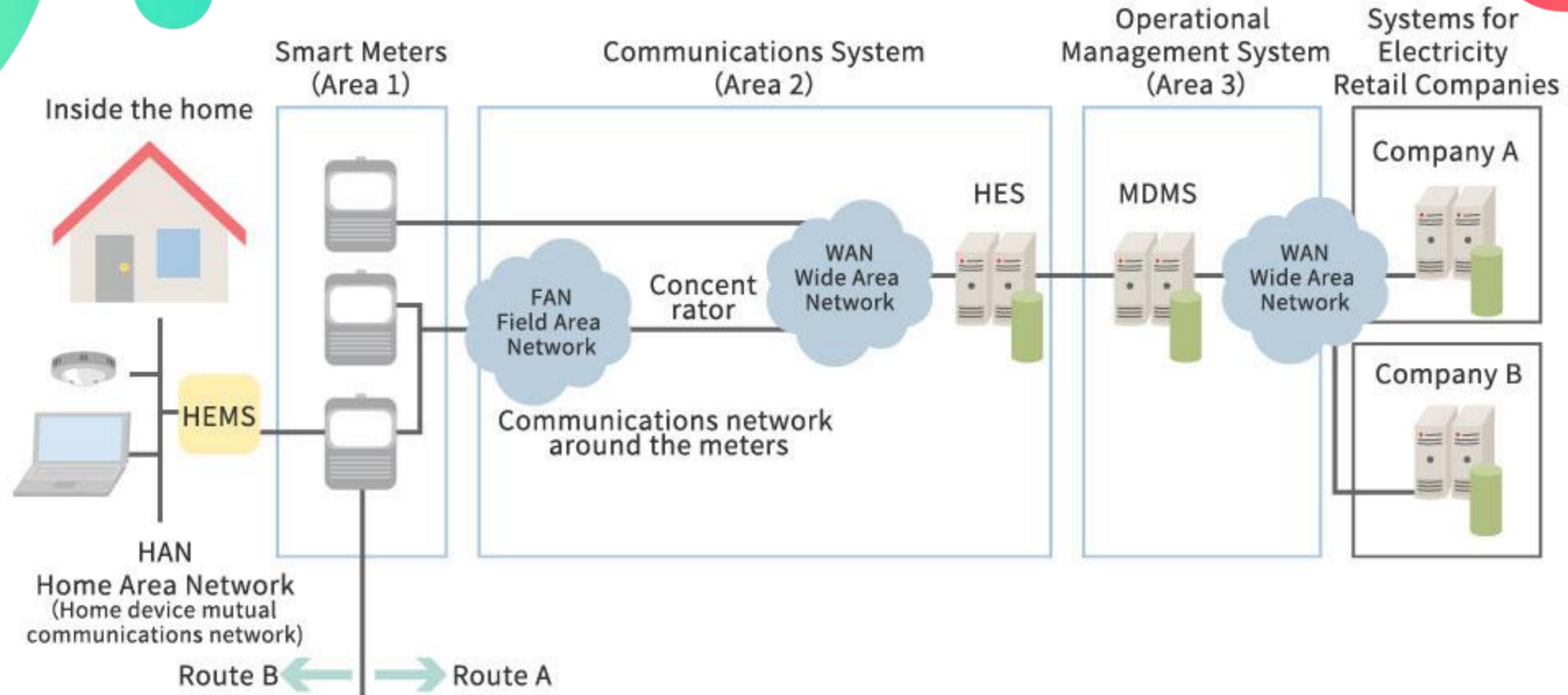


Time of Use (TOU) pricing

- **Peak**
- **Shoulder**
- **Off peak**



The Communication System



HES: Head-End System (a device that collects data and controls communication)

MDMS: Meter Data Management System (a system for managing smart meter data and equipment, etc.)

HEMS: Home Energy Management System (a system for the intelligent management of household energy)

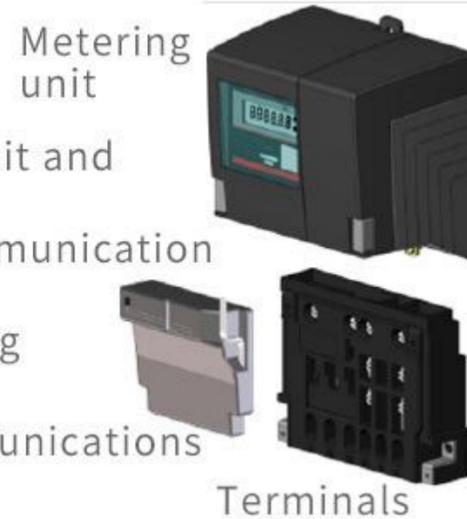


The Smart Meter Mechanism

Communication Methods

Smart Meters

- Separate metering unit and electrical terminals
- Equipped with a communication function
- Bidirectional metering as standard



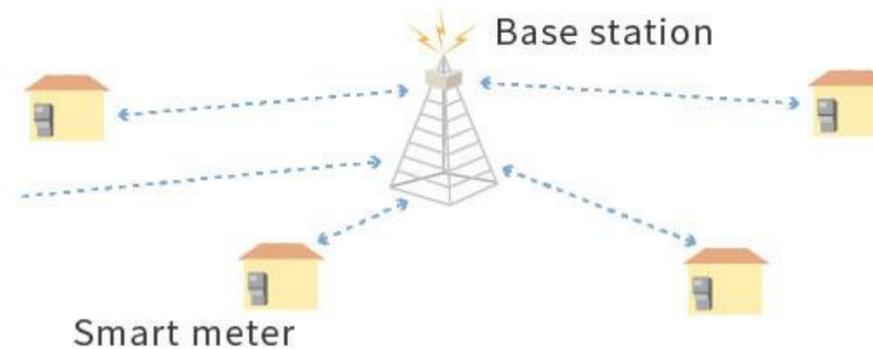
Conventional Model

- Integrated metering unit and electrical terminals
- Uni-directional metering
- No communication function



Wireless Star Network

Communication using 3G or LTE networks
Ideal for suburban and mountainous areas



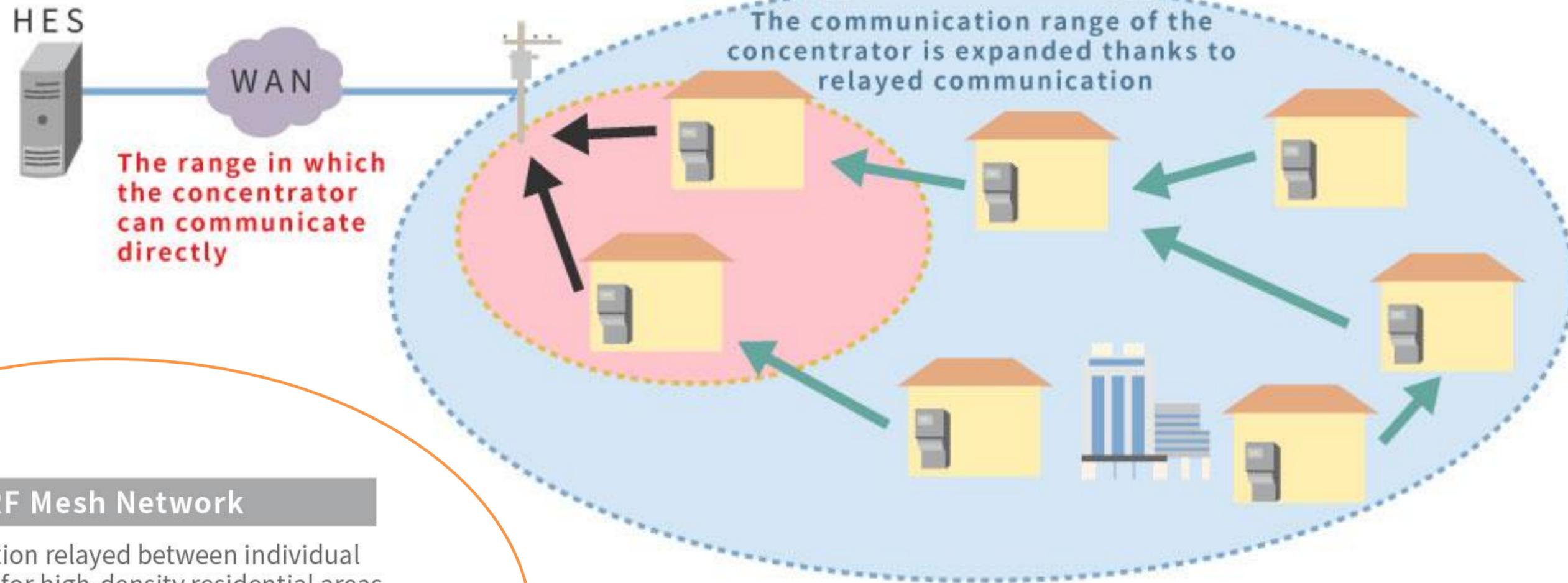
RF Mesh Network

Communication relayed between individual meters
Ideal for high-density residential areas



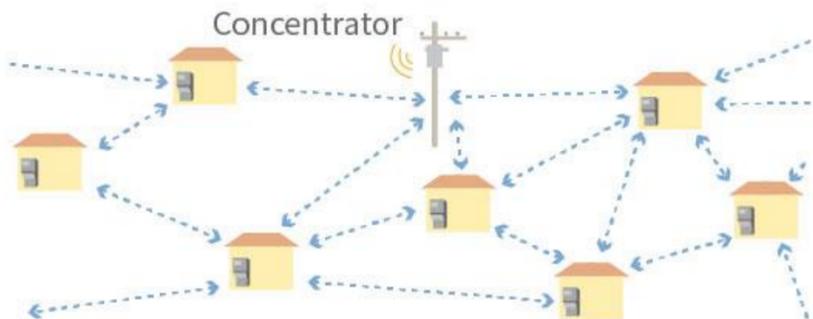


RF Mesh Method



RF Mesh Network

Communication relayed between individual meters Ideal for high-density residential areas





Summary



Activity



**KEEP
LEARNING..
Thank u**

SEE YOU IN NEXT CLASS