LTE NUMBERING & ADDRESSING

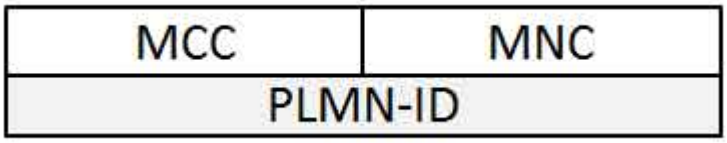
An LTE network area is divided into three different types of geographical areas explained below:

S.N.	Area and Description
1	**The MME pool areas** This is an area through which the mobile can move without a change of serving MME. Every MME pool area is controlled by one or more MMEs on the network.
2	**The S-GW service areas** This is an area served by one or more serving gateways S-GW, through which the mobile can move without a change of serving gateway.
3	**The Tracking areas** The MME pool areas and the S-GW service areas are both made from smaller, non-overlapping units known as tracking areas TAs. They are similar to the location and routing areas from UMTS and GSM and will be used to track the locations of mobiles that are on standby mode.

Thus an LTE network will comprise of many MME pool areas, many S-GW service areas and lots of tracking areas.

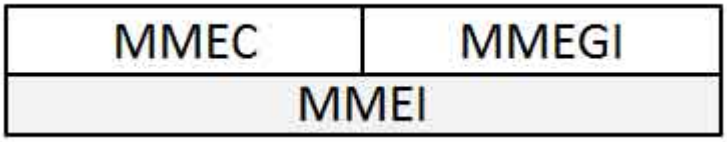
The Network IDs

The network itself will be identified using Public Land Mobile Network Identity $PLMN-ID$ which will have a three digit mobile country code MCC and a two or three digit mobile network code MNC. For example, the Mobile Country Code for the UK is 234, while Vodafone's UK network uses a Mobile Network Code of 15.

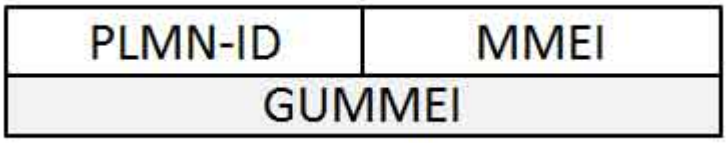


The MME IDs

Each MME has three main identities. An MME code $MMEC$ uniquely identifies the MME within all the pool areas. A group of MMEs is assigned an MME Group Identity $MMEGI$ which works along with MMEC to make MME identifier $MMEI$. A MMEI uniquely identifies the MME within a particular network.

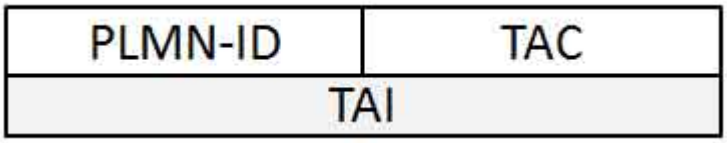


If we combile PLMN-ID with the MMEI then we arrive at a Globally Unique MME Identifier $GUMMEI$, which identifies an MME anywhere in the world:



The Tracking Area IDs

Each tracking area has two main identities. The tracking area code TAC identifies a tracking area within a particular network and if we combining this with the PLMN-ID then we arrive at a Globally Unique Tracking Area Identity TAI.



The Cell IDs

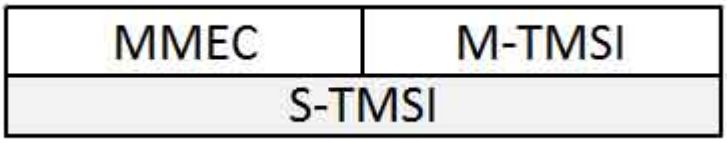
Each cell in the network has three types of identity. The E-UTRAN cell identity ECI identifies a cell within a particular network, while the E-UTRAN cell global identifier $ECGI$ identifies a cell anywhere in the world.

The physical cell identity, which is a number from 0 to 503 and it distinguishes a cell from its immediate neighbours.

The Mobile Equipment ID

The international mobile equipment identity $IMEI$ is a unique identity for the mobile equipment and the International Mobile Subscriber Identity $IMSI$ is a unique identity for the UICC and the USIM.

The M temporary mobile subscriber identity $M-TMSI$ identifies a mobile to its serving MME. Adding the MME code in M-TMSI results in a S temporary mobile subscriber identity $S-TMSI$, which identifies the mobile within an MME pool area.



Finally adding the MME group identity and the PLMN identity with S-TMSI results in the Globally Unique Temporary Identity $GUTI$.