



M2M Group Authentication

China Mobile



Outline

- Group definition in SA1/SA2
- Group authentication necessity
- Group authentication scenario

Group definition in SA1/SA2

SA1:

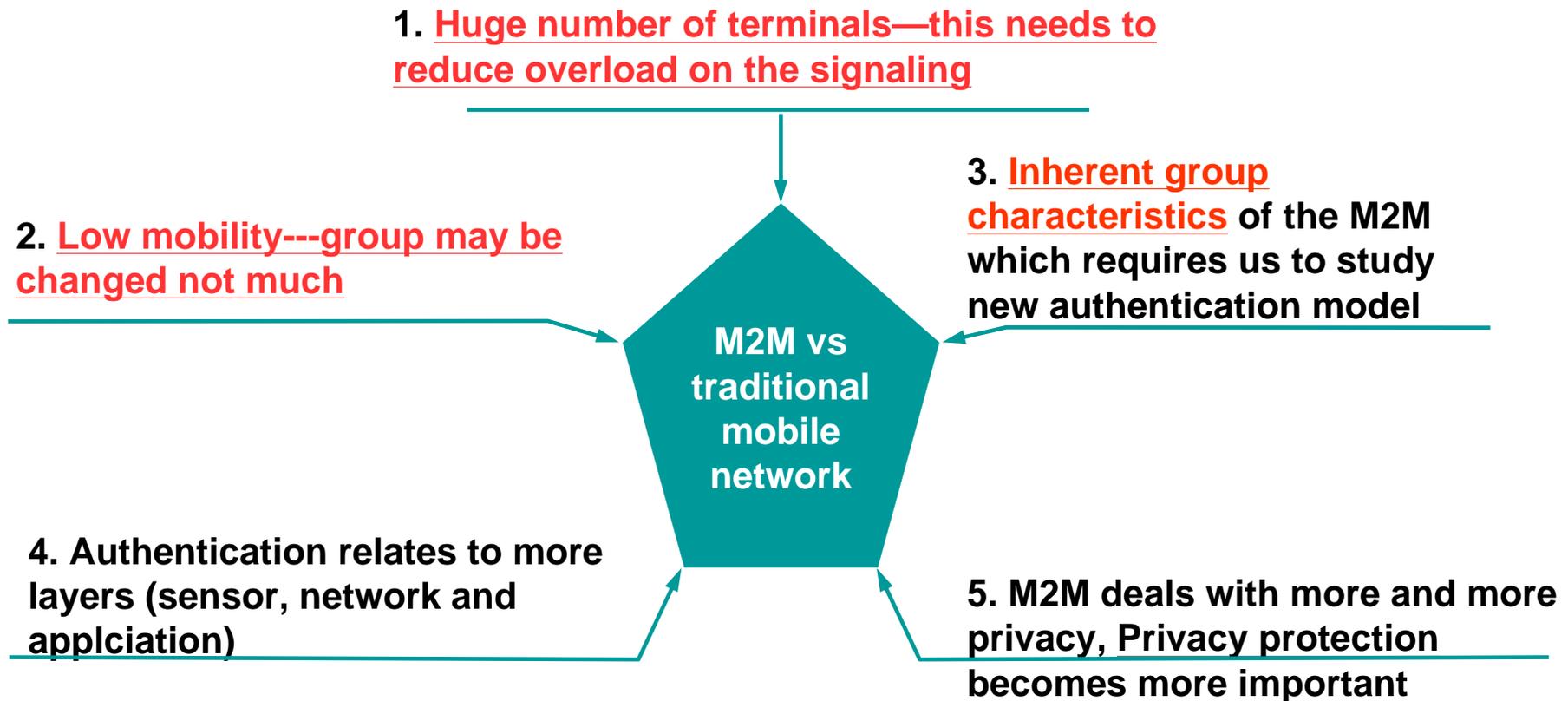
- The system shall be optimized to handle groups of MTC Devices
- One MTC Device shall only be associated with one group
- Each Group Based MTC Feature is applicable to the whole group of MTC Devices
- With Group Based MTC Features each MTC Device is visible from the 3GPP Network perspective

SA2:

- To meet the need of operators for the control, management or charging facilities etc.
- To provide easier mode to control/update/charge the MTC devices
- To decrease the redundant signaling to avoid congestion ;
- To save network resource

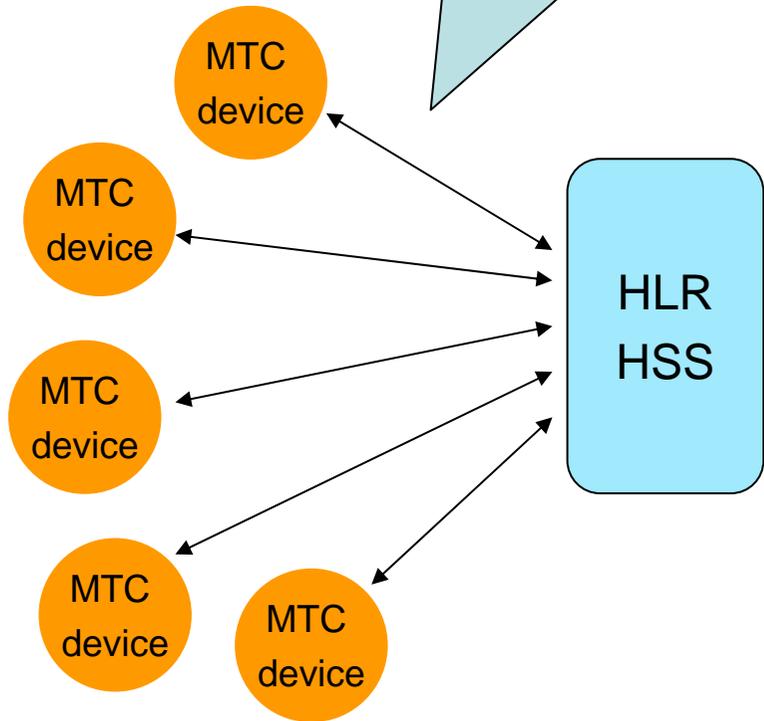
SA1 and SA2 has already group optimization requirement;
we need to elaborate the general security requirements for NIMTC
SA1's TS.

What is the distinct difference of M2M?

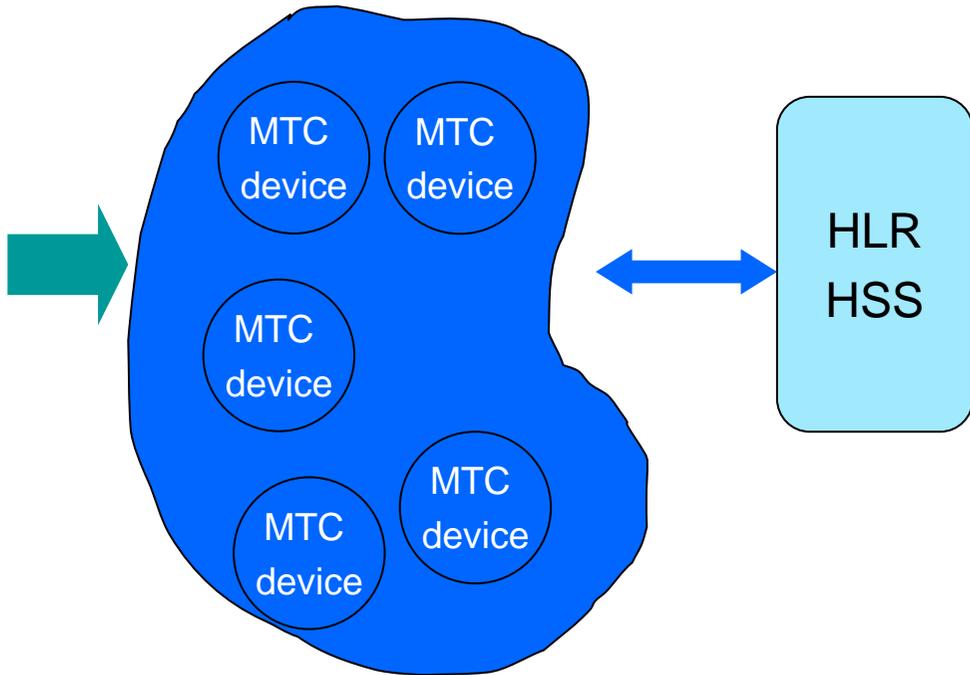


Group authentication v.s Normal authentication

Normal Authentication--each MTC device is authenticated by sever one by one

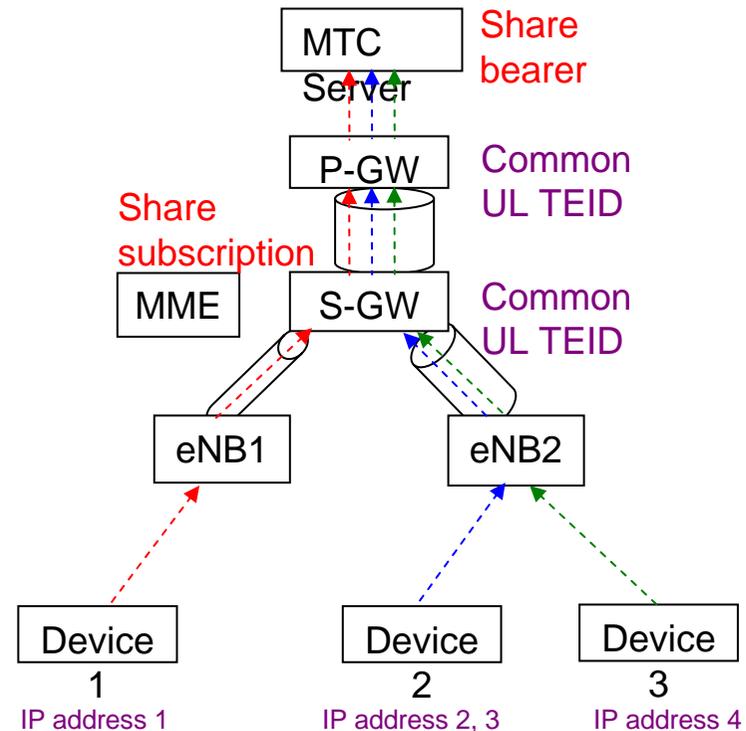


Group Authentication, in which the MTC devices in a group can be authenticated in the same time.

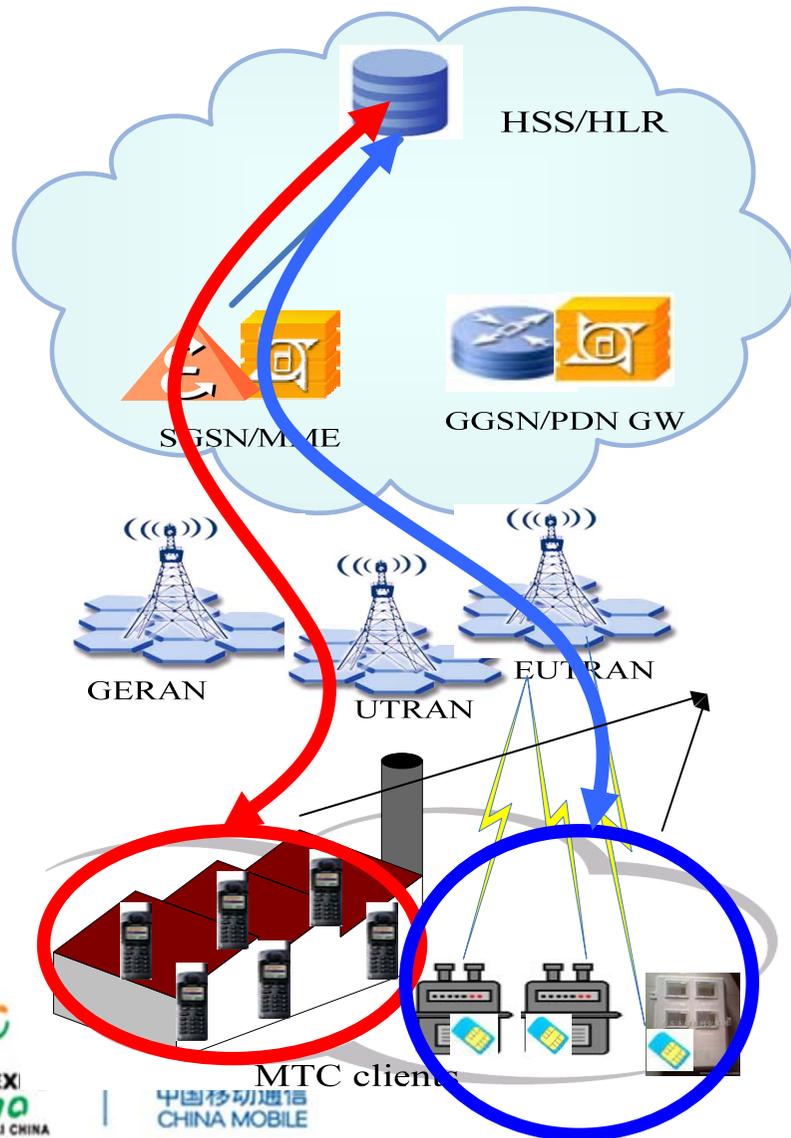


Why is group authentication necessary

- In the initial development stage, the MTC device number is not large
- But with the development, there will be large amount of terminals, which then cause the consideration on the system optimization as below
 - **To reduce management cost**
 - **To reduce network signaling and reduce performance impacts to avoid network congestion**
 - **To save network resource**



Group authentication scenario overview



Precondition

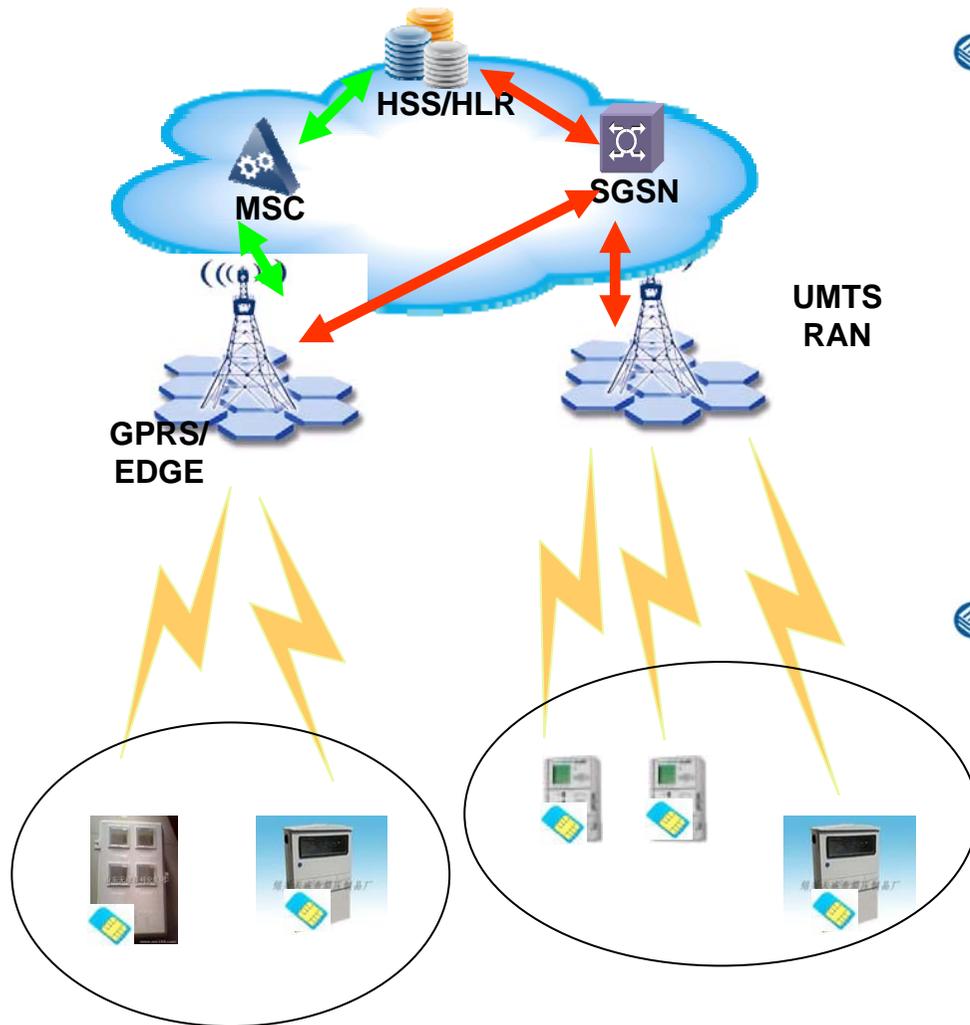
1. All MTC devices are visible for the network
2. A delegate of the group would exist in the group, which can do the mutual authentication with the network

So the conclusion is that you can see MTC devices in one group can be authenticated together

Group authentication consideration

1. Group authentication is optional, which depends on operator requirement
2. Security contexts after group authentication
 - ④ It is not a problem. It has way to deal with

Some M2M scenarios: ----Smart Metering



Scenario :

- Utility company deployed many smart utility meters to end users in broad area.
- These meters have the same characters such as recording numbering, cutting off power supply and so on.
- So the requirement is also that the mass smart meters should be accessed to the network simultaneously



Thank you!

