

3GPP TSG_CN#7
ETSI SMG3 Plenary Meeting #7,
Madrid, Spain
13th – 15th March 2000

NP-000094

Agenda item: 5.1.3
Source: TSG_N WG1
Title: CRs to 3G Work Item MS Classmark

Introduction:

This document contains “6” CRs on **Work Item MS Classmark**, that have been agreed by **TSG_N WG1**, and are forwarded to **TSG_N Plenary meeting #7** for approval.

Tdoc	Spec	CR	R ev	CAT	Rel.	Old Ver	New Ver	Subject
N1-000526	24.008	CR134	1	C		3.2.1	3.3.0	Clarifying the presence of the Classmark 2 IE in the LOCATION UPDATE REQUEST message
N1-000293	04.08	CRA985		F	R97	6.7.0	6.9.0	Explanation of octets in MS Classmark 1 IE (R97)
N1-000294	04.08	CRA987		F	R98	7.4.0	7.6.0	Explanation of octets in MS Classmark 1 IE (R98)
N1-000563	24.008	CR152	2	C	R99	3.2.1	3.3.0	Modification of MS Classmark 1 and 2
N1-000529	24.008	CR130	1	F	R99	3.2.1	3.3.0	Proposal for network capability for UMTS
N1-000528	24.008	CR129	2	F	R99	3.2.1	3.3.0	Proposal of classmark 1 and 2 for UMTS version2

CHANGE REQUEST		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.	
04.08	CR	A985	Current Version: 6.7.0
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ CR number as allocated by MCC support team	
For submission to: CN#7 <small>list expected approval meeting # here ↑</small>	for approval for information	<input checked="" type="checkbox"/> <input type="checkbox"/>	strategic <input type="checkbox"/> non-strategic <input type="checkbox"/> <small>(for SMG use only)</small>

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

Proposed change affects: (U)SIM ME UTRAN / Radio Core Network
(at least one should be marked with an X)

Source: CN1 **Date:** 13 January 2000

Subject: Explanation of octets in MS Classmark 1 IE

Work item: MS Classmark

Category:	F Correction	<input checked="" type="checkbox"/>	Release:	Phase 2	<input type="checkbox"/>
	A Corresponds to a correction in an earlier release	<input type="checkbox"/>		Release 96	<input type="checkbox"/>
(only one category shall be marked with an X)	B Addition of feature	<input type="checkbox"/>		Release 97	<input checked="" type="checkbox"/>
	C Functional modification of feature	<input type="checkbox"/>		Release 98	<input type="checkbox"/>
	D Editorial modification	<input type="checkbox"/>		Release 99	<input type="checkbox"/>
				Release 00	<input type="checkbox"/>

Reason for change: Some text about A5/1 algorithm supported were left out in the affected table.

Clauses affected: Table 10.5.5/GSM 04.08 in section 10.5.1.5

Other specs Affected:	Other 3G core specifications	<input type="checkbox"/>	→ List of CRs:
	Other GSM core specifications	<input type="checkbox"/>	→ List of CRs:
	MS test specifications	<input type="checkbox"/>	→ List of CRs:
	BSS test specifications	<input type="checkbox"/>	→ List of CRs:
	O&M specifications	<input type="checkbox"/>	→ List of CRs:

Other comments: Same correction as in N1-000081.



<----- double-click here for help and instructions on how to create a CR.

10.5.1.5 Mobile Station Classmark 1

The purpose of the *Mobile Station Classmark 1* information element is to provide the network with information concerning aspects of high priority of the mobile station equipment. This affects the manner in which the network handles the operation of the mobile station. The Mobile Station Classmark information indicates general mobile station characteristics and it shall therefore, except for fields explicitly indicated, be independent of the frequency band of the channel it is sent on.

The *Mobile Station Classmark 1* information element is coded as shown in figure 10.5.5/GSM 04.08 and table 10.5.5/GSM 04.08.

The *Mobile Station Classmark 1* is a type 3 information element with 2 octets length.

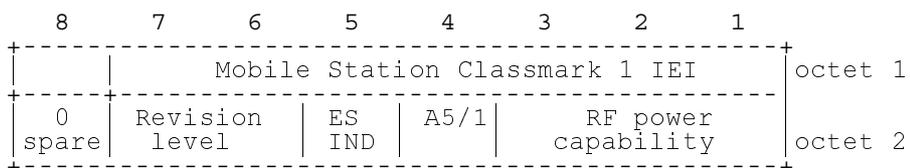


Figure 10.5.5/GSM 04.08: *Mobile Station Classmark 1* information element

Table 10.5.5/GSM 04.08: Mobile Station Classmark 1 information element

<p>Revision level (octet 2)</p> <p>Bits 7 6 0 0 Reserved for phase 1 0 1 Used by phase 2 mobile stations</p> <p>All other values are reserved for future use.</p> <p>ES IND (octet 2, bit 5) "Controlled Early Classmark Sending" option implementation</p> <p>0 "Controlled Early Classmark Sending" option is not implemented in the MS 1 "Controlled Early Classmark Sending" option is implemented in the MS</p> <p>NOTE: The value of the ES IND gives the implementation in the MS. It's value is not dependent on the broadcast SI 3 Rest Octet <Early Classmark Sending Control> value.</p> <p><u>A5/1 algorithm supported (octet 2, bit 4)</u></p> <table border="1"> <tr> <td>0</td> <td>encryption algorithm A5/1 available</td> </tr> <tr> <td>1</td> <td>encryption algorithm A5/1 not available</td> </tr> </table> <p>RF power capability (octet 2)</p> <p>When the GSM P, E [or R] 900 MHz band is used (for exceptions see 3.4.18):</p> <p>Bits 3 2 1 0 0 0 class 1 0 0 1 class 2 0 1 0 class 3 0 1 1 class 4 1 0 0 class 5</p> <p>All other values are reserved.</p> <p>When the DCS 1800 band is used (for exceptions see 3.4.18):</p> <p>Bits 3 2 1 0 0 0 class 1 0 0 1 class 2 0 1 0 class 3</p> <p>All other values are reserved.</p>	0	encryption algorithm A5/1 available	1	encryption algorithm A5/1 not available
0	encryption algorithm A5/1 available			
1	encryption algorithm A5/1 not available			

<h2 style="margin: 0;">CHANGE REQUEST</h2>		<i>Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.</i>
04.08	CR	A987
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ CR number as allocated by MCC support team
For submission to: CN#7 <i>list expected approval meeting # here</i> ↑	for approval <input checked="" type="checkbox"/> for information <input type="checkbox"/>	Current Version: 7.4.0 strategic <input type="checkbox"/> non-strategic <input type="checkbox"/> <i>(for SMG use only)</i>

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

Proposed change affects: (U)SIM ME UTRAN / Radio Core Network
(at least one should be marked with an X)

Source: **CN1** **Date:** **13 January 2000**

Subject: **Explanation of octets in MS Classmark 1 IE**

Work item: **MS Classmark**

Category:	F Correction <input checked="" type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input type="checkbox"/> D Editorial modification <input type="checkbox"/>		Release:	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input checked="" type="checkbox"/> Release 99 <input type="checkbox"/> Release 00 <input type="checkbox"/>
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(only one category shall be marked with an X)

Reason for change: **Some text about A5/1 algorithm supported were left out in the affected table.**

Clauses affected: **Table 10.5.5/GSM 04.08 in section 10.5.1.5**

Other specs Affected:	Other 3G core specifications <input type="checkbox"/> → List of CRs: Other GSM core specifications <input type="checkbox"/> → List of CRs: MS test specifications <input type="checkbox"/> → List of CRs: BSS test specifications <input type="checkbox"/> → List of CRs: O&M specifications <input type="checkbox"/> → List of CRs:	
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Other comments: **Same correction as in N1-000081.**



<----- double-click here for help and instructions on how to create a CR.

10.5.1.5 Mobile Station Classmark 1

The purpose of the *Mobile Station Classmark 1* information element is to provide the network with information concerning aspects of high priority of the mobile station equipment. This affects the manner in which the network handles the operation of the mobile station. The Mobile Station Classmark information indicates general mobile station characteristics and it shall therefore, except for fields explicitly indicated, be independent of the frequency band of the channel it is sent on.

The *Mobile Station Classmark 1* information element is coded as shown in figure 10.5.5/GSM 04.08 and table 10.5.5/GSM 04.08.

The *Mobile Station Classmark 1* is a type 3 information element with 2 octets length.

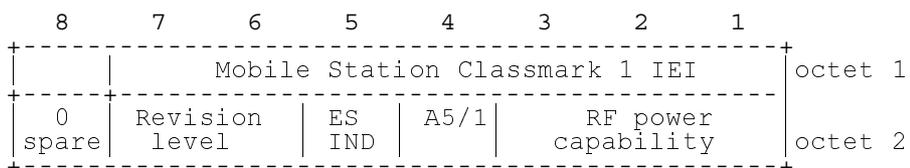


Figure 10.5.5/GSM 04.08: *Mobile Station Classmark 1* information element

Table 10.5.5/GSM 04.08: Mobile Station Classmark 1 information element

Revision level (octet 2)
Bits
7 6
0 0 Reserved for phase 1
0 1 Used by phase 2 mobile stations
All other values are reserved for future use.
ES IND (octet 2, bit 5) "Controlled Early Classmark Sending" option implementation
0 "Controlled Early Classmark Sending" option is not implemented in the MS
1 "Controlled Early Classmark Sending" option is implemented in the MS
NOTE: The value of the ES IND gives the implementation in the MS. It's value is not dependent on the broadcast SI 3 Rest Octet <Early Classmark Sending Control> value.
<u>A5/1 algorithm supported (octet 2, bit 4)</u>
<u>0 encryption algorithm A5/1 available</u>
1 encryption algorithm A5/1 not available
RF power capability (octet 2)
When the GSM P, E [or R] 900 MHz band is used (for exceptions see 3.4.18):
Bits
3 2 1
0 0 0 class 1
0 0 1 class 2
0 1 0 class 3
0 1 1 class 4
1 0 0 class 5
All other values are reserved.
When the DCS 1800 or PCS 1900 band is used (for exceptions see 3.4.18):
Bits
3 2 1
0 0 0 class 1
0 0 1 class 2
0 1 0 class 3
All other values are reserved.

9.2.15 Location updating request

This message is sent by the mobile station to the network either to request update of its location file (normal updating or periodic updating) or to request IMSI attach. See table 9.2.17/TS 24.008.

Message type: LOCATION UPDATING REQUEST

Significance: dual

Direction: mobile station to network

Table 9.2.17/TS 24.008: LOCATION UPDATING REQUEST message content

IEI	Information element	Type / Reference	Presence	Format	Length
	Mobility management protocol discriminator	Protocol discriminator 10.2	M	V	1/2
	Skip Indicator	Skip Indicator 10.3.1	M	V	1/2
	Location Updating Request message type	Message type 10.4	M	V	1
	Location updating type	Location updating type 10.5.3.5	M	V	1/2
	Ciphering key sequence number	Ciphering key sequence number 10.5.1.2	M	V	1/2
	Location area identification	Location area identification 10.5.1.3	M	V	5
	Mobile station classmark	Mobile station classmark 1 10.5.1.5	M	V	1
	Mobile identity	Mobile identity 10.5.1.4	M	LV	2-9
33	Mobile station classmark for UMTS	Mobile station classmark 2 10.5.1.6	O	TLV	5

9.2.15.1 Location area identification

The location area identification stored in the SIM is used.

9.2.15.2 Mobile Station Classmark

This IE shall include for multiband MS the Classmark 1 corresponding to the frequency band in use.

9.2.15.3 Mobile Station Classmark for UMTS

This IE shall be included when the mobile station is in UMTS network. The IE shall not be included when the mobile station is in GSM network.

<h2 style="margin: 0;">CHANGE REQUEST</h2>		<i>Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.</i>
24.008	CR	129r2
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ CR number as allocated by MCC support team
For submission to: CN#7 <small>list expected approval meeting # here</small>		Current Version: 3.2.1
	for approval <input checked="" type="checkbox"/> for information <input type="checkbox"/>	strategic <input type="checkbox"/> non-strategic <input type="checkbox"/> <small>(for SMG use only)</small>

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

Proposed change affects: (U)SIM ME UTRAN / Radio Core Network
(at least one should be marked with an X)

Source: CN1 **Date:** 28-Feb-00

Subject: Proposal of Classmark 1 and 2 for UMTS

Work item: MS Classmark

Category:	F Correction <input checked="" type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input type="checkbox"/> D Editorial modification <input type="checkbox"/>	Release:	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
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(only one category shall be marked with an X)

Reason for change: A new code point for the revision level was specified for UMTS mobiles only, but all cases in which the new code point is needed (indication that the ME supports the R99 protocol enhancements UMTS authentication, extended TI, and extended send sequence number) can occur also for GSM mobile stations.
 Several editorial corrections, and correction of an error introduced between v 3.0.0 and 3.1.0 of TS 24.008.

Clauses affected: 10.5.1.5, 10.5.1.6

Other specs affected:	Other 3G core specifications <input type="checkbox"/> Other GSM core specifications <input type="checkbox"/> MS test specifications <input type="checkbox"/> BSS test specifications <input type="checkbox"/> O&M specifications <input type="checkbox"/>	→ List of CRs: → List of CRs: → List of CRs: → List of CRs: → List of CRs:	
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Other comments:



<----- double-click here for help and instructions on how to create a CR.

10.5.1.5 Mobile Station Classmark 1

The purpose of the *Mobile Station Classmark 1* information element is to provide the network with information concerning aspects of high priority of the mobile station equipment. This affects the manner in which the network handles the operation of the mobile station. The Mobile Station Classmark information indicates general mobile station characteristics and it shall therefore, except for fields explicitly indicated, be independent of the frequency band of the channel it is sent on.

The *Mobile Station Classmark 1* information element is coded as shown in figure 10.5.5/TS 24.008 and table 10.5.5/TS 24.008.

The *Mobile Station Classmark 1* is a type 3 information element with 2 octets length.

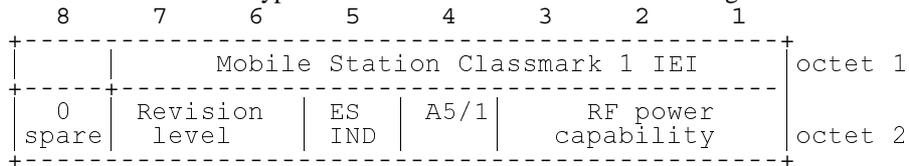


Figure 10.5.5/TS 24.008 Mobile Station Classmark 1 information element

Table 10.5.5/TS 24.008: Mobile Station Classmark 1 information element

Revision level (octet 2)	
Bits	
7 6	
0 0	Reserved for GSM phase 1
0 1	Used by GSM phase 2 mobile stations
1 0	Used by mobile stations supporting this version of the protocol
1 1	Reserved for future use
All other values are reserved for future use.	
ES IND (octet 2, bit 5) "Controlled Early Classmark Sending" option implementation	
0	"Controlled Early Classmark Sending" option is not implemented in the MS
1	"Controlled Early Classmark Sending" option is implemented in the MS
NOTE: The value of the ES IND gives the implementation in the MS. It's value is not dependent on the broadcast SI 3 Rest Octet <Early Classmark Sending Control> value.	
A5/1 algorithm supported (octet 2, bit4)	
0	encryption algorithm A5/1 available
1	encryption algorithm A5/1 not available
RF power capability (octet 2)	
When the GSM 450, GSM 480, GSM 850, GSM P, E [or R] 900 band is used (for exceptions see GSM 04.183-4.18):	
Bits	
3 2 1	
0 0 0	class 1
0 0 1	class 2
0 1 0	class 3
0 1 1	class 4
1 0 0	class 5
All other values are reserved.	
When the DCS 1800 or PCS 1900 band is used (for exceptions see GSM 04.183-4.18):	
Bits	
3 2 1	
0 0 0	class 1
0 0 1	class 2
0 1 0	class 3
All other values are reserved.	

10.5.1.6 Mobile Station Classmark 2

The purpose of the *Mobile Station Classmark 2* information element is to provide the network with information concerning aspects of both high and low priority of the mobile station equipment. This affects the manner in which the network handles the operation of the mobile station. The Mobile Station Classmark information indicates general mobile station characteristics and it shall therefore, except for fields explicitly indicated, be independent of the frequency band of the channel it is sent on.

The *Mobile Station Classmark 2* information element is coded as shown in figure 10.5.6/TS 24.008, table 10.5.6a/TS 24.008 and table 10.5.6b/TS 24.008.

The *Mobile Station Classmark 2* is a type 4 information element with 5 octets length.

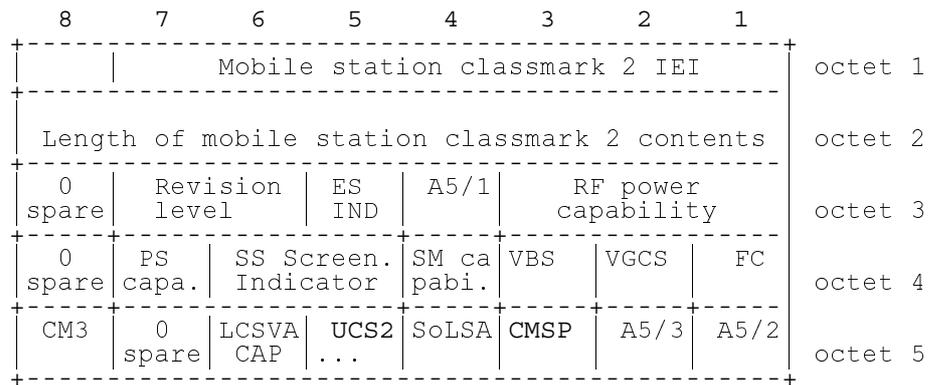


Figure 10.5.6/TS 24.008 Mobile Station Classmark 2 information element

NOTE: Owing to backward compatibility problems, bit 8 of octet 4 should not be used unless it is also checked that the bits 8, 7 and 6 of octet 3 are not "0 0 0".

Table 10.5.6a/TS 24.008: Mobile Station Classmark 2 information element

Revision level (octet 3)	
Bits	
7 6	
0 0	Reserved for GSM phase 1
0 1	Used by GSM phase 2 mobile stations
1 0	Used by UMTS mobile stations supporting this version of the protocol
1 1	Reserved for future use
ES IND (octet 3, bit 5) "Controlled Early Classmark Sending" option implementation	
0	"Controlled Early Classmark Sending" option is not implemented in the MS
1	"Controlled Early Classmark Sending" option is implemented in the MS
NOTE: The value of the ES IND gives the implementation in the MS. It's value is not dependent on the broadcast SI 3 Rest Octet <Early Classmark Sending Control> value.	
A5/1 algorithm supported (octet 3, bit 4)	
0	encryption algorithm A5/1 available
1	encryption algorithm A5/1 not available
RF Power Capability (Octet 3)	
When GSM 450, GSM 480, GSM 850, GSM 900 P, E [or R] band is used (for exceptions see GSM 04.183):	
Bits	
3 2 1	
0 0 0	class 1
0 0 1	class 2
0 1 0	class 3
0 1 1	class 4
1 0 0	class 5
All other values are reserved.	
When the DCS 1800 or PCS 1900 band is used (for exceptions see GSM 04.183):	
Bits	
3 2 1	
0 0 0	class 1
0 0 1	class 2
0 1 0	class 3
All other values are reserved.	
PS capability (pseudo-synchronization capability) (octet 4)	
Bit 7	
0	PS capability not present
1	PS capability present
SS Screening Indicator (octet 4)	
Bits	
6 5	
0 0	defined in TS 24.080
0 1	defined in TS 24.080
1 0	defined in TS 24.080
1 1	defined in TS 24.080
SM capability (MT SMS pt to pt capability) (octet 4)	
Bit 4	
0	Mobile station does not support mobile terminated point to point SMS
1	Mobile station supports mobile terminated point to point SMS

Table 10.5.6b/TS 24.008: *Mobile Station Classmark 2* information element VBS notification reception (octet 4)

Bit 3

0 no VBS capability or no notifications wanted
1 VBS capability and notifications wanted

VGCS notification reception (octet 4)

Bit 2

0 no VGCS capability or no notifications wanted
1 VGCS capability and notifications wanted

FC Frequency Capability (octet 4)

When GSM 400 band is used (for exceptions see [GSM 04.183](#)):

Bit 1

0 Reserved for future use (for definition of frequency bands see GSM 05.05)

Note: This bit conveys no information about support or non support of the E-GSM or R-GSM band when transmitted on a GSM 400 channel.

When GSM 850 band is used (for exceptions see [GSM 04.183](#)):

Bit 1

0 Reserved for future use (for definition of frequency bands see GSM 05.05)

Note: This bit conveys no information about support or non support of the E-GSM or R-GSM band when transmitted on a GSM 850 channel.

When a GSM 900 band is used (for exceptions see [GSM 04.183](#)):

Bit 1

0 The MS does not support the E-GSM or R-GSM band (For definition of frequency bands see GSM 05.05)

1 The MS does support the E-GSM or R-GSM (For definition of frequency bands see GSM 05.05)

Note : For mobile station supporting the R-GSM band further information can be found in MS Classmark 3.

When the DCS 1800 band is used (for exceptions see [GSM 04.183](#)):

Bit 1

0 Reserved for future use (for definition of frequency bands see GSM 05.05)

Note: This bit conveys no information about support or non support of the E-GSM or R-GSM band when transmitted on a DCS 1800 channel.

When the PCS 1900 band is used (for exceptions see [GSM 04.183.4.18](#)):

Bit 1

0 Reserved for future use (for definition of frequency bands see GSM 05.05)

Note: This bit conveys no information about support or non support of the E-GSM or R-GSM band when transmitted on a PCS 1900 channel.

CM3 (octet 5, bit 8)

0 The MS does not support any options that are indicated in CM3
1 The MS supports options that are indicated in classmark 3 IE

LCS VA capability (LCS value added location request notification capability) (octet 5, bit 6)

0 LCS value added location request notification capability not supported
1 LCS value added location request notification capability supported

UCS2 treatment (octet 5, bit 5)

This information field indicates the likely treatment by the mobile station of UCS2 encoded character strings. If not included, the value 0 shall be assumed by the receiver.

0 the ME has a preference for the default alphabet (defined in GSM 03.38) over UCS2.
1 the ME has no preference between the use of the default alphabet and the use of UCS2.

SoLSA (octet 5, bit 4)

0 The ME does not support SoLSA.
1 The ME supports SoLSA.

CMSP: CM Service Prompt (octet 5, bit 3) \$(CCBS)\$
0 "Network initiated MO CM connection request" not supported.
1 "Network initiated MO CM connection request" supported for at least one CM protocol.

A5/3 algorithm supported (octet 5, bit 2)
0 encryption algorithm A5/3 not available
1 encryption algorithm A5/3 available

A5/2 algorithm supported (octet 5, bit 1)
0 encryption algorithm A5/2 not available
1 encryption algorithm A5/2 available

NOTE: Additional mobile station capability information might be obtained by invoking the classmark interrogation procedure.

10.5.5.12 MS network capability

The purpose of the *MS network capability* information element is to provide the network with information concerning aspects of the mobile station related to GPRS. The contents might affect the manner in which the network handles the operation of the mobile station. The *MS network capability* information indicates general mobile station characteristics and it shall therefore, except for fields explicitly indicated, be independent of the frequency band of the channel it is sent on.

The *MS network capability* is a type 4 information element with a maximum of 3 octets length.

The value part of a *MS network capability* information element is coded as shown in figure 10.5.128/TS 24.008 and table 10.5.145/TS 24.008.

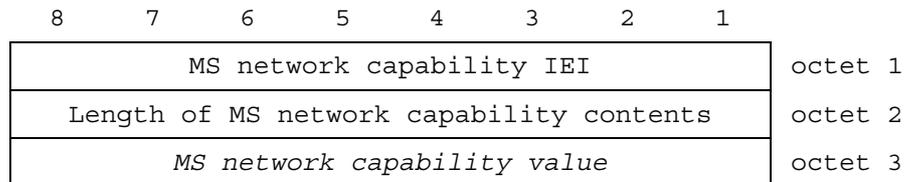


Figure 10.5.128/TS 24.008 MS network capability information element

Table 10.5.145/TS 24.008 MS network capability information element

<MS network capability value part> ::=	
<GEA bits> <SM capabilities via dedicated channels: bit> <SM capabilities via GPRS channels: bit> <UCS2 support: bit> <SS Screening Indicator: bit string(2)> <SoLSA Capability : bit> <Revision level indicator: bit>; <Padding bit>;	
<GEA bits> ::= < GEA/1 :bit>;	
<Spare bits> ::= null {<spare bit> < Spare bits >};	
SS Screening Indicator	
0 0	defined in TS 24.080
0 1	defined in TS 24.080
1 0	defined in TS 24.080
1 1	defined in TS 24.080
SM capabilities via dedicated channels	
0	Mobile station does not support mobile terminated point to point SMS via dedicated signalling channels
1	Mobile station supports mobile terminated point to point SMS via dedicated signalling channels
SM capabilities via GPRS channels	
0	Mobile station does not support mobile terminated point to point SMS via GPRS packet data channels
1	Mobile station supports mobile terminated point to point SMS via GPRS packet data channels
UCS2 support	
This information field indicates the likely treatment by the mobile station of UCS2 encoded character strings.	
0	the ME has a preference for the default alphabet (defined in GSM 03.38) over UCS2.
1	the ME has no preference between the use of the default alphabet and the use of UCS2.
GPRS Encryption Algorithm GEA/1	
0	encryption algorithm GEA/1 not available
1	encryption algorithm GEA/1 available

SoLSA Capability

- 0 The ME does not support SoLSA.
- 1 The ME supports SoLSA.

Revision level indicator

- 0 used by a mobile station supporting earlier versions of the protocol
- 1 used by a mobile station supporting this version of the protocol

CHANGE REQUEST		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.
24.008	CR	152r2
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ CR number as allocated by MCC support team
For submission to: CN#7	for approval <input checked="" type="checkbox"/>	strategic <input type="checkbox"/>
list expected approval meeting # here ↑	for information <input type="checkbox"/>	non-strategic <input type="checkbox"/> (for SMG use only)

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

Proposed change affects: (U)SIM ME UTRAN / Radio Core Network
(at least one should be marked with an X)

Source: CN1 **Date:** 01-March-00

Subject: Modification of MS CM1 and CM2

Work item: MS Classmark

Category:	F Correction <input checked="" type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input type="checkbox"/> D Editorial modification <input type="checkbox"/>	Release:	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
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(only one category shall be marked with an X)

Reason for change: The N1 decisions reflecting the MS Classmark have been reported in TR 23.814, which was approved by the CN Plenary. This CR proposes to update the MS CM 1 and CM 2 according to the TR 23.814 e.g. separating CN and radio related capabilities. The radio capabilities in MS CM 1 and 2 are required for GSM radio access technology and should be indicated in MS CM 1 and MS CM2.

Some mobiles will be able to use both GSM and UTMS access modes. The coding of radio capability fields should be specified for dual mode mobile stations. For MS, which is only UMTS access mode capable, the coding of GSM fields need not to be specified since the GSM fields are not valid for these types of MS.

Clauses affected: 10.5.1.5, 10.5.1.6

Other specs affected:	Other 3G core specifications <input type="checkbox"/> Other GSM core specifications <input type="checkbox"/> MS test specifications <input type="checkbox"/> BSS test specifications <input type="checkbox"/> O&M specifications <input type="checkbox"/>	→ List of CRs: → List of CRs: → List of CRs: → List of CRs: → List of CRs:
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Other comments:



<----- double-click here for help and instructions on how to create a CR.

10.5.1.5 Mobile Station Classmark 1

The purpose of the *Mobile Station Classmark 1* information element is to provide the network with information concerning aspects of high priority of the mobile station equipment. This affects the manner in which the network handles the operation of the mobile station. The Mobile Station Classmark information indicates general mobile station characteristics and it shall therefore, except for fields explicitly indicated, be independent of the frequency band of the channel it is sent on.

The *Mobile Station Classmark 1* information element is coded as shown in figure 10.5.5/TS 24.008 and table 10.5.5/TS 24.008.

The *Mobile Station Classmark 1* is a type 3 information element with 2 octets length.

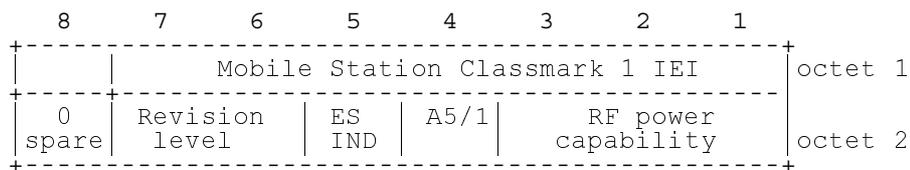


Figure 10.5.5/TS 24.008 Mobile Station Classmark 1 information element

A MS supporting GSM shall always encode all fields relevant for GSM radio access technology, even when accessing UMTS radio access technology. A UMTS MS which does not support GSM shall encode fields relevant only for GSM radio access technology using any value which has been defined for this version of the protocol and is not reserved.

Table 10.5.5/TS 24.008: Mobile Station Classmark 1 information element

<p>Revision level (octet 2) Required for MS supporting GSM and UMTS. Bits 7 6 0 0 Reserved for phase 1 0 1 Used by phase 2 mobile stations</p> <p>All other values are reserved for future use.</p> <p>ES IND (octet 2, bit 5) "Controlled Early Classmark Sending" option implementation Required for MS supporting GSM.</p> <p>0 "Controlled Early Classmark Sending" option is not implemented in the MS 1 "Controlled Early Classmark Sending" option is implemented in the MS</p> <p>NOTE: The value of the ES IND gives the implementation in the MS. It's value is not dependent on the broadcast SI 3 Rest Octet <Early Classmark Sending Control> value.</p> <p>A5/1 algorithm supported (octet 23, bit4) Required for mobile station supporting GSM.</p> <p>0 encrypted algorithm A5/1 available 1 encryption algorithm A5/1 not available</p> <p>RF power capability (octet 2) Required for mobile stations supporting GSM.</p> <p>When the GSM 450, GSM 480, GSM 850, GSM P, E [or R] 900 band is used (for exceptions see 3.4.18): Bits 3 2 1 0 0 0 class 1 0 0 1 class 2 0 1 0 class 3 0 1 1 class 4 1 0 0 class 5</p> <p>All other values are reserved.</p> <p>When the DCS 1800 or PCS 1900 band is used (for exceptions see 3.4.18): Bits 3 2 1 0 0 0 class 1 0 0 1 class 2 0 1 0 class 3</p> <p>All other values are reserved.</p>
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10.5.1.6 Mobile Station Classmark 2

The purpose of the *Mobile Station Classmark 2* information element is to provide the network with information concerning aspects of both high and low priority of the mobile station equipment. This affects the manner in which the network handles the operation of the mobile station. The Mobile Station Classmark information indicates general mobile station characteristics and it shall therefore, except for fields explicitly indicated, be independent of the frequency band of the channel it is sent on.

The *Mobile Station Classmark 2* information element is coded as shown in figure 10.5.6/TS 24.008, table 10.5.6a/TS 24.008 and table 10.5.6b/TS 24.008.

The *Mobile Station Classmark 2* is a type 4 information element with 5 octets length.

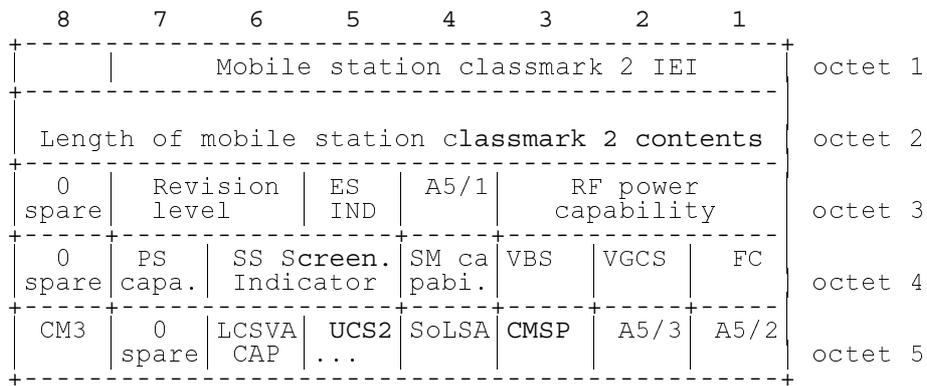


Figure 10.5.6/TS 24.008 Mobile Station Classmark 2 information element

NOTE: Owing to backward compatibility problems, bit 8 of octet 4 should not be used unless it is also checked that the bits 8, 7 and 6 of octet 3 are not "0 0 0".

Table 10.5.6a/TS 24.008: Mobile Station Classmark 2 information element

<p>Revision level (octet 3) Required for MS supporting GSM and UMTS. Bits 7 6 0 0 Reserved for phase 1 0 1 Used by phase 2 mobile stations 1 0 Used by UMTS mobile stations 1 1 Reserved for future use</p> <p>ES IND (octet 3, bit 5) "Controlled Early Classmark Sending" option implementation Required for MS supporting GSM. 0 "Controlled Early Classmark Sending" option is not implemented in the MS 1 "Controlled Early Classmark Sending" option is implemented in the MS</p> <p>NOTE: The value of the ES IND gives the implementation in the MS. It's value is not dependent on the broadcast SI 3 Rest Octet <Early Classmark Sending Control> value.</p> <p>A5/1 algorithm supported (octet 3, bit 4) Required for MS supporting GSM. 0 encryption algorithm A5/1 available 1 encryption algorithm A5/1 not available</p> <p>RF Power Capability (Octet 3) Required for MS supporting GSM. When GSM 450, GSM 480, GSM 850, GSM 900 P, E [or R] band is used (for exceptions see 3): Bits 3 2 1 0 0 0 class 1 0 0 1 class 2 0 1 0 class 3 0 1 1 class 4 1 0 0 class 5</p> <p>All other values are reserved.</p> <p>When the DCS 1800 or PCS 1900 band is used (for exceptions see 3): Bits 3 2 1 0 0 0 class 1 0 0 1 class 2 0 1 0 class 3</p> <p>All other values are reserved.</p> <p>PS capability (pseudo-synchronization capability) (octet 4) Required for MS supporting GSM. Bit 7 0 PS capability not present 1 PS capability present</p> <p>SS Screening Indicator (octet 4) Required for MS supporting GSM and UMTS. Bits 6 5 0 0 defined in TS 24.080 0 1 defined in TS 24.080 1 0 defined in TS 24.080 1 1 defined in TS 24.080</p>
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Table 10.5.6a/TS 24.008: *Mobile Station Classmark 2* information element

SM capability (MT SMS pt to pt capability) (octet 4)

[Required for MS supporting GSM.](#)

Bit 4

0 Mobile station does not support mobile terminated point to point SMS

1 Mobile station supports mobile terminated point to point SMS

Table 10.5.6b/TS 24.008: *Mobile Station Classmark 2* information element

VBS notification reception (octet 4)

[Required for MS supporting GSM.](#)

Bit 3

0 no VBS capability or no notifications wanted

1 VBS capability and notifications wanted

VGCS notification reception (octet 4)

[Required for MS supporting GSM.](#)

Bit 2

0 no VGCS capability or no notifications wanted

1 VGCS capability and notifications wanted

FC Frequency Capability (octet 4)

[Required for MS supporting GSM.](#)

When GSM 400 band is used (for exceptions see 3):

Bit 1

0 Reserved for future use (for definition of frequency bands see GSM 05.05)

Note: This bit conveys no information about support or non support of the E-GSM or R-GSM band when transmitted on a GSM 400 channel.

When GSM 850 band is used (for exceptions see 3):

Bit 1

0 Reserved for future use (for definition of frequency bands see GSM 05.05)

Note: This bit conveys no information about support or non support of the E-GSM or R-GSM band when transmitted on a GSM 850 channel.

When a GSM 900 band is used (for exceptions see 3):

Bit 1

0 The MS does not support the E-GSM or R-GSM band (For definition of frequency bands see GSM 05.05)

1 The MS does support the E-GSM or R-GSM (For definition of frequency bands see GSM 05.05)

Note : For mobile station supporting the R-GSM band further information can be found in MS Classmark 3.

When the DCS 1800 band is used (for exceptions see 3):

Bit 1

0 Reserved for future use (for definition of frequency bands see GSM 05.05)

Note: This bit conveys no information about support or non support of the E-GSM or R-GSM band when transmitted on a DCS 1800 channel.

When the PCS 1900 band is used (for exceptions see 3.4.18):

Bit 1

0 Reserved for future use (for definition of frequency bands see GSM 05.05)

Note: This bit conveys no information about support or non support of the E-GSM or R-GSM band when transmitted on a PCS 1900 channel.

<p>Table 10.5.6ab/TS 24.008: <i>Mobile Station Classmark 2</i> information element</p> <p>CM3 (octet 5, bit 8) Required for MS supporting GSM. 0 The MS does not support any options that are indicated in CM3 1 The MS supports options that are indicated in classmark 3 IE</p> <p>LCS VA capability (LCS value added location request notification capability) (octet 5, bit 6) Required for MS supporting GSM. 0 LCS value added location request notification capability not supported 1 LCS value added location request notification capability supported</p> <p>UCS2 treatment (octet 5, bit 5) Required for MS supporting UMTS. This information field indicates the likely treatment by the mobile station of UCS2 encoded character strings. If not included, the value 0 shall be assumed by the receiver. 0 the ME has a preference for the default alphabet (defined in GSM 03.38) over UCS2. 1 the ME has no preference between the use of the default alphabet and the use of UCS2.</p> <p>SoLSA (octet 5, bit 4) Required for MS supporting GSM. 0 The ME does not support SoLSA. 1 The ME supports SoLSA.</p> <p>CMSP: CM Service Prompt (octet 5, bit 3) \$(CCBS)\$ Required for MS supporting GSM and UMTS. 0 "Network initiated MO CM connection request" not supported. 1 "Network initiated MO CM connection request" supported for at least one CM protocol.</p> <p>A5/3 algorithm supported (octet 5, bit 2) Required for MS supporting GSM. 0 encryption algorithm A5/3 not available 1 encryption algorithm A5/3 available</p> <p>A5/2 algorithm supported (octet 5, bit 1) Required for MS supporting GSM. 0 encryption algorithm A5/2 not available 1 encryption algorithm A5/2 available</p>
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[A MS supporting GSM shall always encode all fields relevant for GSM radio access technology, even when accessing UMTS radio access technology. A UMTS MS which does not support GSM shall encode fields relevant only for GSM radio access technology using any value which has been defined for this version of the protocol and is not reserved.](#)

NOTE: Additional mobile station capability information might be obtained by invoking the classmark interrogation procedure [when the mobile station is accessing the GSM radio access technology.](#)