

Network Selection

27.02.2011

4th week

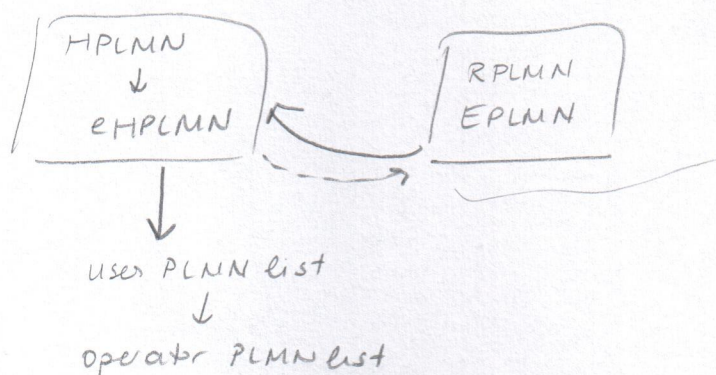
- choosing operator (PLMN)
- HPLMN info is in SIM (PLMN id of your IMSI)
 - ↳ eHPLMN
- RPLMN \equiv serving PLMN
 - ↳ EPLMN --- NAS signalling from MME.

ex $\frac{1}{2}$ ATT bought Singular and you're in US

RPLMN = ATT PLMN id

EPLMN = Singular

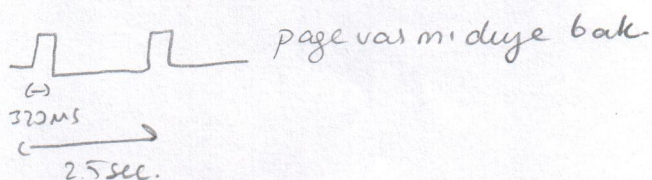
- Manual, Automatic
 - ↳ ararken hangi sırayla bakıcaksın.



2 sırayla da olabilir.

idle mode: UE is not actively communicating with the network.

- no DRB!
- no SRB!
- UE performs cell reselection
 - monitors power from eNB
 - reselects eNB if serving eNB power is low
- periodically listens for pages (when call comes to you, network pages you)



active mode: UE is communicating with the network.
has DRB, has SRB (MME - eNB)

Network Selection

- idle mode UE selects PLMN - listens broadcast of PLMN of new cell
(if he is in the same cell it has selected before, no need to select again)
- active mode: network selects PLMN for UE based on subscriber info
only EPLMN!

OFDM in LTE

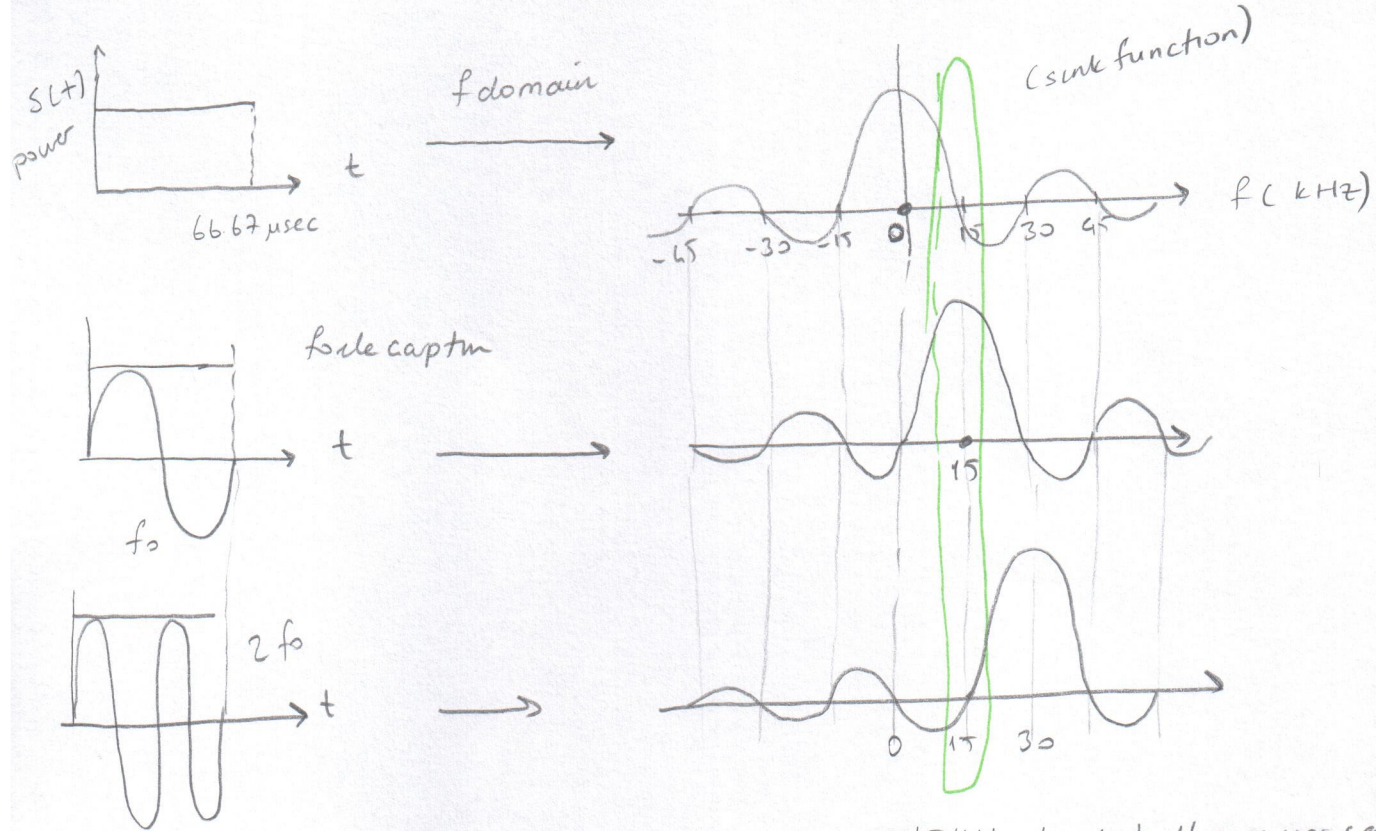
we choose multiples of same base freq.

- harmonic carriers : $f_0, 2f_0, 3f_0, \dots$

- Base frequency in LTE is 15 KHz $T = \frac{1}{15000} \text{ sec} = 66.67 \mu\text{sec}$.

- $x(t)$ & $y(t)$ are orthogonal if $\int_{-\infty}^{\infty} x(t) y(t) dt = 0$.

for periodic signals $\int_0^T x(t) y(t) dt = 0$

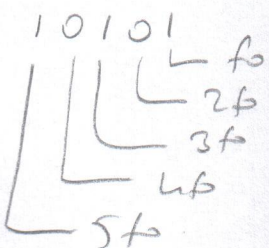


15 KHz de 1 kullanılabiliyor sadece!

multiplexing \rightarrow 1-0 ları nasıl ifade edicez

multiple access \rightarrow OFDMA baskı kısıtları aynı anda konulmamak.

15 KHz sadece bozulmaları tıkar görürsün, hepsi bozulmaz!



SFN: system frame number

Resource Block

12 subcarriers
 $\approx 180 \text{ kHz}$



$\leftarrow 7 \text{ symbols} = 0.5 \text{ ms}$

RB has 84 symbols