

**AS**: access stratum  $\Rightarrow$  Radio part  $\xleftrightarrow{\text{Kerberos}} \text{UE} \leftrightarrow \text{eNB}$

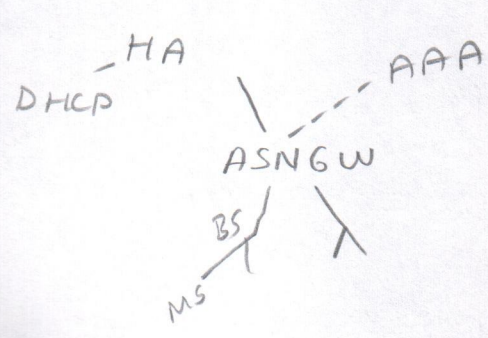
**NAS**: non-access stratum  $\Rightarrow \text{UE} \leftrightarrow \text{MME}$   
 { logical connection! }

$\alpha$  UE needs to get authenticated  $\rightarrow$  NAS message kapali olarok eNB ye gider, eNB onu MME / UE ye iletir.

$\alpha$  UE wants 5 Kb/s  $\rightarrow$  AS

Control plane MME --- } **SEPERATED ?** one of the architectural choice  
 user plane SGW --- }

wimax'te both control & user plane goes from ASNGW !





## Network Selection (in 3GPP terminology)

- operator selection: selection between Wi-Fi, 3G, WiMAX is RAT (radio access tech.)

2G-3G-4G selection is also RAT.

- operators operate on different frequency bands.

(if no network sharing)

3G'de mesela paylaşım olmaz. aynı BS, aynı frekans op no (PLMN) farklı yayınlar.

- network advertises PLMN id of operator.

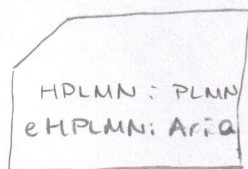
- SIMCARD has IMSI which contains your home PLMN ID.

- two operators can combine (buy each other--)

PLMN aycell }  
PLMN aria } PLMN AVEA



bu nedenle equivalent home PLMN var!



IMSİ de yer alan PLMN (aycell den alınmış simcard)

Azərbaycandakı oran operatoru: Aycell.

Roaming: you are a Turkcell subscriber roaming in Azerbaijan. (Aycell has roaming agreement with Turkcell)

registered PLMN!  $rPLMN = Aycell$

(Aycell, Azcell birleşmiş olsun)  $\rightarrow$  equivalent PLMN = Azcell!

equivalence here is  $rPLMN \equiv ePLMN$

$hPLMN$  Aycell-turkey  
 $eHPLMN$  Aria  
 $rPLMN$  Aycell  
 $ePLMN$  Azcell

switch off - on  $\rightarrow$  network selection!  
network selection modes  $\rightarrow$  manual  
 $\rightarrow$  automatic.