

3GPP TSG CN Plenary Meeting #20
4th – 6th June 2003 Hämeenlinna, FINLAND.

NP-030213

Source: TSG CN WG4
Title: Corrections on TEI R97
Agenda item: 7.11
Document for: APPROVAL

| Spec | CR | Rev | Doc-2nd-Level | Phase | Subject | Cat | Ver_C |
|--------|------|-----|---------------|-------|--|-----|-------|
| 03.08 | A040 | | N4-030382 | R97 | Distinction between Roaming Restriction Due To Unsupported Feature and Roaming Restricted in the SGSN Due To Unsupported Feature | F | 6.5.0 |
| 03.08 | A041 | | N4-030383 | R98 | Distinction between Roaming Restriction Due To Unsupported Feature and Roaming Restricted in the SGSN Due To Unsupported Feature | A | 7.4.0 |
| 23.008 | 119 | | N4-030384 | R99 | Distinction between Roaming Restriction Due To Unsupported Feature and Roaming Restricted in the SGSN Due To Unsupported Feature | A | 3.7.0 |
| 23.008 | 120 | | N4-030385 | Rel-4 | Distinction between Roaming Restriction Due To Unsupported Feature and Roaming Restricted in the SGSN Due To Unsupported Feature | A | 4.2.0 |
| 23.008 | 121 | | N4-030386 | Rel-5 | Distinction between Roaming Restriction Due To Unsupported Feature and Roaming Restricted in the SGSN Due To Unsupported Feature | A | 5.4.0 |

CHANGE REQUEST

⌘ **03.08 CR A040** ⌘ rev **-** ⌘ Current version: **6.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

| | | |
|------------------------|---|---|
| Title: | ⌘ | Distinction between Roaming Restriction Due To Unsupported Feature and Roaming Restricted in the SGSN Due To Unsupported Feature |
| Source: | ⌘ | Vodafone |
| Work item code: | ⌘ | TEI |
| | | Date: ⌘ 04/04/2003 |
| Category: | ⌘ | F |
| | | Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction 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 . |
| | | Release: ⌘ R97 Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) |

| | | |
|--------------------------------------|---|--|
| Reason for change: | ⌘ | GSM 03.16 and GSM 09.02 both show Roaming Restriction Due To Unsupported Feature (which applies to the VLR) and Roaming Restricted in the SGSN Due To Unsupported Feature (which applies to the SGSN) as distinct items of subscriber data. However GSM 03.08 shows Roaming Restriction Due To Unsupported Feature as applying to both the VLR and the SGSN, with the same data item in the HLR replicated in the SGSN and the VLR. It is possible for the SGSN to support all the features required for a subscriber, so that service is allowed in the SGSN, when the VLR fails to support a critical feature, so that service is not allowed in the VLR (or vice versa). Distinct indicators are required in the HLR. The concept of Location Area is not used in the SGSN; the counterpart in the SGSN of "Location Area not allowed" is "Routeing Area not allowed". This is an essential correction |
| Summary of change: | ⌘ | Limit subclause on "Roaming Restriction due to unsupported feature" to the VLR; add new subclause for "Roaming Restricted in the SGSN due to unsupported feature". Limit subclause on "LA not allowed" to the VLR; add new subclause for "RA not allowed" |
| Consequences if not approved: | ⌘ | Unnecessary linkage between roaming restriction due to unsupported feature in the VLR and roaming restriction due to unsupported feature in the SGSN. Subscribers will be unnecessarily denied service. |

| Clauses affected: | ⌘ | 2.4.12; 2.4.14 (new); 2.4.15; 2.4.15.2; 2.4.15.3 (new); Table 2 | | | | | | | | | | |
|------------------------------|---------------------|---|---|---|--|---|--|---|--|---|---------------------------|---|
| Other specs affected: | ⌘ | <table border="1"><tr><th>Y</th><th>N</th></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td></tr></table> | Y | N | | X | | X | | X | Other core specifications | ⌘ |
| | | Y | N | | | | | | | | | |
| | | | X | | | | | | | | | |
| | | | X | | | | | | | | | |
| | X | | | | | | | | | | | |
| | Test specifications | | | | | | | | | | | |
| | O&M Specifications | | | | | | | | | | | |
| Other comments: | ⌘ | An editorial error in the presence requirement for the GGSN number in the HLR in Table 2 has been corrected. Later releases of the specification show it as mandatory (M); it certainly is not copyright (©)! | | | | | | | | | | |

***** First modified section *****

2.4.11 MSC area restricted flag

MSC area restricted flag is a parameter which can take either of the following values:

- MSC area restricted;
- MSC area not restricted.

The parameter is set in the HLR during updating of the VLR. Handling of unsupported services and information received from the VLR based on national roaming or regionally restricted subscription (subclause 2.4.10) determine its value. The parameter contributes to the "MS Not Reachable" state for handling of terminating traffic in the HLR. The default value is "MSC area not restricted".

The MSC area restricted flag is temporary subscriber data and is contained in the HLR.

2.4.12 LA not allowed flag

The LA not allowed flag is set in the VLR ~~and the SGSN~~ depending on National Roaming, Regionally Restricted Subscription and Roaming Restriction Due To UnSupported Feature, see GSM 09.02. It is applied to restrict service on a location area basis.

The LA not allowed flag is temporary subscriber data stored in the VLR ~~and the SGSN~~.

2.4.13 SGSN area restricted flag

SGSN area restricted flag is a parameter which can take either of the following values:

- SGSN area restricted;
- SGSN area not restricted.

The parameter is set in the HLR during updating of the SGSN. Handling of unsupported services and information received from the SGSN based on national roaming or regionally restricted subscription (subclause 2.4.7) determine its value. The parameter contributes to the "MS Not Reachable" state for handling of terminating traffic in the HLR. The default value is "SGSN area not restricted".

The SGSN area restricted flag is temporary subscriber data and is contained in the HLR.

2.4.14 RA not allowed flag~~Void~~

The RA not allowed flag is set in the SGSN depending on National Roaming, Regionally Restricted Subscription and Roaming Restriction in the SGSN Due To UnSupported Feature, see GSM 09.02. It is applied to restrict service on a routeing area basis.

The RA not allowed flag is temporary subscriber data stored in the SGSN.

2.4.15 Service restriction data induced by roaming

If in the course of roaming or at updating of the VLR or SGSN the HLR is informed that the VLR or SGSN does not support certain sensitive services or features, or, the HLR is informed in data request that the VLR or the SGSN supports only specific services, features or phases which do not correspond to subscribed services, features or phases, the HLR takes appropriate measures to restrict service for the mobile station in that VLR or SGSN by setting and sending network induced replacing services such as available services, features or phases, barring programs or the roaming restriction for the MSC or SGSN area.

These network-induced data have to be kept separate in the HLR, and where possible as discussed below in the VLR, from the permanent subscriber data of the call barring supplementary services, from the barring related data that can be modified by the subscriber or from the permanent regional subscription data.

These network-induced data have to be kept separate in the HLR, and where possible as discussed below in the SGSN, from the permanent regional subscription data.

The network induced data take precedence over the subscriber data of the user where they are in conflict. If, in the course of roaming, restrictions caused by a service are lifted, the original subscriber data have to be re-installed both in HLR, in SGSN and in VLR when applicable, regarding any remaining restrictions due to other service replacements.

All network-induced restriction data are temporary subscriber data.

For ODB, GSM 03.15 recommends mainly barring programs to replace this feature. The replacing barring data are conditionally stored in the HLR and VLR. In the VLR they cannot be distinguished from the permanent supplementary services data with the available signalling means, and no additional storage is needed. Interrogation shall reflect in both HLR and VLR the valid setting of the replacing temporary data; to prevent interference with Subscriber Controlled Input and to inform the customer on the restriction, the "control of barring services" subscription option is also temporarily set to the value "by the service provider".

CUG is also replaced by Outgoing Call Barring as described in GSM 03.85.

Roaming restriction in the MSC area due to unsupported features is used to replace AoCC, see GSM 03.86, and Zone Codes for regional subscription, see subclause 2.4.10 and GSM 09.02. A flag in [the HLR](#) and [the VLR](#), see subclause 2.4.15.2, collects the sources of network-induced roaming restriction which are also kept separate by the HLR.

Roaming restriction in the SGSN area due to unsupported features is used to replace Zone Codes for regional subscription, see subclause 2.4.10 and GSM 09.02. A flag in [the HLR](#) and [the SGSN](#), see subclause 2.4.15.3, collects the sources of network-induced roaming restriction which are also kept separate by the HLR.

2.4.15.1 ODB-induced barring data

ODB-induced barring data are temporary data stored conditionally in the HLR; they include the necessary replacing barring programs for outgoing and incoming calls depending on the ODB profile. The subscription option "control of barring services" is set to "by the service provider". The corresponding barring supplementary services for outgoing calls are set by the HLR and sent to the VLR.

2.4.15.2 Roaming restriction due to unsupported feature

Roaming restriction due to unsupported feature is a parameter which indicates that one or several services or features are not supported by the MSC ~~or the SGSN~~, resulting in roaming restriction in the MSC area ~~or SGSN area~~. It can take either of the following values:

- roaming restricted;
- roaming not restricted.

The parameter governs the "LA not allowed flag" in the VLR (see subclause 2.4.12) and the "MSC area restricted flag" in the HLR (see subclause 2.4.11); ~~or the "LA not allowed flag" in the SGSN (see subclause 2.4.12) and the "SGSN area restricted flag" in the HLR (see subclause 2.4.13)~~; see [also](#) GSM 09.02.

The flag "roaming restriction due to unsupported feature" is temporary subscriber data stored in the VLR, ~~SGSN~~ and in the HLR.

[2.4.15.3 Roaming restricted in the SGSN due to unsupported feature](#)

[Roaming restricted in the SGSN due to unsupported feature is a parameter which indicates that one or several services or features are not supported by the SGSN, resulting in roaming restriction in the SGSN area. It can take either of the following values:](#)

- [- roaming restricted;](#)
- [- roaming not restricted.](#)

[The parameter governs the "RA not allowed flag" in the SGSN \(see subclause 2.4.14\) and the "SGSN area restricted flag" in the HLR \(see subclause 2.4.13\); see also GSM 09.02.](#)

[The flag "roaming restricted in the SGSN due to unsupported feature" is temporary subscriber data stored in the SGSN and in the HLR.](#)

***** Next modified section *****

Table 2: Overview of data used for GPRS Network Access Mode

| PARAMETER | Subclause | HLR | VLR | SGSN | GGSN TYPE | |
|---|-----------|-----|--------|--------|-----------|----------|
| IMSI | 2.1.1.1 | M | M | M | M | P Note |
| Network Access Mode | 2.1.1.2 | M | - | C (a) | - | P Note |
| International MS ISDN number | 2.1.2 | M | M | M | - | T |
| multinumbering MSISDNs | 2.1.3 | C | - | - | - | T Note |
| Basic MSISDN indicator | 2.1.3.1 | C | - | - | - | T |
| MSISDN-Alert indicator | 2.1.3.2 | C | - | - | - | T |
| P-TMSI | 2.1.5 | - | - | C | - | T Note |
| TLLI | 2.1.6 | - | - | C | - | T |
| Random TLLI | 2.1.7 | - | - | C | - | T Note |
| IMEI | 2.1.9 | - | - | C | - | T |
| RAND/SRES and Kc | 2.3.1 | M | - | M | - | T |
| Ciphering Key Sequence Number | 2.3.2 | - | - | M | - | T |
| Selected Ciphering Algorithm | 2.3.3 | - | - | M | - | T |
| Current Kc | 2.3.4 | - | - | M | - | T |
| P-TMSI Signature | 2.3.5 | - | - | C | - | T |
| Routing Area Identity | 2.4.3 | - | - | M | - | T |
| Cell Global Identification | 2.4.4 | - | - | C | - | T |
| SGSN Number | 2.4.8.1 | M | C (Gs) | - | - | T Note |
| GGSN Number | 2.4.8.2 | M | - | - | - | P Note |
| VLR Number | 2.4.5 | M | - | C (Gs) | - | T |
| RSZI Lists | 2.4.10.1 | C | - | - | - | P |
| Zone Code List | 2.4.10.2 | - | - | C | - | P |
| RA not allowed flag | 2.4.14 | - | - | M | - | T |
| SGSN area restricted flag | 2.4.13 | M | - | - | - | T |
| Roaming Restricted in the SGSN due to unsupported feature | 2.4.15.3 | M | - | M | - | T |
| Cell ID | 2.4.16 | - | - | C | - | T |
| Provision of teleservice | 2.5.2 | C | - | C | - | P |
| Transfer of SM option | 2.5.4 | M | - | - | - | P |
| Subscriber Status | 2.8.1 | C | - | C | - | P |
| Barring of outgoing calls | 2.8.2.1 | C | - | C | - | P |
| Barring of roaming | 2.8.2.3 | C | - | - | - | P |
| ODB PLMN-specific data | 2.8.3 | C | - | C | - | P |
| MM State | 2.7.3 | - | - | M | - | T |
| Subscriber Data Confirmed by HLR Indicator | 2.7.4.2 | - | - | M | - | T |
| Location Info Confirmed by HLR Indicator | 2.7.4.3 | - | - | M | - | T |
| MS purged for GPRS flag | 2.7.6 | M | - | - | - | T |
| MNRG | 2.7.2 | M | - | M | M | T |
| MNRR | 2.7.7 | C | - | - | - | T |
| Trace Activated in SGSN | 2.11.7 | C | - | C | - | P |
| PDP Type | 2.13.1 | C | - | C | M | P |
| PDP Address | 2.13.2 | C | - | C | M | P |
| NSAPI | 2.13.3 | - | - | C | C | T |
| PDP State | 2.13.4 | - | - | C | - | T |
| New SGSN Address | 2.13.5 | - | - | C | - | T |
| Access Point Name | 2.13.6 | C | - | C | C | P/T Note |
| GGSN Address in Use | 2.13.7 | - | - | C | - | T |
| VPLMN Address Allowed | 2.13.8 | C | - | C | - | P |
| Dynamic Address | 2.13.9 | - | - | - | C | T |
| SGSN Address | 2.13.10 | - | - | - | M | T |
| GGSN-list | 2.13.11 | M | - | - | - | T |
| Quality of Service Subscribed | 2.13.12 | C | - | C | - | P |
| Quality of Service Requested | 2.13.13 | - | - | C | - | T |
| Quality of Service Negotiated | 2.13.14 | - | - | C | M | T |
| SND | 2.13.15 | - | - | C | C | T |
| SNU | 2.13.16 | - | - | C | C | T |
| DRX Parameters | 2.13.17 | - | - | M | - | T |
| Compression | 2.13.18 | - | - | C | - | T |
| NGAF | 2.13.19 | - | - | C (Gs) | - | T |
| Classmark | 2.13.20 | - | - | M | - | T |
| TID | 2.13.21 | - | - | C | C | T |
| Radio Priority | 2.13.22 | - | - | C | - | T |
| Radio Priority SMS | 2.13.23 | - | - | C | - | T |
| PDP Context Identifier | 2.13.24 | C | - | C | - | T |

***** End of document *****

CHANGE REQUEST

⌘ **03.08 CR A041** ⌘ rev **-** ⌘ Current version: **7.4.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

| | | | |
|------------------------|---|-----------------|---|
| Title: | ⌘ Distinction between Roaming Restriction Due To Unsupported Feature and Roaming Restricted in the SGSN Due To Unsupported Feature | | |
| Source: | ⌘ Vodafone | | |
| Work item code: | ⌘ TEI | Date: | ⌘ 04/04/2003 |
| Category: | ⌘ A | Release: | ⌘ R98 |
| | Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction 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 . | | Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) |

| | |
|--------------------------------------|--|
| Reason for change: | ⌘ GSM 03.16 and GSM 09.02 both show Roaming Restriction Due To Unsupported Feature (which applies to the VLR) and Roaming Restricted in the SGSN Due To Unsupported Feature (which applies to the SGSN) as distinct items of subscriber data. However GSM 03.08 shows Roaming Restriction Due To Unsupported Feature as applying to both the VLR and the SGSN, with the same data item in the HLR replicated in the SGSN and the VLR. It is possible for the SGSN to support all the features required for a subscriber, so that service is allowed in the SGSN, when the VLR fails to support a critical feature, so that service is not allowed in the VLR (or vice versa). Distinct indicators are required in the HLR. The concept of Location Area is not used in the SGSN; the counterpart in the SGSN of "Location Area not allowed" is "Routeing Area not allowed". |
| Summary of change: | ⌘ Limit subclause on "Roaming Restriction due to unsupported feature" to the VLR; add new subclause for "Roaming Restricted in the SGSN due to unsupported feature". Limit subclause on "LA not allowed" to the VLR; add new subclause for "RA not allowed" |
| Consequences if not approved: | ⌘ Unnecessary linkage between roaming restriction due to unsupported feature in the VLR and roaming restriction due to unsupported feature in the SGSN. Subscribers will be unnecessarily denied service. |

| | | | | | | | | | | | | |
|------------------------------|---|--|---|---|--|---|--|---|--|---|---------------------------|---|
| Clauses affected: | ⌘ | 2.4.13; 2.4.14a (new); 2.4.15; 2.4.15.2; 2.4.15.3 (new); Table 2 | | | | | | | | | | |
| Other specs affected: | ⌘ | <table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> | Y | N | | X | | X | | X | Other core specifications | ⌘ |
| | | Y | N | | | | | | | | | |
| | | | X | | | | | | | | | |
| | | | X | | | | | | | | | |
| | X | | | | | | | | | | | |
| | X | Test specifications | | | | | | | | | | |
| | X | O&M Specifications | | | | | | | | | | |
| Other comments: | ⌘ | | | | | | | | | | | |

***** First modified section *****

2.4.12 MSC area restricted flag

MSC area restricted flag is a parameter which can take either of the following values:

- MSC area restricted;
- MSC area not restricted.

The parameter is set in the HLR during updating of the VLR. Handling of unsupported services and information received from the VLR based on national roaming or regionally restricted subscription (subclause 2.4.10) determine its value. The parameter contributes to the "MS Not Reachable" state for handling of terminating traffic in the HLR. The default value is "MSC area not restricted".

The MSC area restricted flag is temporary subscriber data and is contained in the HLR.

2.4.13 LA not allowed flag

The LA not allowed flag is set in the VLR ~~and the SGSN~~ depending on National Roaming, Regionally Restricted Subscription and Roaming Restriction Due To UnSupported Feature, see GSM 09.02. It is applied to restrict service on a location area basis.

The LA not allowed flag is temporary subscriber data stored in the VLR ~~and the SGSN~~.

2.4.14 SGSN area restricted flag

SGSN area restricted flag is a parameter which can take either of the following values:

- SGSN area restricted;
- SGSN area not restricted.

The parameter is set in the HLR during updating of the SGSN. Handling of unsupported services and information received from the SGSN based on national roaming or regionally restricted subscription (subclause 2.4.7) determine its value. The parameter contributes to the "MS Not Reachable" state for handling of terminating traffic in the HLR. The default value is "SGSN area not restricted".

The SGSN area restricted flag is temporary subscriber data and is contained in the HLR.

2.4.14a RA not allowed flag

The RA not allowed flag is set in the SGSN depending on National Roaming, Regionally Restricted Subscription and Roaming Restriction in the SGSN Due To UnSupported Feature, see GSM 09.02. It is applied to restrict service on a location area basis.

The RA not allowed flag is temporary subscriber data stored in the SGSN.

2.4.15 Service restriction data induced by roaming

If in the course of roaming or at updating of the VLR or SGSN the HLR is informed that the VLR or SGSN does not support certain sensitive services or features, or the HLR is informed in data request that the VLR or the SGSN supports only specific services, features or phases which do not correspond to subscribed services, features or phases, the HLR takes appropriate measures to restrict service for the mobile station in that VLR or SGSN by setting and sending network induced replacing services such as available services, features or phases, barring programs or the roaming restriction for the MSC or SGSN area.

These network-induced data have to be kept separate in the HLR, and where possible as discussed below in the VLR, from the permanent subscriber data of the call barring supplementary services, from the barring related data that can be modified by the subscriber or from the permanent regional subscription data.

These network-induced data have to be kept separate in the HLR, and where possible as discussed below in the SGSN, from the permanent regional subscription data.

The network induced data take precedence over the subscriber data of the user where they are in conflict. If, in the course of roaming, restrictions caused by a service are lifted, the original subscriber data have to be re-installed both in HLR, in SGSN and in VLR when applicable, regarding any remaining restrictions due to other service replacements.

All network-induced restriction data are temporary subscriber data.

For ODB, GSM 03.15 recommends mainly barring programs to replace this feature. The replacing barring data are conditionally stored in the HLR and VLR. In the VLR they cannot be distinguished from the permanent supplementary services data with the available signalling means, and no additional storage is needed. Interrogation shall reflect in both HLR and VLR the valid setting of the replacing temporary data; to prevent interference with Subscriber Controlled Input and to inform the customer on the restriction, the "control of barring services" subscription option is also temporarily set to the value "by the service provider".

CUG is also replaced by Outgoing Call Barring as described in GSM 03.85.

Roaming restriction in the MSC area due to unsupported features is used to replace AoCC, see GSM 03.86, and Zone Codes for regional subscription, see subclause 2.4.10 and GSM 09.02. A flag in [the HLR](#) and [the VLR](#), see subclause 2.4.15.2, collects the sources of network-induced roaming restriction which are also kept separate by the HLR.

Roaming restriction in the SGSN area due to unsupported features is used to replace Zone Codes for regional subscription, see subclause 2.4.10 and GSM 09.02. A flag in [the HLR](#) and [the SGSN](#), see subclause 2.4.15.3, collects the sources of network-induced roaming restriction which are also kept separate by the HLR.

2.4.15.1 ODB-induced barring data

ODB-induced barring data are temporary data stored conditionally in the HLR; they include the necessary replacing barring programs for outgoing and incoming calls depending on the ODB profile. The subscription option "control of barring services" is set to "by the service provider". The corresponding barring supplementary services for outgoing calls are set by the HLR and sent to the VLR.

2.4.15.2 Roaming restriction due to unsupported feature

Roaming restriction due to unsupported feature is a parameter which indicates that one or several services or features are not supported by the MSC ~~or the SGSN~~, resulting in roaming restriction in the MSC area ~~or SGSN area~~. It can take either of the following values:

- roaming restricted;
- roaming not restricted.

The parameter governs the "LA not allowed flag" in the VLR (see subclause 2.4.13) and the "MSC area restricted flag" in the HLR (see subclause 2.4.12); ~~or the "LA not allowed flag" in the SGSN (see subclause 2.4.12) and the "SGSN area restricted flag" in the HLR (see subclause 2.4.13);~~ see [also](#) GSM 09.02.

The flag "roaming restriction due to unsupported feature" is temporary subscriber data stored in the VLR, ~~SGSN~~ and in the HLR.

[2.4.15.3 Roaming restricted in the SGSN due to unsupported feature](#)

[Roaming restricted in the SGSN due to unsupported feature is a parameter which indicates that one or several services or features are not supported by the SGSN, resulting in roaming restriction in the SGSN area. It can take either of the following values:](#)

- [- roaming restricted;](#)
- [- roaming not restricted.](#)

[The parameter governs the "RA not allowed flag" in the SGSN \(see subclause 2.4.14a\) and the "SGSN area restricted flag" in the HLR \(see subclause 2.4.14\); see also GSM 09.02.](#)

The flag "roaming restricted in the SGSN due to unsupported feature" is temporary subscriber data stored in the SGSN and in the HLR.

***** Next modified section *****

Table 2: Overview of data used for GPRS Network Access Mode

| PARAMETER | Subclause | HLR | VLR | SGSN | GGSN TYPE | |
|--|-----------|-----|--------|--------|-----------|----------|
| IMSI | 2.1.1.1 | M | M | M | M | P Note |
| Network Access Mode | 2.1.1.2 | M | - | C (a) | - | P Note |
| International MS ISDN number | 2.1.2 | M | M | M | - | T |
| multinumbering MSISDNs | 2.1.3 | C | - | - | - | T Note |
| Basic MSISDN indicator | 2.1.3.1 | C | - | - | - | T . |
| MSISDN-Alert indicator | 2.1.3.2 | C | - | - | - | T |
| P-TMSI | 2.1.5 | - | - | C | - | T Note |
| TLLI | 2.1.6 | - | - | C | - | T |
| Random TLLI | 2.1.7 | - | - | C | - | T Note |
| IMEI | 2.1.9 | - | - | C | - | T |
| RAND/SRES and Kc | 2.3.1 | M | - | M | - | T |
| Ciphering Key Sequence Number | 2.3.2 | - | - | M | - | T |
| Selected Ciphering Algorithm | 2.3.3 | - | - | M | - | T |
| Current Kc | 2.3.4 | - | - | M | - | T |
| P-TMSI Signature | 2.3.5 | - | - | C | - | T |
| Routing Area Identity | 2.4.3 | - | - | M | - | T |
| Cell Global Identification | 2.4.4 | - | - | C | - | T |
| VLR Number | 2.4.5 | M | - | C (Gs) | - | T |
| SGSN Number | 2.4.8.1 | M | C (Gs) | - | - | T Note |
| GGSN Number | 2.4.8.2 | M | - | - | - | P Note |
| RSZI Lists | 2.4.10.1 | C | - | - | - | P |
| Zone Code List | 2.4.10.2 | - | - | C | - | P |
| RA not allowed flag | 2.4.14a2 | - | - | M | - | T |
| SGSN area restricted flag | 2.4.143 | M | - | - | - | T |
| Roaming Restriction in the SGSN due to unsupported feature | 2.4.15.32 | M | - | M | - | T |
| Cell ID | 2.4.16 | - | - | C | - | T |
| LSA Identity | 2.4.17.1 | C | C | C | - | P |
| LSA Priority | 2.4.17.2 | C | C | C | - | P |
| LSA Preferential Access Indicator | 2.4.17.2A | C | C | C | - | P |
| LSA Active Mode Support Indicator | 2.4.17.2B | C | C | C | - | P |
| LSA Only Access Indicator | 2.4.17.3 | C | C | C | - | P |
| LSA Active Mode Indicator | 2.4.17.4 | C | C | C | - | P |
| VPLMN Identifier | 2.4.17.5 | C | - | - | - | P |
| Provision of teleservice | 2.5.2 | C | - | C | - | P |
| Transfer of SM option | 2.5.4 | M | - | - | - | P |
| MNRG | 2.7.2 | M | - | M | M | T |
| MM State | 2.7.3 | - | - | M | - | T |
| Subscriber Data Confirmed by HLR Indicator | 2.7.4.2 | - | - | M | - | T |
| Location Info Confirmed by HLR Indicator | 2.7.4.3 | - | - | M | - | T |
| MS purged for GPRS flag | 2.7.6 | M | - | - | - | T |
| MNRR | 2.7.7 | C | - | - | - | T |
| Subscriber Status | 2.8.1 | C | - | C | - | P |
| Barring of outgoing calls | 2.8.2.1 | C | - | C | - | P |
| Barring of roaming | 2.8.2.3 | C | - | C | - | P |
| ODB PLMN-specific data | 2.8.3 | C | - | - | - | P |
| Trace Activated in SGSN | 2.11.7 | C | - | C | - | P |
| PDP Type | 2.13.1 | C | - | C | M | P |
| PDP Address | 2.13.2 | C | - | C | M | P |
| NSAPI | 2.13.3 | - | - | C | C | T |
| PDP State | 2.13.4 | - | - | C | - | T |
| New SGSN Address | 2.13.5 | - | - | C | - | T |
| Access Point Name | 2.13.6 | C | - | C | C | P/T Note |
| GGSN Address in Use | 2.13.7 | - | - | C | - | T |
| VPLMN Address Allowed | 2.13.8 | C | - | C | - | P |
| Dynamic Address | 2.13.9 | - | - | - | C | T |
| SGSN Address | 2.13.10 | - | - | - | M | T |
| GGSN-list | 2.13.11 | M | - | - | - | T |
| (continued) | | | | | | |

Table 2 (concluded): Overview of data used for GPRS Network Access Mode

| PARAMETER | Subclause | HLR | VLR | SGSN | GGSN TYPE | |
|-------------------------------|-----------|-----|-----|--------|-----------|---|
| Quality of Service Subscribed | 2.13.12 | C | - | C | - | P |
| Quality of Service Requested | 2.13.13 | - | - | C | - | T |
| Quality of Service Negotiated | 2.13.14 | - | - | C | M | T |
| SND | 2.13.15 | - | - | C | C | T |
| SNU | 2.13.16 | - | - | C | C | T |
| DRX Parameters | 2.13.17 | - | - | M | - | T |
| Compression | 2.13.18 | - | - | C | - | T |
| NGAF | 2.13.19 | - | - | C (Gs) | - | T |
| Classmark | 2.13.20 | - | - | M | - | T |
| TID | 2.13.21 | - | - | C | C | T |
| Radio Priority | 2.13.22 | - | - | C | - | T |
| Radio Priority SMS | 2.13.23 | - | - | C | - | T |
| PDP Context Identifier | 2.13.24 | C | | C | | T |

***** End of document *****

CHANGE REQUEST

⌘ **23.008 CR 119** ⌘ rev **-** ⌘ Current version: **3.7.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

| | | |
|------------------------|---|---|
| Title: | ⌘ | Distinction between Roaming Restriction Due To Unsupported Feature and Roaming Restricted in the SGSN Due To Unsupported Feature |
| Source: | ⌘ | Vodafone |
| Work item code: | ⌘ | TEI |
| | | Date: ⌘ 04/04/2003 |
| Category: | ⌘ | A |
| | | Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction 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 . |
| | | Release: ⌘ R99 Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) |

| | | |
|--------------------------------------|---|--|
| Reason for change: | ⌘ | GSM 03.16 and GSM 09.02 both show Roaming Restriction Due To Unsupported Feature (which applies to the VLR) and Roaming Restricted in the SGSN Due To Unsupported Feature (which applies to the SGSN) as distinct items of subscriber data. However GSM 03.08 shows Roaming Restriction Due To Unsupported Feature as applying to both the VLR and the SGSN, with the same data item in the HLR replicated in the SGSN and the VLR. It is possible for the SGSN to support all the features required for a subscriber, so that service is allowed in the SGSN, when the VLR fails to support a critical feature, so that service is not allowed in the VLR (or vice versa). Distinct indicators are required in the HLR. The concept of Location Area is not used in the SGSN; the counterpart in the SGSN of "Location Area not allowed" is "Routeing Area not allowed". |
| Summary of change: | ⌘ | Limit subclause on "Roaming Restriction due to unsupported feature" to the VLR; add new subclause for "Roaming Restricted in the SGSN due to unsupported feature". Limit subclause on "LA not allowed" to the VLR; add new subclause for "RA not allowed" |
| Consequences if not approved: | ⌘ | Unnecessary linkage between roaming restriction due to unsupported feature in the VLR and roaming restriction due to unsupported feature in the SGSN. Subscribers will be unnecessarily denied service. |

| | | | | | | | | | | | | |
|------------------------------|---|--|---|---|--|---|--|---|--|---|---------------------------|---|
| Clauses affected: | ⌘ | 2.4.13; 2.4.14a (new); 2.4.15; 2.4.15.2; 2.4.15.3 (new); Table 2 | | | | | | | | | | |
| Other specs affected: | ⌘ | <table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> | Y | N | | X | | X | | X | Other core specifications | ⌘ |
| | | Y | N | | | | | | | | | |
| | | | X | | | | | | | | | |
| | | | X | | | | | | | | | |
| | X | | | | | | | | | | | |
| | X | Test specifications | | | | | | | | | | |
| | X | O&M Specifications | | | | | | | | | | |
| Other comments: | ⌘ | | | | | | | | | | | |

***** First modified section *****

2.4.12 MSC area restricted flag

MSC area restricted flag is a parameter which can take either of the following values:

- MSC area restricted;
- MSC area not restricted.

The parameter is set in the HLR during updating of the VLR. Handling of unsupported services and information received from the VLR based on national roaming or regionally restricted subscription (subclause 2.4.11) determine its value. The parameter contributes to the "MS Not Reachable" state for handling of terminating traffic in the HLR. The default value is "MSC area not restricted".

The MSC area restricted flag is temporary subscriber data and is contained in the HLR.

2.4.13 LA not allowed flag

The LA not allowed flag is set in the VLR ~~and the SGSN~~ depending on National Roaming, Regionally Restricted Subscription and Roaming Restriction Due To Un~~S~~upported Feature, see 3GPP TS 29.002. It is applied to restrict service on a location area basis.

The LA not allowed flag is temporary subscriber data stored in the VLR ~~and the SGSN~~.

2.4.14 SGSN area restricted flag

SGSN area restricted flag is a parameter which can take either of the following values:

- SGSN area restricted;
- SGSN area not restricted.

The parameter is set in the HLR during updating of the SGSN. Handling of unsupported services and information received from the SGSN based on national roaming or regionally restricted subscription (subclause 2.4.11) determine its value. The parameter contributes to the "MS Not Reachable" state for handling of terminating traffic in the HLR. The default value is "SGSN area not restricted".

The SGSN area restricted flag is temporary subscriber data and is contained in the HLR.

2.4.14a RA not allowed flag

The RA not allowed flag is set in the SGSN depending on National Roaming, Regionally Restricted Subscription and Roaming Restriction in the SGSN Due To Unsupported Feature, see 3GPP TS 29.002. It is applied to restrict service on a location area basis.

The RA not allowed flag is temporary subscriber data stored in the SGSN.

2.4.15 Service restriction data induced by roaming

If in the course of roaming or at updating of the VLR or SGSN the HLR is informed that the VLR or SGSN does not support certain sensitive services or features, or, the HLR is informed in data request that the VLR or the SGSN supports only specific services, features or phases which do not correspond to subscribed services, features or phases, the HLR takes appropriate measures to restrict service for the mobile station in that VLR or SGSN by setting and sending network induced replacing services such as available services, features or phases, barring programs or the roaming restriction for the MSC or SGSN area.

These network-induced data have to be kept separate in the HLR, and where possible as discussed below in the VLR, from the permanent subscriber data of the call barring supplementary services, from the barring related data that can be modified by the subscriber or from the permanent regional subscription data.

These network-induced data have to be kept separate in the HLR, and where possible as discussed below in the SGSN, from the permanent regional subscription data.

The network induced data take precedence over the subscriber data of the user where they are in conflict. If, in the course of roaming, restrictions caused by a service are lifted, the original subscriber data have to be re-installed both in HLR, in SGSN and in VLR when applicable, regarding any remaining restrictions due to other service replacements.

All network-induced restriction data are temporary subscriber data.

For ODB, 3GPP TS 23.015 recommends mainly barring programs to replace this feature. The replacing barring data are conditionally stored in the HLR and VLR. In the VLR they cannot be distinguished from the permanent supplementary services data with the available signalling means, and no additional storage is needed. Interrogation shall reflect in both HLR and VLR the valid setting of the replacing temporary data; to prevent interference with Subscriber Controlled Input and to inform the customer on the restriction, the "control of barring services" subscription option is also temporarily set to the value "by the service provider".

CUG is also replaced by Outgoing Call Barring as described in 3GPP TS 23.085.

Roaming restriction in the MSC area due to unsupported features is used to replace AoCC, see 3GPP TS 23.086, and Zone Codes for regional subscription, see subclause 2.4.11 and 3GPP TS 29.002. A flag in [the HLR](#) and [the VLR](#), see subclause 2.4.15.2, collects the sources of network-induced roaming restriction which are also kept separate by the HLR.

Roaming restriction in the SGSN area due to unsupported features is used to replace Zone Codes for regional subscription, see subclause 2.4.11 and 3GPP TS 29.002. A flag in [the HLR](#) and [the SGSN](#), see subclause 2.4.15.3, collects the sources of network-induced roaming restriction which are also kept separate by the HLR.

2.4.15.1 ODB-induced barring data

ODB-induced barring data are temporary data stored conditionally in the HLR; they include the necessary replacing barring programs for outgoing and incoming calls depending on the ODB profile. The subscription option "control of barring services" is set to "by the service provider". The corresponding barring supplementary services for outgoing calls are set by the HLR and sent to the VLR.

2.4.15.2 Roaming restriction due to unsupported feature

Roaming restriction due to unsupported feature is a parameter which indicates that one or several services or features are not supported by the MSC ~~or the SGSN~~, resulting in roaming restriction in the MSC area ~~or SGSN area~~. It can take either of the following values:

- roaming restricted;
- roaming not restricted.

The parameter governs the "LA not allowed flag" in the VLR (see subclause 2.4.13) and the "MSC area restricted flag" in the HLR (see subclause 2.4.12); ~~or the "LA not allowed flag" in the SGSN (see subclause 2.4.13) and the "SGSN area restricted flag" in the HLR (see subclause 2.4.14)~~; see [also](#) 3GPP TS 29.002.

The flag "roaming restriction due to unsupported feature" is temporary subscriber data stored in the VLR, ~~SGSN~~ and in the HLR.

[2.4.15.3 Roaming restricted in the SGSN due to unsupported feature](#)

[Roaming restricted in the SGSN due to unsupported feature is a parameter which indicates that one or several services or features are not supported by the SGSN, resulting in roaming restriction in the SGSN area. It can take either of the following values:](#)

- [- roaming restricted;](#)
- [- roaming not restricted.](#)

[The parameter governs the "RA not allowed flag" in the SGSN \(see subclause 2.4.14a\) and the "SGSN area restricted flag" in the HLR \(see subclause 2.4.14\); see also 3GPP TS 29.002.](#)

The flag "roaming restricted in the SGSN due to unsupported feature" is temporary subscriber data stored in the SGSN and in the HLR.

***** Next modified section *****

Table 2: Overview of data used for GPRS Network Access Mode

| PARAMETER | Subclause | HLR | VLR | SGSN | GGSN | TYPE |
|--|-----------|-----|---------|---------|------|------|
| IMSI | 2.1.1.1 | M | M | M | M | P |
| Network Access Mode | 2.1.1.2 | M | - | C note1 | - | P |
| International MS ISDN number | 2.1.2 | M | M | M | M | T |
| multinumbering MSISDNs | 2.1.3 | C | - | - | - | T |
| Basic MSISDN indicator | 2.1.3.1 | C | - | - | - | T |
| MSISDN-Alert indicator | 2.1.3.2 | C | - | - | - | T |
| P-TMSI | 2.1.5 | - | - | C | - | T |
| TLLI | 2.1.6 | - | - | C | - | T |
| Random TLLI | 2.1.7 | - | - | C | - | T |
| IMEI | 2.1.9 | - | - | C | - | T |
| RAND/SRES and Kc | 2.3.1 | - | - | C | - | T |
| RAND, XRES, CK, IK, AUTN | 2.3.2 | M | - | C | - | T |
| Ciphering Key Sequence Number | 2.3.3 | - | - | M | - | T |
| Key Set Identifier (KSI) | 2.3.4 | - | - | M | - | T |
| Selected Ciphering Algorithm | 2.3.5 | - | - | M | - | T |
| Current Kc | 2.3.6 | - | - | M | - | T |
| P-TMSI Signature | 2.3.7 | - | - | C | - | T |
| Routing Area Identity | 2.4.3 | - | - | M | - | T |
| VLR Number | 2.4.5 | M | - | C note2 | - | T |
| SGSN Number | 2.4.8.1 | M | C note2 | - | - | T |
| GGSN Number | 2.4.8.2 | M | - | - | - | P |
| RSZI Lists | 2.4.11.1 | C | - | - | - | P |
| Zone Code List | 2.4.11.2 | - | - | C | - | P |
| RA not allowed flag | 2.4.14a3 | - | - | M | - | T |
| SGSN area restricted flag | 2.4.14 | M | - | - | - | T |
| Roaming Restriction in the SGSN due to unsupported feature | 2.4.15.32 | M | - | M | - | T |
| Cell Global ID or Service Area ID | 2.4.16 | - | - | C | - | T |
| LSA Identity | 2.4.17.1 | C | C | C | - | P |
| LSA Priority | 2.4.17.2 | C | C | C | - | P |
| LSA Preferential Access Indicator | 2.4.17.2A | C | C | C | - | P |
| LSA Active Mode Support Indicator | 2.4.17.2B | C | C | C | - | P |
| LSA Only Access Indicator | 2.4.17.3 | C | C | C | - | P |
| LSA Active Mode Indicator | 2.4.17.4 | C | C | C | - | P |
| VPLMN Identifier | 2.4.17.5 | C | - | - | - | P |
| Provision of teleservice | 2.5.2 | C | - | C | - | P |
| Transfer of SM option | 2.5.4 | M | - | - | - | P |
| MNRG | 2.7.2 | M | - | M | M | T |
| MM State | 2.7.3 | - | - | M | - | T |
| Subscriber Data Confirmed by HLR Indicator | 2.7.4.2 | - | - | M | - | T |
| Location Info Confirmed by HLR Indicator | 2.7.4.3 | - | - | M | - | T |
| MS purged for GPRS flag | 2.7.6 | M | - | - | - | T |
| MNRR | 2.7.7 | C | - | - | - | T |
| Subscriber Status | 2.8.1 | C | - | C | - | P |
| Barring of outgoing calls | 2.8.2.1 | C | - | - | - | P |
| Barring of roaming | 2.8.2.3 | C | - | C | - | P |
| ODB PLMN-specific data | 2.8.3 | C | - | C | - | P |
| Notification to CSE flag for ODB | 2.8.4 | C | - | - | - | T |
| gsmSCF address list for ODB | 2.8.5 | C | - | - | - | P |
| Trace Activated in SGSN | 2.11.7 | C | - | C | - | P |
| PDP Type | 2.13.1 | C | - | C | M | P |
| PDP Address | 2.13.2 | C | - | C | M | P |
| NSAPI | 2.13.3 | - | - | C | C | T |
| PDP State | 2.13.4 | - | - | C | - | T |
| New SGSN Address | 2.13.5 | - | - | C | - | T |
| Access Point Name | 2.13.6 | C | - | C | C | P/T |
| GGSN Address in Use | 2.13.7 | - | - | C | - | T |
| VPLMN Address Allowed | 2.13.8 | C | - | C | - | P |
| Dynamic Address | 2.13.9 | - | - | - | C | T |
| SGSN Address | 2.13.10 | - | - | - | M | T |
| GGSN-list | 2.13.11 | M | - | - | - | T |

| (continued) |

Table 2 (concluded): Overview of data used for GPRS Network Access Mode

| PARAMETER | Subclause | HLR | VLR | SGSN | GGSN | TYPE |
|--|--------------|-----|-----|---------|------|------|
| Quality of Service Subscribed | 2.13.12 | C | - | C | - | P |
| Quality of Service Requested | 2.13.13 | - | - | C | - | T |
| Quality of Service Negotiated | 2.13.14 | - | - | C | M | T |
| SND | 2.13.15 | - | - | C | C | T |
| SNU | 2.13.16 | - | - | C | C | T |
| DRX Parameters | 2.13.17 | - | - | M | - | T |
| Compression | 2.13.18 | - | - | C | - | T |
| NGAF | 2.13.19 | - | - | C note2 | - | T |
| Classmark | 2.13.20 | - | - | M | - | T |
| TEID | 2.13.21 | - | - | C | C | T |
| Radio Priority | 2.13.22 | - | - | C | - | T |
| Radio Priority SMS | 2.13.23 | - | - | C | - | T |
| PDP Context Identifier | 2.13.24 | C | - | C | - | T |
| PDP Context Charging Characteristics | 2.13.25 | C | - | C | C | P |
| Short Message Service CAMEL Subscription Information (SMS-CSI) | 2.14.4.1/1.8 | C | - | C | - | P |
| GPRS CAMEL Subscription Information (GPRS-CSI) | 2.14.4.2/1.9 | C | - | C | - | C |
| SMS-CSI SGSN Negotiated CAMEL Capability Handling | 2.14.2.1 | C | - | - | - | T |
| GPRS-CSI Negotiated CAMEL Capability Handling | 2.14.2.1 | C | - | - | - | T |
| SGSN Supported CAMEL Phases | 2.14.2.3 | C | - | - | - | T |
| GsmSCF address for CSI | 2.14.2.4 | C | - | - | - | P |
| Age Indicator | 2.16.1 | C | - | C | - | T |
| Subscribed Charging Characteristics | 2.19.1 | C | - | C | C | P |

***** End of document *****

CHANGE REQUEST

⌘ **23.008 CR 120** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

| | | | |
|------------------------|---|---|---|
| Title: | ⌘ | Distinction between Roaming Restriction Due To Unsupported Feature and Roaming Restricted in the SGSN Due To Unsupported Feature | |
| Source: | ⌘ | Vodafone | |
| Work item code: | ⌘ | TEI | Date: ⌘ 04/04/2003 |
| Category: | ⌘ | A | Release: ⌘ Rel-4 |
| | | Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction 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 . | Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) |

| | | |
|--------------------------------------|---|--|
| Reason for change: | ⌘ | GSM 03.16 and GSM 09.02 both show Roaming Restriction Due To Unsupported Feature (which applies to the VLR) and Roaming Restricted in the SGSN Due To Unsupported Feature (which applies to the SGSN) as distinct items of subscriber data. However GSM 03.08 shows Roaming Restriction Due To Unsupported Feature as applying to both the VLR and the SGSN, with the same data item in the HLR replicated in the SGSN and the VLR. It is possible for the SGSN to support all the features required for a subscriber, so that service is allowed in the SGSN, when the VLR fails to support a critical feature, so that service is not allowed in the VLR (or vice versa). Distinct indicators are required in the HLR. The concept of Location Area is not used in the SGSN; the counterpart in the SGSN of "Location Area not allowed" is "Routeing Area not allowed". |
| Summary of change: | ⌘ | Limit subclause on "Roaming Restriction due to unsupported feature" to the VLR; add new subclause for "Roaming Restricted in the SGSN due to unsupported feature". Limit subclause on "LA not allowed" to the VLR; add new subclause for "RA not allowed" |
| Consequences if not approved: | ⌘ | Unnecessary linkage between roaming restriction due to unsupported feature in the VLR and roaming restriction due to unsupported feature in the SGSN. Subscribers will be unnecessarily denied service. |

| | | | | | | | | | | | | |
|------------------------------|---|--|---|---|--|---|--|---|--|---|---------------------------|---|
| Clauses affected: | ⌘ | 2.4.13; 2.4.14a (new); 2.4.15; 2.4.15.2; 2.4.15.3 (new); Table 2 | | | | | | | | | | |
| Other specs affected: | ⌘ | <table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> | Y | N | | X | | X | | X | Other core specifications | ⌘ |
| | | Y | N | | | | | | | | | |
| | | | X | | | | | | | | | |
| | | | X | | | | | | | | | |
| | X | | | | | | | | | | | |
| | X | Test specifications | | | | | | | | | | |
| | X | O&M Specifications | | | | | | | | | | |
| Other comments: | ⌘ | | | | | | | | | | | |

***** First modified section *****

2.4.12 MSC area restricted flag

MSC area restricted flag is a parameter which can take either of the following values:

- MSC area restricted;
- MSC area not restricted.

The parameter is set in the HLR during updating of the VLR. Handling of unsupported services and information received from the VLR based on national roaming or regionally restricted subscription (subclause 2.4.11) determine its value. The parameter contributes to the "MS Not Reachable" state for handling of terminating traffic in the HLR. The default value is "MSC area not restricted".

The MSC area restricted flag is temporary subscriber data and is contained in the HLR.

2.4.13 LA not allowed flag

The LA not allowed flag is set in the VLR ~~and the SGSN~~ depending on National Roaming, Regionally Restricted Subscription and Roaming Restriction Due To Un~~S~~upported Feature, see 3GPP TS 29.002. It is applied to restrict service on a location area basis.

The LA not allowed flag is temporary subscriber data stored in the VLR ~~and the SGSN~~.

2.4.14 SGSN area restricted flag

SGSN area restricted flag is a parameter which can take either of the following values:

- SGSN area restricted;
- SGSN area not restricted.

The parameter is set in the HLR during updating of the SGSN. Handling of unsupported services and information received from the SGSN based on national roaming or regionally restricted subscription (subclause 2.4.11) determine its value. The parameter contributes to the "MS Not Reachable" state for handling of terminating traffic in the HLR. The default value is "SGSN area not restricted".

The SGSN area restricted flag is temporary subscriber data and is contained in the HLR.

2.4.14a RA not allowed flag

The RA not allowed flag is set in the SGSN depending on National Roaming, Regionally Restricted Subscription and Roaming Restriction in the SGSN Due To Un~~S~~upported Feature, see 3GPP TS 29.002. It is applied to restrict service on a location area basis.

The RA not allowed flag is temporary subscriber data stored in the SGSN.

2.4.15 Service restriction data induced by roaming

If in the course of roaming or at updating of the VLR or SGSN the HLR is informed that the VLR or SGSN does not support certain sensitive services or features, or, the HLR is informed in data request that the VLR or the SGSN supports only specific services, features or phases which do not correspond to subscribed services, features or phases, the HLR takes appropriate measures to restrict service for the mobile station in that VLR or SGSN by setting and sending network induced replacing services such as available services, features or phases, barring programs or the roaming restriction for the MSC or SGSN area.

These network-induced data have to be kept separate in the HLR, and where possible as discussed below in the VLR, from the permanent subscriber data of the call barring supplementary services, from the barring related data that can be modified by the subscriber or from the permanent regional subscription data.

These network-induced data have to be kept separate in the HLR, and where possible as discussed below in the SGSN, from the permanent regional subscription data.

The network induced data take precedence over the subscriber data of the user where they are in conflict. If, in the course of roaming, restrictions caused by a service are lifted, the original subscriber data have to be re-installed both in HLR, in SGSN and in VLR when applicable, regarding any remaining restrictions due to other service replacements.

All network-induced restriction data are temporary subscriber data.

For ODB, 3GPP TS 23.015 recommends mainly barring programs to replace this feature. The replacing barring data are conditionally stored in the HLR and VLR. In the VLR they cannot be distinguished from the permanent supplementary services data with the available signalling means, and no additional storage is needed. Interrogation shall reflect in both HLR and VLR the valid setting of the replacing temporary data; to prevent interference with Subscriber Controlled Input and to inform the customer on the restriction, the "control of barring services" subscription option is also temporarily set to the value "by the service provider".

CUG is also replaced by Outgoing Call Barring as described in 3GPP TS 23.085.

Roaming restriction in the MSC area due to unsupported features is used to replace AoCC, see 3GPP TS 23.086, and Zone Codes for regional subscription, see subclause 2.4.11 and 3GPP TS 29.002. A flag in [the HLR](#) and [the VLR](#), see subclause 2.4.15.2, collects the sources of network-induced roaming restriction which are also kept separate by the HLR.

Roaming restriction in the SGSN area due to unsupported features is used to replace Zone Codes for regional subscription, see subclause 2.4.11 and 3GPP TS 29.002. A flag in [the HLR](#) and [the SGSN](#), see subclause 2.4.15.3, collects the sources of network-induced roaming restriction which are also kept separate by the HLR.

2.4.15.1 ODB-induced barring data

ODB-induced barring data are temporary data stored conditionally in the HLR; they include the necessary replacing barring programs for outgoing and incoming calls depending on the ODB profile. The subscription option "control of barring services" is set to "by the service provider". The corresponding barring supplementary services for outgoing calls are set by the HLR and sent to the VLR.

2.4.15.2 Roaming restriction due to unsupported feature

Roaming restriction due to unsupported feature is a parameter which indicates that one or several services or features are not supported by the MSC ~~or the SGSN~~, resulting in roaming restriction in the MSC area ~~or SGSN area~~. It can take either of the following values:

- roaming restricted;
- roaming not restricted.

The parameter governs the "LA not allowed flag" in the VLR (see subclause 2.4.13) and the "MSC area restricted flag" in the HLR (see subclause 2.4.12); ~~or the "LA not allowed flag" in the SGSN (see subclause 2.4.13) and the "SGSN area restricted flag" in the HLR (see subclause 2.4.14)~~; see [also](#) 3GPP TS 29.002.

The flag "roaming restriction due to unsupported feature" is temporary subscriber data stored in the VLR, ~~SGSN~~ and in the HLR.

[2.4.15.3 Roaming restricted in the SGSN due to unsupported feature](#)

[Roaming restricted in the SGSN due to unsupported feature is a parameter which indicates that one or several services or features are not supported by the SGSN, resulting in roaming restriction in the SGSN area. It can take either of the following values:](#)

- [- roaming restricted;](#)
- [- roaming not restricted.](#)

[The parameter governs the "RA not allowed flag" in the SGSN \(see subclause 2.4.14a\) and the "SGSN area restricted flag" in the HLR \(see subclause 2.4.14\); see 3GPP TS 29.002.](#)

The flag "roaming restricted in the SGSN due to unsupported feature" is temporary subscriber data stored in the SGSN and in the HLR.

| |
|--------------------------------------|
| *** Next modified section *** |
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Table 2: Overview of data used for GPRS Network Access Mode

| PARAMETER | Subclause | HLR | VLR | SGSN | GGSN | TYPE |
|--|-----------|-----|---------|---------|------|------|
| IMSI | 2.1.1.1 | M | M | M | M | P |
| Network Access Mode | 2.1.1.2 | M | - | C note1 | - | P |
| International MS ISDN number | 2.1.2 | M | M | M | M | T |
| multinumbering MSISDNs | 2.1.3 | C | - | - | - | T |
| Basic MSISDN indicator | 2.1.3.1 | C | - | - | - | T |
| MSISDN-Alert indicator | 2.1.3.2 | C | - | - | - | T |
| P-TMSI | 2.1.5 | - | - | C | - | T |
| TLLI | 2.1.6 | - | - | C | - | T |
| Random TLLI | 2.1.7 | - | - | C | - | T |
| IMEI | 2.1.9 | - | - | C | - | T |
| RAND/SRES and Kc | 2.3.1 | - | - | C | - | T |
| RAND, XRES, CK, IK, AUTN | 2.3.2 | M | - | C | - | T |
| Ciphering Key Sequence Number | 2.3.3 | - | - | M | - | T |
| Key Set Identifier (KSI) | 2.3.4 | - | - | M | - | T |
| Selected Ciphering Algorithm | 2.3.5 | - | - | M | - | T |
| Current Kc | 2.3.6 | - | - | M | - | T |
| P-TMSI Signature | 2.3.7 | - | - | C | - | T |
| Routing Area Identity | 2.4.3 | - | - | M | - | T |
| VLR Number | 2.4.5 | M | - | C note2 | - | T |
| SGSN Number | 2.4.8.1 | M | C note2 | - | - | T |
| GGSN Number | 2.4.8.2 | M | - | - | - | P |
| RSZI Lists | 2.4.11.1 | C | - | - | - | P |
| Zone Code List | 2.4.11.2 | - | - | C | - | P |
| RA not allowed flag | 2.4.14a3 | - | - | M | - | T |
| SGSN area restricted flag | 2.4.14 | M | - | - | - | T |
| Roaming Restriction in the SGSN due to unsupported feature | 2.4.15.32 | M | - | M | - | T |
| Cell Global ID or Service Area ID | 2.4.16 | - | - | C | - | T |
| LSA Identity | 2.4.17.1 | C | C | C | - | P |
| LSA Priority | 2.4.17.2 | C | C | C | - | P |
| LSA Preferential Access Indicator | 2.4.17.2A | C | C | C | - | P |
| LSA Active Mode Support Indicator | 2.4.17.2B | C | C | C | - | P |
| LSA Only Access Indicator | 2.4.17.3 | C | C | C | - | P |
| LSA Active Mode Indicator | 2.4.17.4 | C | C | C | - | P |
| VPLMN Identifier | 2.4.17.5 | C | - | - | - | P |
| Provision of teleservice | 2.5.2 | C | - | C | - | P |
| Transfer of SM option | 2.5.4 | M | - | - | - | P |
| MNRG | 2.7.2 | M | - | M | M | T |
| MM State | 2.7.3 | - | - | M | - | T |
| Subscriber Data Confirmed by HLR Indicator | 2.7.4.2 | - | - | M | - | T |
| Location Info Confirmed by HLR Indicator | 2.7.4.3 | - | - | M | - | T |
| MS purged for GPRS flag | 2.7.6 | M | - | - | - | T |
| MNRR | 2.7.7 | C | - | - | - | T |
| Subscriber Status | 2.8.1 | C | - | C | - | P |
| Barring of outgoing calls | 2.8.2.1 | C | - | - | - | P |
| Barring of roaming | 2.8.2.3 | C | - | C | - | P |
| Barring of Packet Oriented Services | 2.8.2.8 | C | - | C | - | P |
| ODB PLMN-specific data | 2.8.3 | C | - | C | - | P |
| Notification to CSE flag for ODB | 2.8.4 | C | - | - | - | T |
| gsmSCF address list for ODB | 2.8.5 | C | - | - | - | P |
| Trace Activated in SGSN | 2.11.7 | C | - | C | - | P |
| PDP Type | 2.13.1 | C | - | C | M | P |
| PDP Address | 2.13.2 | C | - | C | M | P |
| NSAPI | 2.13.3 | - | - | C | C | T |
| PDP State | 2.13.4 | - | - | C | - | T |
| New SGSN Address | 2.13.5 | - | - | C | - | T |
| Access Point Name | 2.13.6 | C | - | C | C | P/T |
| GGSN Address in Use | 2.13.7 | - | - | C | - | T |
| VPLMN Address Allowed | 2.13.8 | C | - | C | - | P |
| Dynamic Address | 2.13.9 | - | - | - | C | T |
| SGSN Address | 2.13.10 | - | - | - | M | T |
| GGSN-list | 2.13.11 | M | - | - | - | T |

| PARAMETER | Subclause | HLR | VLR | SGSN | GGSN | TYPE |
|--|--------------|-----|-----|---------|------|------|
| Quality of Service Subscribed | 2.13.12 | C | - | C | - | P |
| Quality of Service Requested | 2.13.13 | - | - | C | - | T |
| Quality of Service Negotiated | 2.13.14 | - | - | C | M | T |
| SND | 2.13.15 | - | - | C | C | T |
| SNU | 2.13.16 | - | - | C | C | T |
| DRX Parameters | 2.13.17 | - | - | M | - | T |
| Compression | 2.13.18 | - | - | C | - | T |
| NGAF | 2.13.19 | - | - | C note2 | - | T |
| Classmark | 2.13.20 | - | - | M | - | T |
| TEID | 2.13.21 | - | - | C | C | T |
| Radio Priority | 2.13.22 | - | - | C | - | T |
| Radio Priority SMS | 2.13.23 | - | - | C | - | T |
| PDP Context Identifier | 2.13.24 | C | - | C | - | T |
| PDP Context Charging Characteristics | 2.13.25 | C | - | C | C | P |
| Short Message Service CAMEL Subscription Information (SMS-CSI) | 2.14.4.1/1.8 | C | - | C | - | P |
| GPRS CAMEL Subscription Information (GPRS-CSI) | 2.14.4.2/1.9 | C | - | C | - | C |
| SMS-CSI SGSN Negotiated CAMEL Capability Handling | 2.14.2.1 | C | - | - | - | T |
| GPRS-CSI Negotiated CAMEL Capability Handling | 2.14.2.1 | C | - | - | - | T |
| SGSN Supported CAMEL Phases | 2.14.2.3 | C | - | - | - | T |
| GsmSCF address for CSI | 2.14.2.4 | C | - | - | - | P |
| Age Indicator | 2.16.1 | C | - | C | - | T |
| Subscribed Charging Characteristics | 2.19.1 | C | - | C | C | P |
| Privacy Exception List | 2.16.1.1 | C | - | C | - | P |
| GMLC Numbers | 2.16.1.2 | C | - | C | - | P |
| MO-LR List | 2.16.1.3 | C | - | C | - | P |

***** End of document *****

CHANGE REQUEST

⌘ **23.008 CR 121** ⌘ rev **-** ⌘ Current version: **5.4.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

| | | | |
|------------------------|---|-----------------|---|
| Title: | ⌘ Distinction between Roaming Restriction Due To Unsupported Feature and Roaming Restricted in the SGSN Due To Unsupported Feature | | |
| Source: | ⌘ Vodafone | | |
| Work item code: | ⌘ TEI | Date: | ⌘ 04/04/2003 |
| Category: | ⌘ A | Release: | ⌘ Rel-5 |
| | Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction 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 . | | Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) |

| | |
|--------------------------------------|--|
| Reason for change: | ⌘ GSM 03.16 and GSM 09.02 both show Roaming Restriction Due To Unsupported Feature (which applies to the VLR) and Roaming Restricted in the SGSN Due To Unsupported Feature (which applies to the SGSN) as distinct items of subscriber data. However GSM 03.08 shows Roaming Restriction Due To Unsupported Feature as applying to both the VLR and the SGSN, with the same data item in the HLR replicated in the SGSN and the VLR. It is possible for the SGSN to support all the features required for a subscriber, so that service is allowed in the SGSN, when the VLR fails to support a critical feature, so that service is not allowed in the VLR (or vice versa). Distinct indicators are required in the HLR. The concept of Location Area is not used in the SGSN; the counterpart in the SGSN of "Location Area not allowed" is "Routeing Area not allowed". |
| Summary of change: | ⌘ Limit subclause on "Roaming Restriction due to unsupported feature" to the VLR; add new subclause for "Roaming Restricted in the SGSN due to unsupported feature". Limit subclause on "LA not allowed" to the VLR; add new subclause for "RA not allowed" |
| Consequences if not approved: | ⌘ Unnecessary linkage between roaming restriction due to unsupported feature in the VLR and roaming restriction due to unsupported feature in the SGSN. Subscribers will be unnecessarily denied service. |

| | | | | | | | | | | | | |
|------------------------------|---|--|---|---|--|---|--|---|--|---|---------------------------|---|
| Clauses affected: | ⌘ | 2.4.13; 2.4.14a (new); 2.4.15; 2.4.15.2; 2.4.15.3 (new); 5.2 | | | | | | | | | | |
| Other specs affected: | ⌘ | <table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> | Y | N | | X | | X | | X | Other core specifications | ⌘ |
| | | Y | N | | | | | | | | | |
| | | | X | | | | | | | | | |
| | | | X | | | | | | | | | |
| | X | | | | | | | | | | | |
| | X | Test specifications | | | | | | | | | | |
| | X | O&M Specifications | | | | | | | | | | |
| Other comments: | ⌘ | | | | | | | | | | | |

***** First modified section *****

2.4.12 MSC area restricted flag

MSC area restricted flag is a parameter which can take either of the following values:

- MSC area restricted;
- MSC area not restricted.

The parameter is set in the HLR during updating of the VLR. Handling of unsupported services and information received from the VLR based on national roaming or regionally restricted subscription (subclause 2.4.11) determine its value. The parameter contributes to the "MS Not Reachable" state for handling of terminating traffic in the HLR. The default value is "MSC area not restricted".

The MSC area restricted flag is temporary subscriber data and is contained in the HLR.

2.4.13 LA not allowed flag

The LA not allowed flag is set in the VLR ~~and the SGSN~~ depending on National Roaming, Regionally Restricted Subscription and Roaming Restriction Due To Un~~S~~upported Feature, see 3GPP TS 29.002. It is applied to restrict service on a location area basis.

The LA not allowed flag is temporary subscriber data stored in the VLR ~~and the SGSN~~.

2.4.14 SGSN area restricted flag

SGSN area restricted flag is a parameter which can take either of the following values:

- SGSN area restricted;
- SGSN area not restricted.

The parameter is set in the HLR during updating of the SGSN. Handling of unsupported services and information received from the SGSN based on national roaming or regionally restricted subscription (subclause 2.4.11) determine its value. The parameter contributes to the "MS Not Reachable" state for handling of terminating traffic in the HLR. The default value is "SGSN area not restricted".

The SGSN area restricted flag is temporary subscriber data and is contained in the HLR.

2.4.14a RA not allowed flag

The LA not allowed flag is set in the SGSN depending on National Roaming, Regionally Restricted Subscription and Roaming Restriction in the SGSN Due To Un~~S~~upported Feature, see 3GPP TS 29.002. It is applied to restrict service on a location area basis.

The RA not allowed flag is temporary subscriber data stored in the SGSN.

2.4.15 Service restriction data induced by roaming

If in the course of roaming or at updating of the VLR or SGSN the HLR is informed that the VLR or SGSN does not support certain sensitive services or features, or, the HLR is informed in data request that the VLR or the SGSN supports only specific services, features or phases which do not correspond to subscribed services, features or phases, the HLR takes appropriate measures to restrict service for the mobile station in that VLR or SGSN by setting and sending network induced replacing services such as available services, features or phases, barring programs or the roaming restriction for the MSC or SGSN area.

These network-induced data have to be kept separate in the HLR, and where possible as discussed below in the VLR, from the permanent subscriber data of the call barring supplementary services, from the barring related data that can be modified by the subscriber or from the permanent regional subscription data.

These network-induced data have to be kept separate in the HLR, and where possible as discussed below in the SGSN, from the permanent regional subscription data.

The network induced data take precedence over the subscriber data of the user where they are in conflict. If, in the course of roaming, restrictions caused by a service are lifted, the original subscriber data have to be re-installed both in HLR, in SGSN and in VLR when applicable, regarding any remaining restrictions due to other service replacements.

All network-induced restriction data are temporary subscriber data.

For ODB, 3GPP TS 23.015 recommends mainly barring programs to replace this feature. The replacing barring data are conditionally stored in the HLR and VLR. In the VLR they cannot be distinguished from the permanent supplementary services data with the available signalling means, and no additional storage is needed. Interrogation shall reflect in both HLR and VLR the valid setting of the replacing temporary data; to prevent interference with Subscriber Controlled Input and to inform the customer on the restriction, the "control of barring services" subscription option is also temporarily set to the value "by the service provider".

CUG is also replaced by Outgoing Call Barring as described in 3GPP TS 23.085.

Roaming restriction in the MSC area due to unsupported features is used to replace AoCC, see 3GPP TS 23.086, and Zone Codes for regional subscription, see subclause 2.4.11 and 3GPP TS 29.002. A flag in [the HLR](#) and [the VLR](#), see subclause 2.4.15.2, collects the sources of network-induced roaming restriction which are also kept separate by the HLR.

Roaming restriction in the SGSN area due to unsupported features is used to replace Zone Codes for regional subscription, see subclause 2.4.11 and 3GPP TS 29.002. A flag in [the HLR](#) and [the SGSN](#), see subclause 2.4.15.3, collects the sources of network-induced roaming restriction which are also kept separate by the HLR.

2.4.15.1 ODB-induced barring data

ODB-induced barring data are temporary data stored conditionally in the HLR; they include the necessary replacing barring programs for outgoing and incoming calls depending on the ODB profile. The subscription option "control of barring services" is set to "by the service provider". The corresponding barring supplementary services for outgoing calls are set by the HLR and sent to the VLR.

2.4.15.2 Roaming restriction due to unsupported feature

Roaming restriction due to unsupported feature is a parameter which indicates that one or several services or features are not supported by the MSC ~~or the SGSN~~, resulting in roaming restriction in the MSC area ~~or SGSN area~~. It can take either of the following values:

- roaming restricted;
- roaming not restricted.

The parameter governs the "LA not allowed flag" in the VLR (see subclause 2.4.13) and the "MSC area restricted flag" in the HLR (see subclause 2.4.12); ~~or the "LA not allowed flag" in the SGSN (see subclause 2.4.13) and the "SGSN area restricted flag" in the HLR (see subclause 2.4.14)~~; see [also](#) 3GPP TS 29.002.

The flag "roaming restriction due to unsupported feature" is temporary subscriber data stored in the VLR, ~~SGSN~~ and in the HLR.

[2.4.15.3 Roaming restricted in the SGSN due to unsupported feature](#)

[Roaming restricted in the SGSN due to unsupported feature is a parameter which indicates that one or several services or features are not supported by the SGSN, resulting in roaming restriction in the SGSN area. It can take either of the following values:](#)

- [- roaming restricted;](#)
- [- roaming not restricted.](#)

[The parameter governs the "RA not allowed flag" in the SGSN \(see subclause 2.4.14a\) and the "SGSN area restricted flag" in the HLR \(see subclause 2.4.14\); see also 3GPP TS 29.002.](#)

The flag "roaming restricted in the SGSN due to unsupported feature" is temporary subscriber data stored in the SGSN and in the HLR.

***** Next modified section *****

5.2 GPRS Network Access Mode Storage

Table 2: Overview of data used for GPRS Network Access Mode

| PARAMETER | Subclause | HLR | VLR | SGSN | GGSN | TYPE |
|--|-----------|-----|---------|---------|------|------|
| IMSI | 2.1.1.1 | M | M | M | M | P |
| Network Access Mode | 2.1.1.2 | M | - | C note1 | - | P |
| International MS ISDN number | 2.1.2 | M | M | M | M | T |
| multinumbering MSISDNs | 2.1.3 | C | - | - | - | T |
| Basic MSISDN indicator | 2.1.3.1 | C | - | - | - | T |
| MSISDN-Alert indicator | 2.1.3.2 | C | - | - | - | T |
| P-TMSI | 2.1.5 | - | - | C | - | T |
| TLLI | 2.1.6 | - | - | C | - | T |
| Random TLLI | 2.1.7 | - | - | C | - | T |
| IMEI | 2.1.9 | - | - | C | - | T |
| RAND/SRES and Kc | 2.3.1 | - | - | C | - | T |
| RAND, XRES, CK, IK, AUTN | 2.3.2 | M | - | C | - | T |
| Ciphering Key Sequence Number | 2.3.3 | - | - | M | - | T |
| Key Set Identifier (KSI) | 2.3.4 | - | - | M | - | T |
| Selected Ciphering Algorithm | 2.3.5 | - | - | M | - | T |
| Current Kc | 2.3.6 | - | - | M | - | T |
| P-TMSI Signature | 2.3.7 | - | - | C | - | T |
| Routing Area Identity | 2.4.3 | - | - | M | - | T |
| VLR Number | 2.4.5 | M | - | C note2 | - | T |
| SGSN Number | 2.4.8.1 | M | C note2 | - | - | T |
| GGSN Number | 2.4.8.2 | M | - | - | - | P |
| RSZI Lists | 2.4.11.1 | C | - | - | - | P |
| Zone Code List | 2.4.11.2 | - | - | C | - | P |
| RA not allowed flag | 2.4.14a3 | - | - | M | - | T |
| SGSN area restricted flag | 2.4.14 | M | - | - | - | T |
| Roaming Restriction in the SGSN due to unsupported feature | 2.4.15.32 | M | - | M | - | T |
| Cell Global ID or Service Area ID | 2.4.16 | - | - | C | - | T |
| LSA Identity | 2.4.17.1 | C | C | C | - | P |
| LSA Priority | 2.4.17.2 | C | C | C | - | P |
| LSA Preferential Access Indicator | 2.4.17.2A | C | C | C | - | P |
| LSA Active Mode Support Indicator | 2.4.17.2B | C | C | C | - | P |
| LSA Only Access Indicator | 2.4.17.3 | C | C | C | - | P |
| LSA Active Mode Indicator | 2.4.17.4 | C | C | C | - | P |
| VPLMN Identifier | 2.4.17.5 | C | - | - | - | P |
| Provision of teleservice | 2.5.2 | C | - | C | - | P |
| Transfer of SM option | 2.5.4 | M | - | - | - | P |
| MNRG | 2.7.2 | M | - | M | M | T |
| MM State | 2.7.3 | - | - | M | - | T |
| Subscriber Data Confirmed by HLR Indicator | 2.7.4.2 | - | - | M | - | T |
| Location Info Confirmed by HLR Indicator | 2.7.4.3 | - | - | M | - | T |
| MS purged for GPRS flag | 2.7.6 | M | - | - | - | T |
| MNRR | 2.7.7 | C | - | - | - | T |
| Subscriber Status | 2.8.1 | C | - | C | - | P |
| Barring of outgoing calls | 2.8.2.1 | C | - | - | - | P |
| Barring of roaming | 2.8.2.3 | C | - | C | - | P |
| Barring of Packet Oriented Services | 2.8.2.8 | C | - | C | - | P |
| ODB PLMN-specific data | 2.8.3 | C | - | C | - | P |
| Notification to CSE flag for ODB | 2.8.4 | C | - | - | - | T |
| gsmSCF address list for ODB | 2.8.5 | C | - | - | - | P |
| Trace Activated in SGSN | 2.11.7 | C | - | C | - | P |
| PDP Type | 2.13.1 | C | - | C | M | P |
| PDP Address | 2.13.2 | C | - | C | M | P |
| NSAPI | 2.13.3 | - | - | C | C | T |
| PDP State | 2.13.4 | - | - | C | - | T |
| New SGSN Address | 2.13.5 | - | - | C | - | T |
| Access Point Name | 2.13.6 | C | - | C | C | P/T |
| GGSN Address in Use | 2.13.7 | - | - | C | - | T |

| PARAMETER | Subclause | HLR | VLR | SGSN | GGSN | TYPE |
|---|--------------------|-----|-----|---------|------|------|
| VPLMN Address Allowed | 2.13.8 | C | - | C | - | P |
| Dynamic Address | 2.13.9 | - | - | - | C | T |
| SGSN Address | 2.13.10 | - | - | - | M | T |
| GGSN-list | 2.13.11 | M | - | - | - | T |
| Quality of Service Subscribed | 2.13.12 | C | - | C | - | P |
| Quality of Service Requested | 2.13.13 | - | - | C | - | T |
| Quality of Service Negotiated | 2.13.14 | - | - | C | M | T |
| SND | 2.13.15 | - | - | C | C | T |
| SNU | 2.13.16 | - | - | C | C | T |
| DRX Parameters | 2.13.17 | - | - | M | - | T |
| Compression | 2.13.18 | - | - | C | - | T |
| NGAF | 2.13.19 | - | - | C note2 | - | T |
| Classmark | 2.13.20 | - | - | M | - | T |
| TEID | 2.13.21 | - | - | C | C | T |
| Radio Priority | 2.13.22 | - | - | C | - | T |
| Radio Priority SMS | 2.13.23 | - | - | C | - | T |
| PDP Context Identifier | 2.13.24 | C | - | C | - | T |
| PDP Context Charging Characteristics | 2.13.25 | C | - | C | C | P |
| GPRS CAMEL Subscription Information (GPRS-CSI) | 2.14.1.10/2.14.4 | C | - | C | - | C |
| MO Short Message Service CAMEL Subscription Information(MO-SMS-CSI) | 2.14.1.8/2.14.4.1 | C | - | C | - | C |
| MT Short Message Service CAMEL Subscription Information(MT-SMS-CSI) | 2.14.1.9/2.14.4.2 | C | - | C | - | C |
| MO-SMS-CSI SGSN Negotiated CAMEL Capability Handling | 2.14.2.1 | C | - | - | - | P |
| MT-SMS-CSI SGSN Negotiated CAMEL Capability Handling | 2.14.2.1 | C | - | - | - | P |
| Mobility Management for GPRS event notification (MG-CSI) | 2.14.1.12/2.14.4.4 | C | - | C | - | C |
| MG-CSI Negotiated CAMEL Capability Handling | 2.14.2.1 | C | - | - | - | P |
| GPRS-CSI Negotiated CAMEL Capability Handling | 2.14.2.1 | C | - | - | - | T |
| SGSN Supported CAMEL Phases | 2.14.2.3 | C | - | - | - | T |
| SGSN Offered CAMEL4 CSIs | 2.14.2.2A | C | - | - | - | T |
| GsmSCF address for CSI | 2.14.2.4 | C | - | - | - | P |
| Age Indicator | 2.16.1 | C | - | C | - | T |
| Subscribed Charging Characteristics | 2.19.1 | C | - | C | C | P |
| Privacy Exception List | 2.16.1.1 | C | - | C | - | P |
| GMLC Numbers | 2.16.1.2 | C | - | C | - | P |
| MO-LR List | 2.16.1.3 | C | - | C | - | P |
| Service Types | 2.16.1.4 | C | - | C | - | P |

The HLR column indicates only GPRS related use, i.e. if the HLR uses a parameter in non-GPRS Network Access Mode but not in GPRS Network Access Mode, it is not mentioned in this table 2.

Note 1: This parameter is relevant in the SGSN only when the Gs interface is installed.

Note 2: The VLR column is applicable if Gs interface is installed. It only indicates GPRS related data to be stored and is only relevant to GPRS subscribers registered in VLR.

For special condition of storage see in clause 2. See clause 3 for explanation of M, C, T and P in table 2.

***** End of document *****