Overview of the GSM for Cellular System
How does the network keep track of the subs?

- Through LOCATION UPDATE.
- Through the help of various DATABASES
A cell is the geographic zone covered by one radio transmitter and receiver.
Concept of cellular network
Location Area

✓ Group of Cells.
✓ The identity of LA is stored in the VLR.
✓ Location updation will only happen if MS moves from one LA to another LA.

MSC Area

✓ Group of LAs.
✓ Geographical part of the network controlled by one MSC.
✓ In order to route a call to an MS, stored in HLR.
How does the network keep track of the subs?

- Through LOCATION UPDATE.
- Through the help of various DATABASES
The Subscriber Identity Module (SIM)

- the SIM + mobile equipment = mobile station (MS), a device able to access services in a GSM network via the Air interface.
The Visitor Location Register (VLR) database which temporarily keeps record of subscribers.

The Third Database

The Home Location Register (HLR)

- database which permanently keeps record of basic identification data of the subscribers including their current location (variable) equivalent to a VLR address.
Traffic Cases
Case 1: MS in Idle Mode

1. IMSI attach
2. Location updating
3. Changing Cells within an LA
4. Location updating, same MSC/VLR
5. Location updating, new MSC/VLR

Case 2: MS in Active Mode

1. Call from MS
2. Call to MS

Case 3: International Traffic Cases

1. IMSI attach
2. Call to MS