Architecture of the GSM system

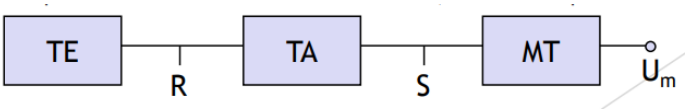
- GSM is a PLMN (Public Land Mobile Network)
- components
    - MS (mobile station)
    - BS (base station)
    - MSC (mobile switching center)
    - LR (location register)
- subsystems
    - RSS (radio subsystem): covers all radio aspects
    - NSS (network and switching subsystem): call forwarding, handover,switching
    - OSS (operation subsystem): management of the network

Radio SubSystem - comprises the cellular mobile network up to the switching centers

- **Components**
    - MS (Mobile Station) - comprises user equipment and software needed for communication with a mobile network
      (MS) = Mobile Equipment(ME) + Subscriber Identity Module (SIM)
      These mobile stations are connected to tower and that tower connected with BTS through TRX(transceiver which comprises transmitter and receiver)
    - BSS (Base Station Subsystem) - handles traffic and signalling between a mobile phone and the network switching subsystem.
        - BTS (Base Transceiver Station): comprises radio specific functions radio components including sender, receiver, antenna - if directed antennas are used one BTS can cover several cells
        - BSC(Base Station Controller): switching center for radio channels switching between BTSs, controlling BTSs, managing of network resources, mapping of radio channels (Um) onto terrestrial channels (A interface)
    - BSS = BSC + sum(BTS) + interconnection
- **Interfaces**
    - U interface – provides the interface to the network (TDMS, FDMA, etc.)
    - Abis - standardized, open interface with 16 kbit/s user channels
    - A - standardized, open interface with 64 kbit/s user channels

Mobile station

- Terminal for the use of GSM services
- A mobile station (MS) comprises several functional groups
    - MT (Mobile Terminal): offers common functions used by all services the MS offers
    - TA (Terminal Adapter): terminal adaptation, hides radio specific characteristics (TE connects via modem, Bluetooth, IrDA etc. to MT)
    - TE (Terminal Equipment): peripheral device of the MS, offers services to a user υ Can be a headset, microphone, etc.
    - SIM (Subscriber Identity Module): personalization of the mobile terminal, stores user parameters



GSM: elements and interfaces