



FACULTY OF ENGINEERING & TECHNOLOGY

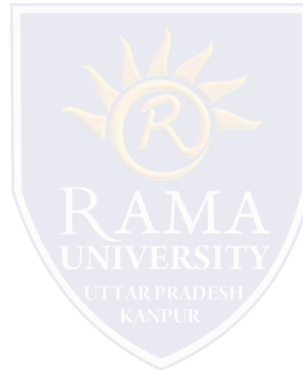
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Topics Covered

Equipment Identity Register
Authentication Centre
Operation and Maintenance Centre (OMC)
Base Station System (BSS)



Equipment Identity Register

Equipment Identity Register consists of identity of mobile station equipment called International Mobile Equipment Identity (IMEI), which may be valid, suspect, and prohibited. When a mobile station accesses the system, the equipment validation procedure is evoked before giving the services.

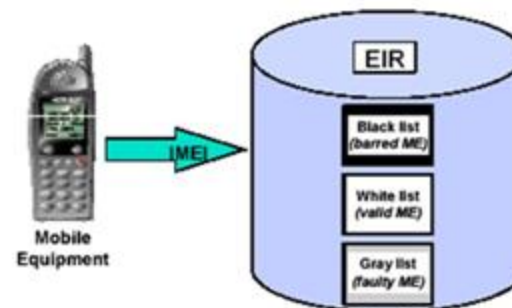
The information is available in the form of three lists.

White List- The terminal is allowed to connect to the Network.

Grey List- The terminal is under observation from the network for the possible problems.

Black List- The terminals reported as stolen are not type approved. They are not allowed to connect to the network. EIR informs the VLR about the list, the particular IMEI is in.

Equipment Identity Register



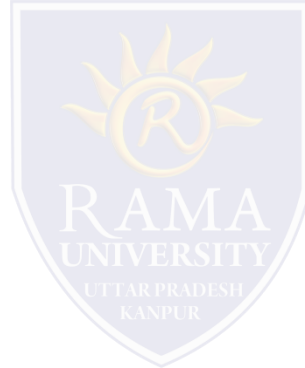
Authentication Centre

It is associated with an HLR. It stores an Identity key called Authentication key (Ki) for each Mobile subscriber. This key is used to generate the authentication triplets.

RAND (Random Number),

SRES (Signed Response) -To authenticate IMSI,

Kc (Cipher Key) - To cipher communication over the radio path between the MS and the network.



Operation and Maintenance Centre (OMC)

It is the functional entity through which the network operator can monitor and control the system by performing the following functions –

Software installation

Traffic management

Performance data analysis

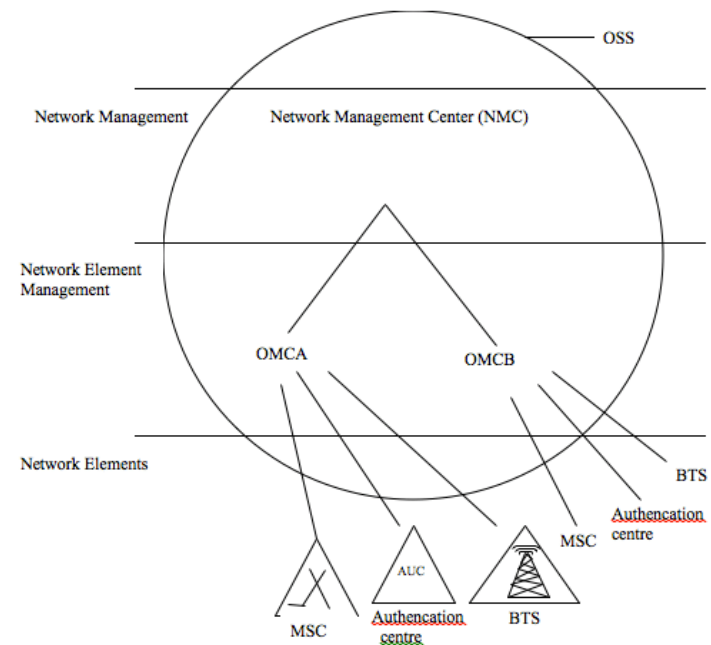
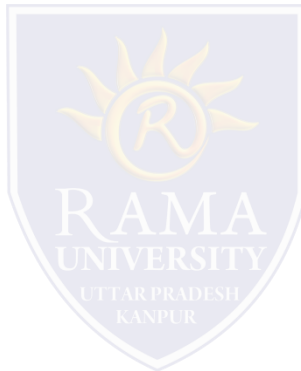
Tracing of subscribers and equipment

Configuration management

Subscriber administration

Management of mobile equipment

Management of charging and billing



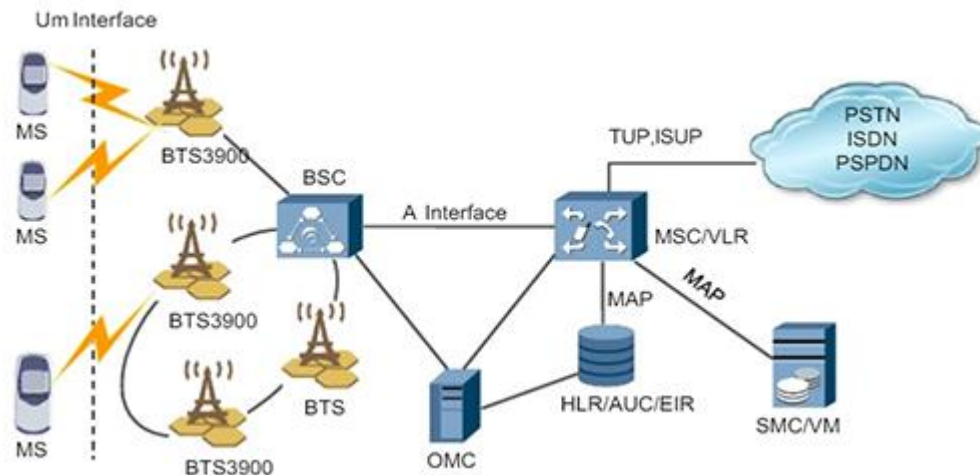
Base Station System (BSS)

BSS connects the MS and the NSS. It is composed of the following –

Base Transceiver Station (BTS) also called Base Station.

Base Station Controller (BSC).

BTS and BSC communicate across the standardized Abis interface. BTS is controlled by BSC and one BSC can have many BTS under its control.



NADC is a 2G standard for

- a. TDMA
- b. CDMA
- c. Both a & b
- d. None of the above

ANSWER: TDMA

17) 2G CDMA standard – cdma one supports up to

- a. 8 users
- b. 64 users
- c. 32 users
- d. 116 users

ANSWER: 64 users

18) 2G standards support

- a. Limited internet browsing
- b. Short Messaging Service
- c. Both a & b
- d. None of the above

ANSWER: Both a & b

19) The 2G GSM technology uses a carrier separation of

- a. 1.25 MHz
- b. 200 KHz
- c. 30 KHz
- d. 300 KHz

ANSWER: 200 KHz

20) 3G W-CDMA is also known as

- a. UMTS
- b. DECT
- c. DCS-1800
- d. ETACS

ANSWER: UMTS

