**3GPP TSG-CT WG1 Meeting #124-eC1-20aabb**

**Electronic meeting, 2-10 June 2020 was C1-203379**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.008** | **CR** | **3219** | **rev** | **1** | **Current version:** | **16.4.0** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:*** | Correction to handling of #3/#6/#8 | | | | | | | | | |
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| ***Source to WG:*** | MediaTek Inc. | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI16 | | | | |  | ***Date:*** | | | 2020-06-08 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | When attach/RAU procedure, network initiated detach procedure and service request have been rejected with cause #3, #6 and #8, it is mentioned only about GMM state UE shall move but it is not clear about sub state UE shall enter *4.7.3.1.4 GPRS attach not accepted by the network* *# 3 (Illegal MS);*  *# 6 (Illegal ME);*  *The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The new GMM state is GMM-DEREGISTERED. The SIM/USIM shall be considered as invalid for GPRS services until switching off or the SIM/USIM is removed or the timer T3245 expires as described in subclause 4.1.1.6. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.*  *# 8 (GPRS services and non-GPRS services not allowed);*  *The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The new GMM state is GMM-DEREGISTERED.*  *NOTE 2: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9.*  *The MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall abort the RR connection, unless an emergency call is ongoing. The SIM/USIM shall be considered as invalid for GPRS and non-GPRS services until switching off or the SIM/USIM is removed. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for non-GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.*  *If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the attach procedure is rejected with the EMM cause with the same value*.  When attach/RAU procedure, network initiated detach procedure and service request have been rejected with cause #3, #6 and #8, then SIM/USIM will be invalidated for GPRS services and UE should enter GMM-DEREGISTERED.NO-IMSI as per subclause 4.1.3.1.2.5.  *4.1.3.1.2.5 GMM-DEREGISTERED.NO-IMSI*  *No valid subscriber data is available (no SIM/USIM, or the SIM/USIM is not considered valid by the ME) and a cell has been selected.* | | | | | | | | |
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| ***Summary of change:*** | | When attach/RAU procedure, network initiated detach procedure and service request have been rejected with cause #3, #6 and #8, then UE shall enter GMM-DEREGISTERED.NO-IMSI state. | | | | | | | | |
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| ***Consequences if not approved:*** | | 1.GMM substates is not clearly mentioned in current specification  2.Unclear specification may lead UE’s setting different GMM substate. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.7.3.1.4, 4.7.3.2.4, 4.7.4.2.2, 4.7.5.1.4, 4.7.5.2.4, 4.7.13.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev#2:  No changes to cause#7, title updated. | | | | | | | | |

##### 4.7.3.1.4 GPRS attach not accepted by the network

If the attach request cannot be accepted by the network, an ATTACH REJECT message is transferred to the MS. The MS receiving the ATTACH REJECT message containing a reject cause other than GMM cause value #25 or the message is integrity protected, shall stop the timer T3310 and for all causes except #7, #12, #14, #15, #22 and #25 deletes the list of "equivalent PLMNs".

If the ATTACH REJECT message containing GMM cause value cause #25 was received without integrity protection, then the MS shall discard the message.

If the attach request is rejected due to NAS level mobility management congestion control, the network shall set the GMM cause value to #22 "congestion" and assign a back-off timer T3346.

The MS shall then take one of the following actions depending upon the reject cause:

# 3 (Illegal MS);

# 6 (Illegal ME);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The new GMM state is GMM-DEREGISTERED.NO-IMSI. The SIM/USIM shall be considered as invalid for GPRS services until switching off or the SIM/USIM is removed or the timer T3245 expires as described in subclause 4.1.1.6. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

If the MS is IMSI attached, the MS shall in addition set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall abort the RR connection, unless an emergency call is ongoing. The SIM/USIM shall be considered as invalid also for non-GPRS services until switching off or the SIM/USIM is removed. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for non-GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the attach procedure is rejected with the EMM cause with the same value.

# 7 (GPRS services not allowed);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The SIM/USIM shall be considered as invalid for GPRS services until switching off or the SIM/USIM is removed. The new state is GMM-DEREGISTERED. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

NOTE 1: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the attach procedure is rejected with the EMM cause with the same value.

# 8 (GPRS services and non-GPRS services not allowed);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The new GMM state is GMM-DEREGISTERED.NO-IMSI.

NOTE 2: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9.

The MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall abort the RR connection, unless an emergency call is ongoing. The SIM/USIM shall be considered as invalid for GPRS and non-GPRS services until switching off or the SIM/USIM is removed. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for non-GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the attach procedure is rejected with the EMM cause with the same value.

# 11 (PLMN not allowed);

The MS shall delete any RAI, P-TMSI, P-TMSI signature, and GPRS ciphering key sequence number stored, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2), shall reset the GPRS attach attempt counter and shall change to state GMM-DEREGISTERED.

The MS shall store the PLMN identity in the "forbidden PLMN list" and if the MS is configured to use timer T3245 (see 3GPP TS 24.368 [135] or 3GPP TS 31.102 [112]) then the MS shall start timer T3245 and proceed as described in subclause 4.1.1.6. If the message has been successfully integrity checked by the lower layers and the MS maintains a PLMN-specific attempt counter for that PLMN, then the MS shall set this counter to the MS implementation-specific maximum value.

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

An MS in GAN mode shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when attach procedure is rejected with the EMM cause with the same value.

# 12 (Location area not allowed);

The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to clause 4.1.3.2) and shall reset the GPRS attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE.

The mobile station shall store the LAI in the list of "forbidden location areas for regional provision of service".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall perform a cell selection according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

NOTE 3: The cell selection procedure is not applicable for an MS in GAN mode.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the attach procedure is rejected with the EMM cause with the same value.

# 13 (Roaming not allowed in this location area);

The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to clause 4.1.3.2) and shall reset the GPRS attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE or optionally to GMM-DEREGISTERED.PLMN-SEARCH.

The MS shall store the LAI in the list of "forbidden location areas for roaming".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

An MS in GAN mode shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the attach procedure is rejected with the EMM cause with the same value.

# 14 (GPRS services not allowed in this PLMN);

The MS shall delete any RAI, P-TMSI, P-TMSI signature, and GPRS ciphering key sequence number stored, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) , shall reset the GPRS attach attempt counter and shall change to state GMM-DEREGISTERED.

The MS shall store the PLMN identity in the "forbidden PLMNs for GPRS service" list and if the MS is configured to use timer T3245 (see 3GPP TS 24.368 [135] or 3GPP TS 31.102 [112]) then the MS shall start timer T3245 and proceed as described in subclause 4.1.1.6. A GPRS MS operating in MS operation mode C shall perform a PLMN selection instead of a cell selection. If the message has been successfully integrity checked by the lower layers and the MS maintains a PLMN-specific PS-attempt counter for that PLMN, then the MS shall set this counter to the MS implementation-specific maximum value.

A GPRS MS operating in MS operation mode A or B in network operation mode II, is still IMSI attached for CS services in the network.

As an implementation option, a GPRS MS operating in operation mode A or B may perform the following additional action. If no RR connection exists the MS may perform the action immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS may only perform the action when the RR connection is subsequently released:

- The MS may perform a PLMN selection according to 3GPP TS 23.122 [14].

If an MS in GAN mode performs a PLMN selection, it shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

The MS shall not perform the optional PLMN selection in the case where the PLMN providing this reject cause is:

- On the "User Controlled PLMN Selector with Access Technology" list;

- On the "Operator Controlled PLMN Selector with Access Technology" list;

- On the "PLMN Selector" list for an MS using a SIM/USIM without access technology information storage (i.e. the "User Controlled PLMN Selector with Access Technology" and the "Operator Controlled PLMN Selector with Access Technology" data files are not present); or

- A PLMN identified as equivalent to any PLMN, within the same country, contained in the lists above.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the attach procedure is rejected with the EMM cause with the same value.

# 15 (No Suitable Cells In Location Area);

The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED(and shall store it according to clause 4.1.3.2) and shall reset the GPRS attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE.

The MS shall store the LAI in the list of "forbidden location areas for roaming".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall search for a suitable cell in another location area or a tracking area according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98] or 3GPP TS 36.304 [121].

NOTE 4: The cell selection procedure is not applicable for an MS in GAN mode.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the attach procedure is rejected with the EMM cause with the same value.

# 22 (Congestion);

If the T3346 value IE is present in the ATTACH REJECT message and the value indicates that this timer is neither zero nor deactivated, the MS shall proceed as described below, otherwise it shall be considered as an abnormal case and the behaviour of the MS for this case is specified in subclause 4.7.3.1.5.

The MS shall abort the attach procedure, reset the GPRS attach attempt counter, set the GPRS update status to GU2 NOT UPDATED and enter state GMM-DEREGISTERED.ATTEMPTING-TO-ATTACH.

The MS shall stop timer T3346 if it is running.

If the ATTACH REJECT message is integrity protected, the MS shall start timer T3346 with the value provided in the T3346 value IE.

If the ATTACH REJECT message is not integrity protected, the MS shall start timer T3346 with a random value from the default range specified in table 11.3a.

The MS stays in the current serving cell and applies the normal cell reselection process. The attach procedure is started if still needed when timer T3346 expires or is stopped.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the attach procedure is rejected with the EMM cause with the same value.

# 25 (Not authorized for this CSG);

Cause #25 is only applicable in UTRAN Iu mode and when received from a CSG cell. Other cases are considered as abnormal cases and the specification of the mobile station behaviour is given in subclause 4.7.3.1.5.

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2), reset the GPRS attach attempt counter and enter the state GMM-DEREGISTERED.LIMITED-SERVICE.

If the CSG ID and associated PLMN identity of the cell where the MS has sent the ATTACH REQUEST message are contained in the Allowed CSG list stored in the MS, the MS shall remove the entry corresponding to this CSG ID and associated PLMN identity from the Allowed CSG list.

If the CSG ID and associated PLMN identity of the cell where the MS has sent the ATTACH REQUEST message are contained in the Operator CSG list stored in the MS, the MS shall proceed as specified in 3GPP TS 23.122 [14] subclause 3.1A.

The MS shall start timer T3340 as described in subclause 4.7.1.9.

The MS shall search for a suitable cell according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the attach procedure is rejected with the EMM cause with the same value.

Other values are considered as abnormal cases. The specification of the MS behaviour in those cases is specified in subclause 4.7.3.1.5.

\* \* \* Next Change \* \* \* \*

##### 4.7.3.2.4 Combined GPRS attach not accepted by the network

If the attach request can neither be accepted by the network for GPRS nor for non-GPRS services, an ATTACH REJECT message is transferred to the MS. The MS receiving the ATTACH REJECT message containing a reject cause other than GMM cause value #25 or the message is integrity protected, shall stop the timer T3310, and for all causes except #7, #12, #14, #15, #22 and #25 deletes the list of "equivalent PLMNs".

If the ATTACH REJECT message containing GMM cause value #25 was received without integrity protection, then the MS shall discard the message.

If the attach request is rejected due to NAS level mobility management congestion control, the network shall set the GMM cause value to #22 "congestion" and assign a back-off timer T3346.

The MS shall then take one of the following actions depending upon the reject cause:

# 3 (Illegal MS);

# 6 (Illegal ME), or

# 8 (GPRS services and non-GPRS services not allowed);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The new GMM state is GMM-DEREGISTERED.NO-IMSI. The new MM state is MM IDLE.

The MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. The SIM/USIM shall be considered as invalid for GPRS and non-GPRS services until switching off or the SIM/USIM is removed or the timer T3245 expires as described in subclause 4.1.1.6.

If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for non-GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

NOTE 1: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9 for reject cause #8

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the combined attach procedure is rejected with the EMM cause with the same value.

# 7 (GPRS services not allowed);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The SIM/USIM shall be considered as invalid for GPRS services until switching off or the SIM/USIM is removed. The new GMM state is GMM-DEREGISTERED; the MM state is MM IDLE.

If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

NOTE 2: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9.

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services in the network is still IMSI attached for CS services in the network.

A GPRS MS operating in MS operation mode A or B shall proceed with the appropriate MM specific procedure according to the MM service state.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the combined attach procedure is rejected with the EMM cause with the same value.

# 11 (PLMN not allowed);

The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number stored, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2), shall reset the GPRS attach attempt counter and changes to state GMM-DEREGISTERED.

The MS shall set the update status to U3 ROAMING NOT ALLOWED, reset the location update attempt counter and shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM IDLE.

The MS shall store the PLMN identity in the "forbidden PLMN list" and if the MS is configured to use timer T3245 (see 3GPP TS 24.368 [135] or 3GPP TS 31.102 [112]) then the MS shall start timer T3245 and proceed as described in subclause 4.1.1.6. If the message has been successfully integrity checked by the lower layers and the MS maintains a PLMN-specific attempt counter for that PLMN, then the MS shall set this counter to the MS implementation-specific maximum value.

The MS shall start timer T3340 as described in subclause 4.7.1.9.

The MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

An MS in GAN mode shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the combined attach procedure is rejected with the EMM cause with the same value.

# 12 (Location area not allowed);

The MS shall delete any RAI, P-TMSI, P-TMSI signature GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED(and shall store it according to clause 4.1.3.2) and shall reset the GPRS attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE.

The MS shall set the update status to U3 ROAMING NOT ALLOWED, reset the location update attempt counter and shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM IDLE.

The MS shall store the LAI in the list of "forbidden location areas for regional provision of service".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

The MS shall perform a cell selection according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

NOTE 3: The cell selection procedure is not applicable for an MS in GAN mode.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the combined attach procedure is rejected with the EMM cause with the same value.

# 13 (Roaming not allowed in this location area);

The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED(and shall store it according to clause 4.1.3.2) and shall reset the GPRS attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE or optionally to GMM-DEREGISTERED.PLMN-SEARCH.

The MS shall set the update status to U3 ROAMING NOT ALLOWED, reset the location update attempt counter and shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM IDLE.

The mobile station shall store the LAI in the list of "forbidden location areas for roaming".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

The MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

An MS in GAN mode shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the combined attach procedure is rejected with the EMM cause with the same value.

# 14 (GPRS services not allowed in this PLMN);

The MS shall delete any RAI, P-TMSI, P-TMSI signature, and GPRS ciphering key sequence number stored, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2), shall reset the GPRS attach attempt counter and shall change to state GMM-DEREGISTERED.

The MS shall store the PLMN identity in the "forbidden PLMNs for GPRS service" list and if the MS is configured to use timer T3245 (see 3GPP TS 24.368 [135] or 3GPP TS 31.102 [112]) then the MS shall start timer T3245 and proceed as described in subclause 4.1.1.6. If the message has been successfully integrity checked by the lower layers and the MS maintains a PLMN-specific PS-attempt counter for that PLMN, then the MS shall set this counter to the MS implementation-specific maximum value.

As an implementation option, a GPRS MS operating in operation mode A or B may perform a PLMN selection according to 3GPP TS 23.122 [14].

If an MS in GAN mode performs a PLMN selection, it shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

The MS shall not perform the optional PLMN selection in the case where the PLMN providing this reject cause is:

- On the "User Controlled PLMN Selector with Access Technology";

- On the "Operator Controlled PLMN Selector with Access Technology" list;

- On the "PLMN Selector" list for an MS using a SIM/USIM without access technology information storage (i.e. the "User Controlled PLMN Selector with Access Technology" and the "Operator Controlled PLMN Selector with Access Technology" data files are not present); or

- A PLMN identified as equivalent to any PLMN, within the same country, contained in the lists above.

If the MS does not perform a PLMN selection then a GPRS MS operating in MS operation mode A or B which is not yet IMSI attached for CS services in the network shall then perform an IMSI attach for non-GPRS services according to the conditions for the MM IMSI attach procedure (see subclause 4.4.3).

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services in the network is still IMSI attached for CS services in the network.

A GPRS MS operating in MS operation mode A or B shall proceed with the appropriate MM specific procedure according to the MM service state.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the combined attach procedure is rejected with the EMM cause with the same value.

# 15 (No Suitable Cells In Location Area);

The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED(and shall store it according to clause 4.1.3.2) and shall reset the GPRS attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE.

The MS shall set the update status to U3 ROAMING NOT ALLOWED, reset the location update attempt counter and shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM IDLE.

The MS shall store the LAI in the list of "forbidden location areas for roaming".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

The MS shall search for a suitable cell in another location area or a tracking area according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98] or 3GPP TS 36.304 [121].

NOTE 4: The cell selection procedure is not applicable for an MS in GAN mode.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the combined attach procedure is rejected with the EMM cause with the same value.

# 22 (Congestion);

If the T3346 value IE is present in the ATTACH REJECT message and the value indicates that this timer is neither zero nor deactivated, the MS shall proceed as described below, otherwise it shall be considered as an abnormal case and the behaviour of the MS for this case is specified in subclause 4.7.3.1.5.

The MS shall abort the attach procedure, reset the GPRS attach attempt counter, set the GPRS update status to GU2 NOT UPDATED and enter state GMM-DEREGISTERED.ATTEMPTING-TO-ATTACH.

The MS shall stop timer T3346 if it is running.

If the ATTACH REJECT message is integrity protected, the MS shall start timer T3346 with the value provided in the T3346 value IE.

If the ATTACH REJECT message is not integrity protected, the MS shall start timer T3346 with a random value from the default range specified in table 11.3a.

The MS stays in the current serving cell and applies the normal cell reselection process. The attach procedure is started, if still necessary, when timer T3346 expires or is stopped.

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services in the network is still IMSI attached for CS services in the network.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the attach procedure is rejected with the EMM cause with the same value.

# 25 (Not authorized for this CSG)

Cause #25 is only applicable in UTRAN Iu mode and when received from a CSG cell. Other cases are considered as abnormal cases and the specification of the mobile station behaviour is given in subclause 4.7.3.2.5.

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall reset the GPRS attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE.

If the CSG ID and associated PLMN identity of the cell where the MS has sent the ATTACH REQUEST message are contained in the Allowed CSG list stored in the MS, the MS shall remove the entry corresponding to this CSG ID and associated PLMN identity from the Allowed CSG list.

If the CSG ID and associated PLMN identity of the cell where the MS has sent the ATTACH REQUEST message are contained in the Operator CSG list, the MS shall proceed as specified in 3GPP TS 23.122 [14] subclause 3.1A.

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If the MS is IMSI attached for non-GPRS services, the MS shall set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

The MS shall search for a suitable cell according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when the combined attach procedure is rejected with the EMM cause with the same value.

Other values are considered as abnormal cases. The specification of the MS behaviour in those cases is specified in subclause 4.7.3.2.5.

\* \* \* Next Change \* \* \* \*

##### 4.7.4.2.2 Network initiated GPRS detach procedure completion by the MS

When receiving the DETACH REQUEST message and the detach type indicates "re-attach required", the MS shall deactivate the PDP context(s), the MBMS context(s) and deactivate the logical link(s), if any. The MS shall stop the timer T3346, if it is running. The MS shall also stop timer(s) T3396, if it is running. The MS shall send a DETACH ACCEPT message to the network and shall enter the state GMM-DEREGISTERED. The MS shall, after the completion of the GPRS detach procedure, initiate a GPRS attach procedure. The MS should also activate PDP context(s) that were originally activated by the MS to replace any previously MS activated PDP context(s). The MS should also perform the procedures needed in order to activate any previously active multicast service(s).

NOTE 1: When the detach type indicates "re-attach required", user interaction is necessary in some cases when the MS cannot re-activate the PDP/MBMS context(s) automatically.

A GPRS MS operating in MS operation mode A or B in network operation mode I, which receives an DETACH REQUEST message with detach type indicating "re-attach required" or "re-attach not required" and no cause code, is only detached for GPRS services in the network.

When receiving the DETACH REQUEST message and the detach type IE indicates "IMSI detach", the MS shall not deactivate the PDP/MBMS contexts. The MS shall set the MM update status to U2 NOT UPDATED. An MS in operation mode A or B in network operation mode I may send a DETACH ACCEPT message to the network, and shall re-attach to non-GPRS service by performing the combined routing area updating procedure according to subclause 4.7.5.2, sending a ROUTING AREA UPDATE REQUEST message with Update type IE indicating "combined RA/LA updating with IMSI attach". An MS in operation mode A that is in an ongoing circuit-switched transaction shall initiate the combined routing area updating after the circuit-switched transaction has been released. An MS in operation mode C, or in MS operation mode A or B in network operation mode II, shall send a DETACH ACCEPT message to the network.

If the detach type IE indicates "IMSI detach", or "re-attach required" then the MS shall ignore the cause code if received.

If the MS is attached for GPRS and non-GPRS services and the network operates in network operation mode I, then if in the MS the timer T3212 is not already running, the timer T3212 shall be set to its initial value and restarted if:

- the detach type IE indicates "re-attach required"; or

- the detach type IE indicates "re-attach not required" and no cause code is included.

When receiving the DETACH REQUEST message and the detach type IE indicates "re-attach not required" and no cause code, or "re-attach not required" and the cause code is not #2 "IMSI unknown in HLR", the MS shall deactivate the PDP contexts, the MBMS contexts and deactivate the logical link(s), if any. The MS shall then send a DETACH ACCEPT message to the network and shall change state to GMM-DEREGISTERED.

If the detach type IE indicates "re-attach not required" and no cause code is included,

- the MS shall set the GPRS update status to GU2 NOT UPDATED, delete the GMM parameters P-TMSI, P-TMSI signature, RAI, and GPRS ciphering key sequence number, and start timer T3302. If the MS is operating in MS operation mode C, it may enter the state GMM-DEREGISTERED.PLMN-SEARCH in order to perform a PLMN selection according to 3GPP TS 23.122 [6]; otherwise the MS shall enter the state GMM-DEREGISTERED.ATTEMPTING-TO-ATTACH; and

- if S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI, as specified in 3GPP TS 24.301 [120] for the case when a DETACH REQUEST is received with the no EMM cause included and with detach type set to "re-attach not required".

If the detach type IE indicates "re-attach not required" and a cause code is included, then, depending on the received cause code, the MS shall act as follows:

# 2 (IMSI unknown in HLR);

The MS shall set the update status to U3 ROAMING NOT ALLOWED and shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM IDLE. The SIM/USIM shall be considered as invalid for non-GPRS services until switching off or the SIM/USIM is removed. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for non-GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

A GPRS MS operating in MS operation mode A or B in network operation mode I, is still IMSI attached for GPRS services in the network.

# 3 (Illegal MS);

# 6 (Illegal ME);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The MS shall delete the list of equivalent PLMNs. The new GMM state is GMM-DEREGISTERED.NO-IMSI. The SIM/USIM shall be considered as invalid for GPRS services until switching off or the SIM/USIM is removed. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

A GPRS MS operating in MS operation mode A or B shall in addition set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall abort the RR connection, unless an emergency call is ongoing. The SIM/USIM shall be considered as invalid also for non-GPRS services until switching off or the SIM/USIM is removed. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for non-GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when a DETACH REQUEST is received with the EMM cause with the same value and with detach type set to "re-attach not required".

NOTE 2: The possibility to configure an MS so that the radio transceiver for a specific radio access technology is not active, although it is implemented in the MS, is out of scope of the present specification.

# 7 (GPRS services not allowed);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The SIM/USIM shall be considered as invalid for GPRS services until switching off or the SIM/USIM is removed. The new state is GMM-DEREGISTERED. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services is still IMSI attached for CS services in the network.

A GPRS MS operating in MS operation mode A or B in network operation mode I shall then proceed with the appropriate MM specific procedure.

NOTE 3: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when a DETACH REQUEST is received with the EMM cause with the same value and with detach type set to "re-attach not required".

# 8 (GPRS services and non-GPRS services not allowed);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The MS shall delete the list of equivalent PLMNs. The new GMM state is GMM-DEREGISTERED.NO-IMSI.

The MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall abort the RR connection, unless an emergency call is ongoing. The SIM/USIM shall be considered as invalid for GPRS and non-GPRS services until switching off or the SIM/USIM is removed. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for non-GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

NOTE 4: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when a DETACH REQUEST is received with the EMM cause with the same value and with detach type set to "re-attach not required".

# 11 (PLMN not allowed);

The MS shall delete any RAI or LAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall reset the GPRS attach attempt counter. The MS shall delete the list of equivalent PLMNs. The new GMM state is GMM-DEREGISTERED.

The MS shall store the PLMN identity in the "forbidden PLMN list" and if the MS is configured to use timer T3245 (see 3GPP TS 24.368 [135] or 3GPP TS 31.102 [112]) then the MS shall start timer T3245 and proceed as described in subclause 4.1.1.6. If the message has been successfully integrity checked by the lower layers and the MS maintains a PLMN-specific attempt counter for that PLMN, then the MS shall set this counter to the MS implementation-specific maximum value.

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- A GPRS MS operating in MS operation mode A or B shall set the update status to U3 ROAMING NOT ALLOWED and shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM IDLE.

- The MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

An MS in GAN mode shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when a DETACH REQUEST is received with the EMM cause with the same value and with detach type set to "re-attach not required".

# 12 (Location area not allowed);

The MS shall delete any RAI, P-TMSI, P-TMSI signature GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED(and shall store it according to clause 4.1.3.2) and shall reset the GPRS attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE.

The MS shall store the LAI in the list of "forbidden location areas for regional provision of service".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall perform a cell selection according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

NOTE 5: The cell selection procedure is not applicable for an MS in GAN mode.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when a DETACH REQUEST is received with the EMM cause with the same value and with detach type set to "re-attach not required".

# 13 (Roaming not allowed in this location area);

The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to clause 4.1.3.2) and shall reset the GPRS attach attempt counter. The MS shall delete the list of equivalent PLMNs. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE or optionally to GMM-DEREGISTERED.PLMN-SEARCH.

The MS shall store the LAI in the list of "forbidden location areas for roaming".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

An MS in GAN mode shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when a DETACH REQUEST is received with the EMM cause with the same value and with detach type set to "re-attach not required".

# 14 (GPRS services not allowed in this PLMN);

The MS shall delete any RAI, P-TMSI, P-TMSI signature, and GPRS ciphering key sequence number stored, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2), shall reset the GPRS attach attempt counter and shall change to state GMM-DEREGISTERED.

The MS shall store the PLMN identity in the "forbidden PLMNs for GPRS service" list and if the MS is configured to use timer T3245 (see 3GPP TS 24.368 [135] or 3GPP TS 31.102 [112]) then the MS shall start timer T3245 and proceed as described in subclause 4.1.1.6. If the message has been successfully integrity checked by the lower layers and the MS maintains a PLMN-specific PS-attempt counter for that PLMN, then the MS shall set this counter to the MS implementation-specific maximum value.

A GPRS MS operating in MS operation mode C shall delete the list of equivalent PLMNs and perform a PLMN selection according to 3GPP TS 23.122 [14].

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services is still IMSI attached for CS services in the network.

A GPRS MS operating in MS operation mode A or B in network operation mode I shall then proceed with the appropriate MM specific procedure.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when a DETACH REQUEST is received with the EMM cause with the same value and with detach type set to "re-attach not required".

# 15 (No Suitable Cells In Location Area);

The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED(and shall store it according to clause 4.1.3.2) and shall reset the GPRS attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE.

The MS shall store the LAI in the list of "forbidden location areas for roaming".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall search for a suitable cell in another location area or a tracking area according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98] or 3GPP TS 36.304 [121].

NOTE 6: The cell selection procedure is not applicable for an MS in GAN mode.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state and EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when a DETACH REQUEST is received with the EMM cause with the same value and with detach type set to "re-attach not required".

# 25 (Not authorized for this CSG)

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and store it according to subclause 4.1.3.2) and shall reset the GPRS attach attempt counter. The state is changed to GMM-DEREGISTERED.LIMITED-SERVICE.

If the cell where the MS has received the DETACH REQUEST message is a CSG cell and the CSG ID and associated PLMN identity of the cell are contained in the Allowed CSG list stored in the MS, the MS shall remove the CSG ID and associated PLMN identity from the Allowed CSG list.

If the cell where the MS has received the DETACH REQUEST message is a CSG cell and the CSG ID and associated PLMN identity of the cell are contained in the Operator CSG list, the MS shall proceed as specified in 3GPP TS 23.122 [14] subclause 3.1A.

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If the MS is IMSI attached for non-GPRS services, the MS shall set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

The MS shall search for a suitable cell according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state and EPS update status, GUTI, last visited registered TAI, TAI list, KSI and attach attempt counter as specified in 3GPP TS 24.301 [120] for the case when a DETACH REQUEST is received with the EMM cause with the same value and with detach type set to "re-attach not required".

NOTE 7: CSG is applicable only for UMTS.

Other cause values shall not impact the update status. Further actions of the MS are implementation dependent.

\* \* \* Next Change \* \* \* \*

##### 4.7.5.1.4 Normal and periodic routing area updating procedure not accepted by the network

If the routing area updating cannot be accepted, the network sends a ROUTING AREA UPDATE REJECT message to the MS. An MS, which receives a ROUTING AREA UPDATE REJECT message with a reject cause other than GMM cause value #25 or the message is integrity protected, shall stop the timer T3330. If a ROUTING AREA UPDATE REJECT message containing a reject cause other than GMM cause value #25 is received or the message is integrity protected, the MS shall stop any ongoing transmission of user data.

If the ROUTING AREA UPDATE REJECT message containing GMM cause value cause #25 was received without integrity protection, then the MS shall discard the message.

If the routing area update request is rejected due to general NAS level mobility management congestion control, the network shall set the GMM cause value to #22 "congestion" and assign a back-off timer T3346.

The MS shall then take different actions depending on the received reject cause value:

# 3 (Illegal MS);

# 6 (Illegal ME);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The MS shall consider the SIM/USIM as invalid for GPRS services until switching off or the SIM/USIM is removed. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value. The MS shall delete the list of equivalent PLMNs, and shall enter the state GMM-DEREGISTERED.NO-IMSI.

If the MS is IMSI attached, the MS shall in addition set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall abort the RR connection, unless an emergency call is ongoing. The SIM/USIM shall be considered as invalid also for non-GPRS services until switching off or the SIM/USIM is removed or the timer T3245 expires as described in subclause 4.1.1.6. If the MS maintains a counter for "SIM/USIM considered invalid for non-GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the tracking area update procedure is rejected with the EMM cause with the same value.

NOTE 1: The possibility to configure a MS so that the radio transceiver for a specific radio access technology is not active, although it is implemented in the MS, is out of scope of the present specification.

# 7 (GPRS services not allowed);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2.9) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The SIM/USIM shall be considered as invalid for GPRS services until switching off or the SIM/USIM is removed. The MS shall enter the state GMM-DEREGISTERED. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services in the network is still IMSI attached for CS services in the network.

If the update type is "periodic updating", a GPRS MS operating in MS operation mode A or B in network operation mode I shall then proceed with the appropriate MM specific procedure.

NOTE 2: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the tracking area update procedure is rejected with the EMM cause with the same value.

# 8 (GPRS services and non-GPRS services not allowed);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The MS shall delete the list of equivalent PLMNs, and shall enter the GMM state GMM-DEREGISTERED.NO-IMSI.

The MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall abort the RR connection, unless an emergency call is ongoing. The SIM/USIM shall be considered as invalid for GPRS and non-GPRS services until switching off or the SIM/USIM is removed. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for non-GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

NOTE 3: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the tracking area procedure is rejected with the EMM cause with the same value.

# 9 (MS identity cannot be derived by the network);

The MS shall set the GPRS update status to GU2 NOT UPDATED (and shall store it according to subclause 4.1.3.2), enter the state GMM-DEREGISTERED, and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services in the network is still IMSI attached for CS services in the network.

If the rejected request was not for initiating a PDN connection for emergency bearer services, then

- a GPRS MS operating in MS operation mode A in network operation mode I shall proceed with appropriate MM specific procedures. Additionally, the MS shall initiate a normal or combined GPRS attach procedure depending on whether it is in an ongoing circuit-switched transaction. If the MS is in an ongoing circuit-switched transaction, it shall initiate the appropriate MM specific procedure after the circuit-switched transaction has been released. The MM sublayer shall act as in network operation mode II as long as the combined GMM procedures are not successful and no new RA is entered;

- if the update type is "periodic updating", a GPRS MS operating in MS operation mode B in network operation mode I shall proceed with appropriate MM specific procedures. Additionally, the MS shall initiate a combined GPRS attach procedure. The MM sublayer shall act as in network operation mode II as long as the combined GMM procedures are not successful and no new RA is entered;

- a GPRS MS operating in MS operation mode A or B in network operation mode II which is configured to use CS fallback and SMS over SGs, or SMS over SGs only, and which did not perform a successful generic location updating procedure since the last intersystem change from S1 mode to A/Gb or Iu mode shall proceed with appropriate MM specific procedures. Additionally, a GPRS MS operating in MS operation mode A or B in network operation mode II shall initiate a GPRS attach procedure; and

- a GPRS MS operating in MS operation mode A or B in network operation mode II which is not configured to use CS fallback and SMS over SGs, or SMS over SGs only, and a GPRS MS operating in MS operation mode C may subsequently, automatically initiate the GPRS attach procedure.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the tracking area update procedure is rejected with the EMM cause with the same value.

# 10 (Implicitly detached);

If the update type is "periodic updating", a GPRS MS operating in MS operation mode B in network operation mode I, is IMSI detached for both GPRS and CS services in the network.

A GPRS MS operating in MS operation mode A in network operation mode I is detached for GPRS services. If no RR connection exists then the MS is also IMSI detached for the CS services.

The MS shall enter the state GMM-DEREGISTERED.NORMAL-SERVICE. If the rejected request was not for initiating a PDN connection for emergency bearer services, then

- a GPRS MS operating in MS operation mode A or B in network operation mode II which is configured to use CS fallback and SMS over SGs, or SMS over SGs only, and which did not perform a successful generic location updating procedure since the last intersystem change from S1 mode to A/Gb or Iu mode shall proceed with appropriate MM specific procedures;

- regardless of the MS operation mode and the network operation mode, the MS shall then perform a new attach procedure. The MS should also activate PDP context(s) that were originally activated by the MS to replace any previously MS activated PDP context(s). The MS should also perform the procedures needed in order to activate any previously active multicast service(s); and

- additionally, a GPRS MS operating in MS operation mode A in network operation mode I which is configured to use CS fallback and SMS over SGs, or SMS over SGs only, and which is in an ongoing circuit-switched transaction shall initiate the appropriate MM specific procedure after the circuit-switched transaction has been released. The MM sublayer shall act as in network operation mode II as long as the combined GMM procedures are not successful and no new RA is entered.

If S1 mode is supported in the MS, the MS shall handle the EMM state as specified in 3GPP TS 24.301 [120] for the case when the tracking area update procedure is rejected with the EMM cause with the same value.

NOTE 4: In some cases, user interaction may be required and then the MS cannot activate the PDP and MBMS context(s) automatically.

# 11 (PLMN not allowed);

The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2), shall reset the routing area updating attempt counter, shall delete the list of equivalent PLMNs, and enter the state GMM-DEREGISTERED.

The MS shall store the PLMN identity in the "forbidden PLMN list" and if the MS is configured to use timer T3245 (see 3GPP TS 24.368 [135] or 3GPP TS 31.102 [112]) then the MS shall start timer T3245 and proceed as described in subclause 4.1.1.6. If the message has been successfully integrity checked by the lower layers and the MS maintains a PLMN-specific attempt counter for that PLMN, then the MS shall set this counter to the MS implementation-specific maximum value.

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED and shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

An MS in GAN mode shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the tracking area update procedure is rejected with the EMM cause with the same value.

# 12 (Location area not allowed);

The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to clause 4.1.3.2), shall reset the routing area updating attempt counter and shall change to state GMM-DEREGISTERED.LIMITED-SERVICE.

The mobile station shall store the LAI in the list of "forbidden location areas for regional provision of service".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall perform a cell selection according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

NOTE 5: The cell selection procedure is not applicable for an MS in GAN mode.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the tracking area update procedure is rejected with the EMM cause with the same value.

# 13 (Roaming not allowed in this location area);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to clause 4.1.3.2) and shall delete the list of equivalent PLMNs. The MS shall reset the routing area updating attempt counter, and shall enter the state GMM-REGISTERED.LIMITED-SERVICE.

The MS shall store the LAI in the list of "forbidden location areas for roaming".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

An MS in GAN mode shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the tracking area update procedure is rejected with the EMM cause with the same value.

# 14 (GPRS services not allowed in this PLMN);

The MS shall delete any RAI, P-TMSI, P-TMSI signature, and GPRS ciphering key sequence number stored, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2), shall reset the routing area updating attempt counter and shall change to state GMM-DEREGISTERED.

The MS shall store the PLMN identity in the "forbidden PLMNs for GPRS service" list and if the MS is configured to use timer T3245 (see 3GPP TS 24.368 [135] or 3GPP TS 31.102 [112]) then the MS shall start timer T3245 and proceed as described in subclause 4.1.1.6. A GPRS MS operating in MS operation mode C shall perform a PLMN selection instead of a cell selection. If the message has been successfully integrity checked by the lower layers and the MS maintains a PLMN-specific PS-attempt counter for that PLMN, then the MS shall set this counter to the MS implementation-specific maximum value.

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services in the network is still IMSI attached for CS services in the network.

If the update type is "periodic updating" a GPRS MS operating in MS operation mode A or B in network operation mode I shall then proceed with the appropriate MM specific procedure.

As an implementation option, a GPRS MS operating in operation mode A or B may perform the following additional action. If no RR connection exists the MS may perform the action immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS may only perform the action when the RR connection is subsequently released:

- The MS may perform a PLMN selection according to 3GPP TS 23.122 [14].

If an MS in GAN mode performs a PLMN selection, it shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

The MS shall not perform the optional PLMN selection in the case where the PLMN providing this reject cause is:

- On the "User Controlled PLMN Selector with Access Technology " or,

- On the "Operator Controlled PLMN Selector with Access Technology " list or,

- A PLMN identified as equivalent to any PLMN, within the same country, contained in the lists above.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the tracking area update procedure is rejected with the EMM cause with the same value.

# 15 (No Suitable Cells In Location Area);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) shall reset the routing area updating attempt counter and shall change to state GMM-REGISTERED.LIMITED-SERVICE.

The MS shall store the LAI in the list of "forbidden location areas for roaming".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall search for a suitable cell in another location area or a tracking area according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98] or 3GPP TS 36.304 [121].

NOTE 6: The cell selection procedure is not applicable for an MS in GAN mode.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the tracking area update procedure is rejected with the EMM cause with the same value.

#22 (Congestion);

If the T3346 value IE is present in the ROUTING AREA UPDATE REJECT message and the value indicates that this timer is neither zero nor deactivated, the MS shall proceed as described below, otherwise it shall be considered as an abnormal case and the behaviour of the MS for this case is specified in subclause 4.7.5.1.5.

The MS shall abort the routing area updating procedure, reset the routing area updating attempt counter and set the GPRS update status to GU2 NOT UPDATED. If the rejected request was not for initiating a PDN connection for emergency bearer services, the MS shall change to state GMM-REGISTERED.ATTEMPTING-TO-UPDATE.

The MS shall stop timer T3346 if it is running.

If the ROUTING AREA UPDATE REJECT message is integrity protected, the MS shall start timer T3346 with the value provided in the T3346 value IE.

If the ROUTING AREA UPDATE REJECT message is not integrity protected, the MS shall start timer T3346 with a random value from the default range specified in table 11.3a.

The MS stays in the current serving cell and applies the normal cell reselection process. The routing area updating procedure is started, if still necessary, when timer T3346 expires or is stopped.

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services in the network is still IMSI attached for CS services in the network.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the tracking area update procedure is rejected with the EMM cause with the same value.

A GPRS MS operating in MS operation mode A or B in network operation mode II which is configured to use CS fallback and SMS over SGs, or SMS over SGs only, and which did not perform a successful generic location updating procedure since the last intersystem change from S1 mode to A/Gb or Iu mode shall proceed with appropriate MM specific procedures.

# 25 (Not authorized for this CSG)

Cause #25 is only applicable in UTRAN Iu mode and when received from a CSG cell. Other cases are considered as abnormal cases and the specification of the mobile station behaviour is given in subclause 4.7.5.1.5.

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and store it according to subclause 4.1.3.2) and shall reset the routing area updating attempt counter. The state is changed to GMM-REGISTERED.LIMITED-SERVICE.

If the CSG ID and associated PLMN identity of the cell where the MS has sent the ROUTING AREA UPDATE REQUEST message are contained in the Allowed CSG list stored in the MS, the MS shall remove the entry corresponding to this CSG ID and associated PLMN identity from the Allowed CSG list.

If the CSG ID and associated PLMN identity of the cell where the MS has sent the ROUTING AREA UPDATE REQUEST message are contained in the Operator CSG list, the MS shall proceed as specified in 3GPP TS 23.122 [14] subclause 3.1A.

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall search for a suitable cell according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the tracking area update procedure is rejected with the EMM cause with the same value.

Other values are considered as abnormal cases. The specification of the MS behaviour in those cases is described in subclause 4.7.5.1.5.

\* \* \* Next Change \* \* \* \*

##### 4.7.5.2.4 Combined routing area updating not accepted by the network

If the combined routing area updating cannot be accepted, the network sends a ROUTING AREA UPDATE REJECT message to the MS. An MS that receives a ROUTING AREA UPDATE REJECT message containing a reject cause other than GMM cause value #25 or the message is integrity protected, shall stop the timer T3330, and shall enter the state MM IDLE. If a ROUTING AREA UPDATE REJECT message containing a reject cause other than GMM cause value #25 is received or the message is integrity protected, the MS shall stop any ongoing transmission of user data.

If the ROUTING AREA UPDATE REJECT message containing GMM cause value #25 was received without integrity protection, then the MS shall discard the message.

If the routing area update request is rejected due to general NAS level mobility management congestion control, the network shall set the GMM cause value to #22 "congestion" and assign a back-off timer T3346.

The MS shall then take different actions depending on the received reject cause:

# 3 (Illegal MS);

# 6 (Illegal ME), or

# 8 (GPRS services and non GPRS services not allowed);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED and the update status to U3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, TMSI, RAI, LAI, ciphering key sequence number and GPRS ciphering key sequence number. The MS shall consider the SIM/USIM as invalid for GPRS and non GPRS services until switching off or the SIM/USIM is removed or the timer T3245 expires as described in subclause 4.1.1.6. The MS shall delete the list of equivalent PLMNs, and shall enter the state GMM-DEREGISTERED.NO-IMSI.

If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for non-GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

NOTE 1: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9 for reject cause #8.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the combined tracking area update procedure is rejected with the EMM cause with the same value.

# 7 (GPRS services not allowed);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The SIM/USIM shall be considered as invalid for GPRS services until switching off or the SIM/USIM is removed. The MS shall enter the state GMM-DEREGISTERED.

If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services is still IMSI attached for CS services in the network.

A GPRS MS operating in MS operation mode A or B in network operation mode I shall then proceed with the appropriate MM specific procedure.

NOTE 2: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the combined tracking area update procedure is rejected with the EMM cause with the same value.

# 9 (MS identity cannot be derived by the network);

The MS shall set the GPRS update status to GU2 NOT UPDATED (and shall store it according to subclause 4.1.3.2), enter the state GMM-DEREGISTERED, and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

A GPRS MS operating in MS operation mode A or B in network operation mode I which is already IMSI attached for CS services in the network, is still IMSI attached for CS services in the network.

If the rejected request was not for initiating a PDN connection for emergency bearer services, then

- a GPRS MS operating in MS operation mode A or B shall proceed with appropriate MM specific procedures. The MM sublayer shall act as in network operation mode II as long as the combined GMM procedures are not successful and no new RA is entered; and

- the MS may subsequently, automatically initiate the GPRS attach procedure.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the combined tracking area update procedure is rejected with the EMM cause with the same value.

# 10 (Implicitly detached);

A GPRS MS operating in MS operation mode A or B in network operation mode I, is IMSI detached for both GPRS and CS services in the network.

The MS shall enter the state GMM-DEREGISTERED.NORMAL-SERVICE. If the rejected request was not for initiating a PDN connection for emergency bearer services, the MS shall then perform a new attach procedure. The MS should also activate PDP context(s) that were originally activated by the MS to replace any previously MS activated PDP context(s). The MS should also perform the procedures needed in order to activate any previously active multicast service(s).

If S1 mode is supported in the MS, the MS shall handle the EMM state as specified in 3GPP TS 24.301 [120] for the case when the combined tracking area update procedure is rejected with the EMM cause with the same value.

NOTE 3: In some cases, user interaction may be required and then the MS cannot activate the PDP/MBMS context(s) automatically.

# 11 (PLMN not allowed);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED and the update status to U3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and enter the state GMM-DEREGISTERED. Furthermore, the MS shall delete any P-TMSI, P-TMSI signature, TMSI, RAI, LAI, ciphering key sequence number GPRS ciphering key sequence number, shall delete the list of equivalent PLMNs, and shall reset the routing area updating attempt counter and the location update attempt counter.

The MS shall store the PLMN identity in the "forbidden PLMN list" and if the MS is configured to use timer T3245 (see 3GPP TS 24.368 [135] or 3GPP TS 31.102 [112]) then the MS shall start timer T3245 and proceed as described in subclause 4.1.1.6. If the message has been successfully integrity checked by the lower layers and the MS maintains a PLMN-specific attempt counter for that PLMN, then the MS shall set this counter to the MS implementation-specific maximum value.

The MS shall start timer T3340 as described in subclause 4.7.1.9.

The MS shall then perform a PLMN selection according to 3GPP TS 23.122 [14].

An MS in GAN mode shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the combined tracking area update procedure is rejected with the EMM cause with the same value.

# 12 (Location area not allowed);

The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2), shall reset the routing area updating attempt counter and shall change to state GMM-DEREGISTERED.LIMITED-SERVICE.

The MS shall in addition set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

The mobile station shall store the LAI in the list of "forbidden location areas for regional provision of service".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

The MS shall perform a cell selection according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

NOTE 4: The cell selection procedure is not applicable for an MS in GAN mode.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the combined tracking area update procedure is rejected with the EMM cause with the same value.

# 13 (Roaming not allowed in this location area);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to clause 4.1.3.2), and shall delete the list of equivalent PLMNs. The MS shall reset the routing area updating attempt counter, and shall enter the state GMM-REGISTERED.LIMITED-SERVICE.

The MS shall in addition set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

The MS shall store the LAI in the list of "forbidden location areas for roaming".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

The MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

The MS shall indicate the Update type IE "combined RA/LA updating with IMSI attach" when performing the routing area updating procedure following the PLMN selection.

An MS in GAN mode shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the combined tracking area update procedure is rejected with the EMM cause with the same value.

# 14 (GPRS services not allowed in this PLMN);

The MS shall delete any RAI, P-TMSI, P-TMSI signature, and GPRS ciphering key sequence number stored, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2), shall reset the routing area updating attempt counter and shall change to state GMM-DEREGISTERED.

The MS shall store the PLMN identity in the "forbidden PLMNs for GPRS service" list and if the MS is configured to use timer T3245 (see 3GPP TS 24.368 [135] or 3GPP TS 31.102 [112]) then the MS shall start timer T3245 and proceed as described subclause 4.1.1.6. If the message has been successfully integrity checked by the lower layers and the MS maintains a PLMN-specific PS-attempt counter for that PLMN, then the MS shall set this counter to the MS implementation-specific maximum value.

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services is still IMSI attached for CS services in the network.

A GPRS MS operating in MS operation mode A or B in network operation mode I shall then proceed with the appropriate MM specific procedure.

As an implementation option, a GPRS MS operating in operation mode A or B may perform a PLMN selection according to 3GPP TS 23.122 [14].

If an MS in GAN mode performs a PLMN selection, it shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

The MS shall not perform the optional PLMN selection in the case where the PLMN providing this reject cause is:

- On the "User Controlled PLMN Selector with Access Technology " or,

- On the "Operator Controlled PLMN Selector with Access Technology " list or,

- A PLMN identified as equivalent to any PLMN, within the same country, contained in the lists above.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list, KSI and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the combined tracking area update procedure is rejected with the EMM cause with the same value.

# 15 (No Suitable Cells In Location Area);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to clause 4.1.3.2), shall reset the routing area updating attempt counter and shall change to state GMM-REGISTERED.LIMITED-SERVICE.

The MS shall in addition set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

The MS shall store the LAI in the list of "forbidden location areas for roaming".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

The MS shall search for a suitable cell in another location area according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

NOTE 5: The cell selection procedure is not applicable for an MS in GAN mode.

The MS shall indicate the Update type IE "combined RA/LA updating with IMSI attach" when performing the routing area updating procedure.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the combined tracking area update procedure is rejected with the EMM cause with the same value.

#22 (Congestion);

If the T3346 value IE is present in the ROUTING AREA UPDATE REJECT message and the value indicates that this timer is neither zero nor deactivated, the MS shall proceed as described below, otherwise it shall be considered as an abnormal case and the behaviour of the MS for this case is specified in subclause 4.7.5.2.5.

The MS shall abort the routing area updating procedure, reset the routing area updating attempt counter and set the GPRS update status to GU2 NOT UPDATED. If the rejected request was not for initiating a PDN connection for emergency bearer services, the MS shall change to state GMM-REGISTERED.ATTEMPTING-TO-UPDATE.

The MS shall stop timer T3346 if it is running.

If the ROUTING AREA UPDATE REJECT message is integrity protected, the MS shall start timer with the value provided in the T3346 value IE.

If the ROUTING AREA UPDATE REJECT message is not integrity protected, the ME shall start timer T3346 with a random value from the default range specified in table 11.3a.

The MS stays in the current serving cell and applies the normal cell reselection process. The routing area updating procedure is started, if still necessary, when timer T3346 expires or is stopped.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the tracking area update procedure is rejected with the EMM cause with the same value.

#25 (Not authorized for this CSG)

Cause #25 is only applicable in UTRAN Iu mode and when received from a CSG cell. Other cases are considered as abnormal cases and the specification of the mobile station behaviour is given in subclause 4.7.5.2.5.

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and store it according to subclause 4.1.3.2) and shall reset the routing area updating attempt counter. The state is changed to GMM-REGISTERED.LIMITED-SERVICE.

If the CSG ID and associated PLMN identity of the cell where the MS has sent the ROUTING AREA UPDATE REQUEST message are contained in the Allowed CSG list stored in the MS, the MS shall remove the entry corresponding to this CSG ID and associated PLMN identity from the Allowed CSG list.

If the CSG ID and associated PLMN identity of the cell where the MS has sent the ROUTING AREA UPDATE REQUEST message are contained in the Operator CSG list, the MS shall proceed as specified in 3GPP TS 23.122 [14] subclause 3.1A.

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

The MS shall search for a suitable cell according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status and tracking area updating attempt counter as specified in 3GPP TS 24.301 [120] for the case when the combined tracking area update procedure is rejected with the EMM cause with the same value.

Other values are considered as abnormal cases. The specification of the MS behaviour in those cases is described in subclause 4.7.5.2.5.

\* \* \* Next Change \* \* \* \*

##### 4.7.13.4 Service request procedure not accepted by the network

If the Service request cannot be accepted, the network returns a SERVICE REJECT message to the mobile station.

Based on local policies or configurations in the network, if the network determines to change the periodic routing area update timer (T3312), or if the network determines to change the PSM usage or the value of the timer T3324 in the MS for which PSM is allowed by the network, the network may return a SERVICE REJECT with the cause #10 "implicitly detached" to the MS.

If the service request for mobile originated services is rejected due to general NAS level mobility management congestion control, the network shall set the GMM cause value to #22 "congestion" and assign a back-off timer T3346.

An MS that receives a SERVICE REJECT message containing a reject cause other than GMM cause value #25 or the message is integrity protected, shall reset the service request attempt counter, shall stop the timer T3317.

If the SERVICE REJECT message containing GMM cause value #25 was received without integrity protection, then the MS shall discard the message.

The MS shall then take different actions depending on the received reject cause value:

# 3 (Illegal MS); or

# 6 (Illegal ME);

- The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2), shall delete the list of equivalent PLMNs and enter the state GMM-DEREGISTERED.NO-IMSI. Furthermore, it shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number and shall consider the SIM/USIM as invalid for GPRS services until switching off or the SIM/USIM is removed. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

- A GPRS MS operating in MS operation mode A or B shall in addition set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall abort the RR connection, unless an emergency call is ongoing. The SIM/USIM shall be considered as invalid also for non-GPRS services until switching off or the SIM/USIM is removed or the timer T3245 expires as described in subclause 4.1.1.6. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for non-GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the service request procedure is rejected with the EMM cause with the same value.

# 7 (GPRS services not allowed);

- The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2.9) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The SIM/USIM shall be considered as invalid for GPRS services until switching off or the SIM/USIM is removed. The new state is GMM-DEREGISTERED. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services is still IMSI attached for CS services in the network.

A GPRS MS operating in MS operation mode A or B in network operation mode I shall then proceed with the appropriate MM specific procedure.

NOTE 1: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the service request procedure is rejected with the EMM cause with the same value.

# 8 (GPRS services and non-GPRS services not allowed);

The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. The new GMM state is GMM-DEREGISTERED.NO-IMSI.

The MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. The MS shall delete the list of equivalent PLMNs. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall abort the RR connection, unless an emergency call is ongoing. The SIM/USIM shall be considered as invalid for GPRS and non-GPRS services until switching off or the SIM/USIM is removed. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for GPRS services", then the MS shall set this counter to MS implementation-specific maximum value. If the message has been successfully integrity checked by the lower layers and the MS maintains a counter for "SIM/USIM considered invalid for non-GPRS services", then the MS shall set this counter to MS implementation-specific maximum value.

NOTE 2: Optionally the MS starts the timer T3340 as described in subclause 4.7.1.9.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the service request procedure is rejected with the EMM cause with the same value.

# 9 (MS identity cannot be derived by the network);

- The MS shall set the GPRS update status to GU2 NOT UPDATED (and shall store it according to subclause 4.1.3.2), enter the state GMM-DEREGISTERED, and shall delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. If the rejected request was not for initiating a PDN connection for emergency bearer services, the MS may subsequently, automatically initiate the GPRS attach procedure.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the service request procedure is rejected with the EMM cause with the same value.

# 10 (Implicitly detached);

- A GPRS MS operating in MS operation mode B in network operation mode I is IMSI detached for both GPRS and CS services.

A GPRS MS operating in MS operation mode A in network operation mode I is detached for GPRS services.If no RR connection exists then the MS is also IMSI detached for the CS services.

- The MS shall change to state GMM-DEREGISTERED.NORMAL-SERVICE. If the rejected request was not for initiating a PDN connection for emergency bearer services, the MS shall then perform a new attach procedure. The MS should also activate PDP context(s) that were originally activated by the MS to replace any previously MS activated PDP context(s). The MS should also perform the procedures needed in order to activate any previously active multicast service(s).

If S1 mode is supported in the MS, the MS shall handle the EMM state as specified in 3GPP TS 24.301 [120] for the case when the the service request procedure is rejected with the EMM cause with the same value.

NOTE 3: In some cases, user interaction may be required and then the MS cannot activate the PDP and MBMS context(s) automatically.

# 11 (PLMN not allowed);

- The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and enter the state GMM-DEREGISTERED. The MS shall delete the list of equivalent PLMNs.

- The MS shall store the PLMN identity in the "forbidden PLMN list" and if the MS is configured to use timer T3245 (see 3GPP TS 24.368 [135] or 3GPP TS 31.102 [112]) then the MS shall start timer T3245 and proceed as described in subclause 4.1.1.6. If the message has been successfully integrity checked by the lower layers and the MS maintains a PLMN-specific attempt counter for that PLMN, then the MS shall set this counter to the MS implementation-specific maximum value.

The MS shall start timer T3340 as described in subclause 4.7.1.9.

- If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- A GPRS MS operating in MS operation mode A shall set the update status to U3 ROAMING NOT ALLOWED and shall delete any TMSI, LAI and ciphering key sequence number. The new MM state is MM IDLE.

- The MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

An MS in GAN mode shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the service request procedure is rejected with the EMM cause with the same value.

# 12 (Location area not allowed);

- The MS shall delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number, shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall change to state GMM-DEREGISTERED.LIMITED-SERVICE.

- The mobile station shall store the LAI in the list of "forbidden location areas for regional provision of service".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

- If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall perform a cell selection according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

NOTE 4: The cell selection procedure is not applicable for an MS in GAN mode.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state, EPS update status, GUTI, last visited registered TAI, TAI list and KSI as specified in 3GPP TS 24.301 [120] for the case when the service request procedure is rejected with the EMM cause with the same value.

# 13 (Roaming not allowed in this location area);

- The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall change to state GMM-REGISTERED.LIMITED-SERVICE.

- The MS shall store the LAI in the list of "forbidden location areas for roaming".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

- If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall perform a PLMN selection according to 3GPP TS 23.122 [14].

An MS in GAN mode shall request a PLMN list in GAN (see 3GPP TS 44.318 [76b]) prior to perform a PLMN selection from this list according to 3GPP TS 23.122 [14].

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state and EPS update status as specified in 3GPP TS 24.301 [120] for the case when the service request procedure is rejected with the EMM cause with the same value.

# 15 (No Suitable Cells In Location Area);

- The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall change to state GMM-REGISTERED.LIMITED-SERVICE.

- The MS shall store the LAI in the list of "forbidden location areas for roaming".

The MS shall start timer T3340 as described in subclause 4.7.1.9.

- If no RR connection exists, the MS shall perform the following additional actions immediately. If the MS is operating in MS operation mode A and an RR connection exists, the MS shall perform these actions when the RR connection is subsequently released:

- If the MS is IMSI attached, the MS shall set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall search for a suitable cell in another location area or a tracking area according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98] or 3GPP TS 36.304 [121].

NOTE 5: The cell selection procedure is not applicable for an MS in GAN mode.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state and EPS update status as specified in 3GPP TS 24.301 [120] for the case when the service request procedure is rejected with the EMM cause with the same value.

#22 (Congestion);

If the T3346 value IE is present in the SERVICE REJECT message and the value indicates that this timer is neither zero nor deactivated, the MS shall proceed as described below, otherwise it shall be considered as an abnormal case and the behaviour of the MS for this case is specified in subclause 4.7.13.5.

If the rejected request was not for initiating a PDN connection for emergency bearer services, the MS shall abort the service request procedure and enter state GMM-REGISTERED, and stop timer T3317 if still running.

The MS shall stop timer T3346 if it is running.

If the SERVICE REJECT message is integrity protected, the MS shall start timer T3346 with the value provided in the T3346 value IE.

If the SERVICE REJECT message is not integrity protected, the MS shall start timer T3346 with a random value from the default range specified in table 11.3a.

The MS stays in the current serving cell and applies normal cell reselection process. The service request procedure may be started by CM layer, if it is still necessary, when timer T3346 expires or is stopped.

A GPRS MS operating in MS operation mode A or B which is already IMSI attached for CS services in the network is still IMSI attached for CS services in the network.

If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state and EPS update status as specified in 3GPP TS 24.301 [120] for the case when the service request procedure is rejected with the EMM cause with the same value.

# 25 (Not authorized for this CSG)

- Cause #25 is only applicable in UTRAN Iu mode and when received from a CSG cell. Other cases are considered as abnormal cases and the specification of the mobile station behaviour is given in subclause 4.7.13.5.

- The MS shall set the GPRS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to subclause 4.1.3.2) and shall change to state GMM-REGISTERED.LIMITED-SERVICE.

- If the CSG ID and associated PLMN identity of the cell where the MS has sent the SERVICE REQUEST message are contained in the Allowed CSG list stored in the MS, the MS shall remove the entry corresponding to this CSG ID and associated PLMN identity from the Allowed CSG list.

- If the CSG ID and associated PLMN identity of the cell where the MS has sent the SERVICE REQUEST message are contained in the Operator CSG list, the MS shall proceed as specified in 3GPP TS 23.122 [14] subclause 3.1A.

The MS shall start timer T3340 as described in subclause 4.7.1.9.

If the MS is IMSI attached for non-GPRS services, the MS shall set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

- The MS shall search for a suitable cell according to 3GPP TS 43.022 [82] and 3GPP TS 25.304 [98].

- If S1 mode is supported in the MS, the MS shall handle the EMM parameters EMM state and EPS update status as specified in 3GPP TS 24.301 [120] for the case when the service request procedure is rejected with the EMM cause with the same value.

# 40 (No PDP context activated)

- The MS shall deactivate locally all active PDP and MBMS contexts and the MS shall enter the state GMM-REGISTERED.NORMAL-SERVICE. If the rejected request was not for initiating a PDN connection for emergency bearer services, the MS may also activate PDP context(s) that were originally activated by the MS to replace any previously MS activated PDP context(s). The MS may also perform the procedures needed in order to activate any previously active multicast service(s).

NOTE 6: In some cases, user interaction may be required and then the MS cannot activate the PDP and MBMS context(s) automatically.

Other values are considered as abnormal cases. The specification of the MS behaviour in those cases is described in subclause 4.7.13.5.