Source: TSG CN WG 1

Title: CRs to Phase2 with mirror CRs on Work Item GSM/UMTS interworking towards

04.08 and 24.008

Agenda item: 7.6

Document for: APPROVAL

Introduction:

This document contains **7** CRs, **Phase2 with mirror CRs to** Work Item "**GSM/UMTS interworking**", that have been agreed by **TSG CN WG1**, and are forwarded to TSG CN Plenary meeting #18 for approval.

Spec	CR#	Re	CA	Rel	Tdoc Title	Meeting	TDoc#	C_Version
		٧	Т					
04.08	A1135		Α	R97	Clarification on revision level	N1-27	N1-022352	6.19.0
04.08	A1137		Α	R98	Clarification on revision level	N1-27	N1-022353	7.18.0
04.08	A1139		F	Phas e2	Clarification on revision level	N1-27	N1-022393	4.23.1
04.08	A1141		Α	R96	Clarification on revision level	N1-27	N1-022394	5.18.1
24.008	722		Α	R99	Clarification on revision level	N1-27	N1-022354	3.13.0
24.008	723		Α	Rel-4	Clarification on revision level	N1-27	N1-022355	4.8.0
24.008	724		Α	Rel-5	Clarification on revision level	N1-27	N1-022356	5.5.0

3GPP TSG-CN1 Meeting #27 Bangkok, Thailand, 11 – 15 November 2002

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How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

- downloaded from the 3GPP server under $\underline{\text{ftp://ftp.3gpp.org/specs/}}$ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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 10.5.5/3GPP TS 24.008 and table 10.5.5/3GPP TS 24.008.

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

8	7	6	5	4	3	2	1	_
		Ν	lobile Sta	tion Clas	smark 1	IEI		octet 1
0	Revi	sion	ES	A5/1		RF power		
spare	lev	'el	IND			capability		octet 2

Figure 10.5.5/3GPP TS 24.008 Mobile Station Classmark 1 information element

Revision level (octet 2) Bits 7 6 0 0 Reserved for GSM phase 1 Used by GSM phase 2 mobile stations 0 1 0 Used by mobile stations supporting R99 or later versions of the protocol 1 Reserved for future use. If the network receives a revision level specified as 1 1 'reserved for future use', then it shall use the highest revision level supported by the network.

ES IND (octet 2, bit 5) "Controlled Early Classmark Sending" option implementation An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

"Controlled Early Classmark Sending" option is not implemented in the MS
 "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)

An MS not supporting GSM shall set this bit to '1'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

- encryption algorithm A5/1 available
 encryption algorithm A5/1 not available
- RF power capability (octet 2)

When GSM 450, GSM 480, GSM 850, GSM 900 P, E [or R] band is used (for exceptions see GSM 04.18), the MS shall indicate the RF power capability of the band used (see table);

When UMTS is used, a single band GSM 450, GSM 480, GSM 850, GSM 900 P, E [or R] MS shall indicate the RF power capability corresponding to the (GSM) band it supports (see table); in this case information on which single band is supported is found in classmark 3.

Bits

3 2 1 0 0 class 1 Λ 0 0 1 class 2 0 class 3 0 1 0 class 4 1 1 0 0 class 5

All other values are reserved.

When the DCS 1800 or PCS 1900 band is used (for exceptions see 3GPP TS 04.18, sub-clause 3.4.18), the MS shall indicate the RF power capability of the band used (see table):

When UMTS is used, a single band DCS1800 or PCS 1900 MS shall indicate the RF power capability corresponding to the (GSM) band it supports (see table); in this case information on which single band is supported is found in classmark 3. Bits

3 2 1 0 0 0 class 1 0 0 1 class 2 0 1 0 class 3

All other values are reserved.

When UMTS is used, an MS not supporting any GSM band or a multiband GSM MS shall code this field as follows (see table): Bits

3 2 1

1 1 RF Power capability is irrelevant in this information element 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 10.5.6/3GPP TS 24.008, table 10.5.6a/3GPP TS 24.008 and table 10.5.6b/3GPP TS 24.008.

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

8	7	6	5	4	3	2	1					
		M	lobile sta	tion classm	nark 2 IEI			octet 1				
	Length of mobile station classmark 2 contents											
0	Rev	/ision	ES	A5/1		r						
spare	le	evel	IND			capability	/	octet 3				
0	PS	SS Sc	reen.	SM ca	VBS	VGCS	FC					
spare	capa.	Indica	ator	pabi.				octet 4				
CM3	0	LCSVA	UCS2	SoLSA	CMSP	A5/3	A5/2					
	spare	CAP						octet 5				

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".

Figure 10.5.6/3GPP TS 24.008 Mobile Station Classmark 2 information element

Table 10.5.6a/3GPP TS 24.008: Mobile Station Classmark 2 information element

Revision level (octet 3)											
Bi	ts										
7	6										
0	0	Reserved for GSM phase 1									
0	1	Used by GSM phase 2 mobile stations									
1	, ,										
1	1	Reserved for future use. If the network receives a revision level specified as 'reserved									
		for future use', then it shall use the highest revision level supported by the network.									
Ar	ES IND (octet 3, bit 5) "Controlled Early Classmark Sending" option implementation An MS not supporting GSM shall set this bit to '0'.										
Ar	1 IV	S supporting GSM shall indicate the associated GSM capability (see table):									
0	0 "Controlled Early Classmark Sending" option is not implemented in the MS 1 "Controlled Early Classmark Sending" option is implemented in the MS										
NO	ОТ	E: 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="" control="" sending=""> value</early>									

A5/1 algorithm supported (octet 3, bit 4) An MS not supporting GSM shall set this bit to '1'. An MS supporting GSM shall indicate the associated GSM capability (see table): 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 04.18), the MS shall indicate the RF power capability of the band used (see table); When UMTS is used, a single band GSM 450, GSM 480, GSM 850, GSM 900 P, E [or R] MS shall indicate the RF power capability corresponding to the (GSM) band it supports (see table); in this case information on which single band is supported is found in classmark 3. Bits 3 2 0 0 0 class 1 0 0 1 class 2 0 class 3 class 4 0 1 1 0 0 class 5 All other values are reserved. When the DCS 1800 or PCS 1900 band is used (for exceptions see GSM 04.18), the MS shall indicate the RF power capability of the band used (see table); When UMTS is used, a single band DCS1800 or PCS 1900 MS shall indicate the RF power capability corresponding to the (GSM) band it supports (see table); in this case information on which single band is supported is found in classmark 3. Bits 3 2 1 0 0 0 class 1 0 0 1 class 2 0 1 0 class 3 All other values are reserved. When UMTS is used, an MS not supporting any GSM ban d or a multiband GSM MS shall code this field as follows (see table): Bits 3 2 1 1 1 RF Power capability is irrelevant in this information element All other values are reserved. PS capability (pseudo-synchronization capability) (octet 4) An MS not supporting GSM shall set this bit to '0'. An MS supporting GSM shall indicate the associated GSM capability (see table): Bit 7 0 PS capability not present PS capability present SS Screening Indicator (octet 4) Bits 6 5 defined in 3GPP TS 24.080 0 0 defined in 3GPP TS 24.080 Ω 1 defined in 3GPP TS 24.080 0 1 1 defined in 3GPP TS 24.080 SM capability (MT SMS pt to pt capability) (octet 4) Bit 4 Mobile station does not support mobile terminated point to point SMS 0 Mobile station supports mobile terminated point to point SMS 1

VBS notification reception (octet 4)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table): Bit **3**

0 no VBS capability or no notifications wanted

1 VBS capability and notifications wanted

VGCS notification reception (octet 4)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

Bit 2

0 no VGCS capability or no notifications wanted

1 VGCS capability and notifications wanted

FC Frequency Capability (octet 4)

When the GSM 400 or GSM 850 or DCS 1800 or PCS 1900 band or UMTS is used (for exceptions see GSM 04.18, for definitions of frequency band see GSM 05.05), this bit shall be sent with the value '0'.

Note: This bit conveys no information about support or non support of the E-GSM or R-GSM

bands when GSM 400, GSM 850, DCS1800, PCS1900 band or UMTS is used.

When a GSM 900 band is used (for exceptions see GSM 04.18):

Bit 1

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.

CM3 (octet 5, bit 8)

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. For backward compatibility reasons, if this field is 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.

the ME has no preference between the use of the default alphabet and the use of UCS2.

SoLSA (octet 5, bit 4)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

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)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

0 encryption algorithm A5/3 not available

1 encryption algorithm A5/3 available

A5/2 algorithm supported (octet 5, bit 1)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

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 when GSM is used.

3GPP TSG-CN1 Meeting #27 Bangkok, Thailand, 11 – 15 November 2002

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- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to
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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 10.5.5/3GPP TS 24.008 and table 10.5.5/3GPP TS 24.008.

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

8	7	6	5	4	3	2	1	_
		N	lobile Sta	tion Class	smark 1	IEI		octet 1
0	Revi	sion	ES	A5/1		RF power	•	
spare	lev	/el	IND			capability		octet 2

Figure 10.5.5/3GPP TS 24.008 Mobile Station Classmark 1 information element

Revision level (octet 2) Bits 7 6 0 0 Reserved for GSM phase 1 Used by GSM phase 2 mobile stations 0 1 0 Used by mobile stations supporting R99 or later versions of the protocol 1 Reserved for future use. If the network receives a revision level specified as 1 1 'reserved for future use', then it shall use the highest revision level supported by the network.

ES IND (octet 2, bit 5) "Controlled Early Classmark Sending" option implementation An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

"Controlled Early Classmark Sending" option is not implemented in the MS
 "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)

An MS not supporting GSM shall set this bit to '1'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

- encryption algorithm A5/1 available
 encryption algorithm A5/1 not available
- RF power capability (octet 2)

When GSM 450, GSM 480, GSM 700, GSM 850, GSM 900 P, E [or R] band is used (for exceptions see 04.18), the MS shall indicate the RF power capability of the band used (see table):

When UMTS is used, a single band GSM 450, GSM 480, GSM 700, GSM 850, GSM 900 P, E [or R] MS shall indicate the RF power capability corresponding to the (GSM) band it supports (see table). In this case information on which single band is supported is found in classmark 3.

Bits

3 2 1 0 0 class 1 Λ 0 0 1 class 2 0 class 3 0 1 class 4 0 1 1 0 0 class 5

All other values are reserved.

When the DCS 1800 or PCS 1900 band is used (for exceptions see 3GPP TS 44.018, sub-clause 3.4.18), the MS shall indicate the RF power capability of the band used (see table):

When UMTS is used, a single band DCS 1800 or PCS 1900 MS shall indicate the RF power capability corresponding to the (GSM) band it supports (see table). In this case, information on which single band is supported is found in classmark 3. Bits

3 2 1 0 0 0 class 1 0 0 1 class 2 0 1 0 class 3

All other values are reserved.

When UMTS is used, an MS not supporting any GSM band or a multiband GSM MS shall code this field as follows (see table):

Bits

3 2 1

1 1 RF power capability is irrelevant in this information element.

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 10.5.6/3GPP TS 24.008, table 10.5.6a/3GPP TS 24.008 and table 10.5.6b/3GPP TS 24.008.

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

8	7	6	5	4	3	2	1						
		M	lobile sta	tion classm	nark 2 IEI			octet 1					
	Length of mobile station classmark 2 contents												
0	Rev	/ision	ES	A5/1									
spare	le	evel	IND			capability	/	octet 3					
0	PS	SS Sc	reen.	SM ca	VBS	VGCS	FC						
spare	capa.	Indica	ator	pabi.				octet 4					
CM3	0	LCSVA	UCS2	SoLSA	CMSP	A5/3	A5/2						
	spare	CAP						octet 5					

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".

Figure 10.5.6/3GPP TS 24.008 Mobile Station Classmark 2 information element

Table 10.5.6a/3GPP TS 24.008: Mobile Station Classmark 2 information element

Re	vision	level (octet 3)
Bit	S	
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 R99 or later versions of the protocol
1	1	Reserved for future use. If the network receives a revision level specified as 'reserved
		for future use', then it shall use the highest revision level supported by the network.
		ot supporting GSM shall set this bit to '0'. upporting GSM shall indicate the associated GSM capability (see table):
0 1		"Controlled Early Classmark Sending" option is not implemented in the MS "Controlled Early Classmark Sending" option is implemented in the MS
NC	OTE:	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="" control="" sending=""> value</early>

A5/1 algorithm supported (octet 3, bit 4) An MS not supporting GSM shall set this bit to '1'. An MS supporting GSM shall indicate the associated GSM capability (see table) Λ encryption algorithm A5/1 available encryption algorithm A5/1 not available 1 RF Power Capability (Octet 3) When GSM 450, GSM 480, GSM 700, GSM 850, GSM 900 P, E [or R] band is used (for exceptions see 3GPP TS 44.018), the MS shall indicate the RF power capability of the band used (see table). When UMTS is used, a single band GSM 450, GSM 480, GSM 700, GSM 850, GSM 900 P, E [or R] MS shall indicate the RF power capability corresponding to the (GSM) band it supports (see table). In this case, information on which single band is supported is found in classmark 3. Bits 3 2 0 0 0 class 1 class 2 0 0 1 class 3 0 0 1 1 class 4 0 0 class 5 All other values are reserved. When the DCS 1800 or PCS 1900 band is used (for exceptions see 3GPP TS 44.018) The MS shall indicate the RF power capability of the band used (see table). When UMTS is used, a single band DCS 1800 or PCS 1900 MS shall indicate the RF power capability corresponding to the (GSM) band it supports (see table). In this case, information on which single band is supported is found in classmark 3 Bits 3 2 1 0 0 0 class 1 0 1 class 2 1 0 class 3 All other values are reserved. When UMTS is used, an MS not supporting any GSM band or a multiband GSM MS shall code this field as follows (see table): Bits 3 2 1 1 1 1 RF Power capability is irrelevant in this information element All other values are reserved. PS capability (pseudo-synchronization capability) (octet 4) An MS not supporting GSM shall set this bit to '0'. An MS supporting GSM shall indicate the associated GSM capability (see table): Bit 7 0 PS capability not present PS capability present SS Screening Indicator (octet 4) Bits 6 5 0 0 defined in 3GPP TS 24.080 defined in 3GPP TS 24.080 0 1 defined in 3GPP TS 24.080 0 defined in 3GPP TS 24.080 SM capability (MT SMS pt to pt capability) (octet 4) Rit 4 0 Mobile station does not support mobile terminated point to point SMS Mobile station supports mobile terminated point to point SMS

VBS notification reception (octet 4)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table): Bit **3**

0 no VBS capability or no notifications wanted

VBS capability and notifications wanted

VGCS notification reception (octet 4)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

Bit 2

0 no VGCS capability or no notifications wanted

1 VGCS capability and notifications wanted

FC Frequency Capability (octet 4)

When the GSM 400, or GSM 700, or GSM 850, or DCS 1800, or PCS 1900 band or UMTS is used (for exceptions see 3GPP TS 44.018), for definitions of frequency band see 3GPP TS 45.005), this bit shall be sent with the value '0'.

Note: This bit conveys no information about support or non support of the E-GSM or R-GSM bands when GSM 400, GSM 700, GSM 850, DCS 1800, PCS 1900 band or UMTS is used.

When a GSM 900 band is used (for exceptions see 3GPP TS 44.018):

Bit **1**

The MS does not support the E-GSM or R-GSM band (For definition of frequency bands see 3GPP TS 45.005 [33])

The MS does support the E-GSM or R-GSM (For definition of frequency bands see 3GPP TS 45.005 [33])

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

CM3 (octet 5, bit 8)

- 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. For backward compatibility reasons, if this field is not included, the value 0 shall be assumed by the receiver.

- 0 the ME has a preference for the default alphabet (defined in 3GPP TS 03.38) over LICS2
- the ME has no preference between the use of the default alphabet and the use of UCS2.

SoLSA (octet 5, bit 4)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

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)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

0 encryption algorithm A5/3 not available

1 encryption algorithm A5/3 available

A5/2 algorithm supported (octet 5, bit 1)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

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 when GSM is used.

3GPP TSG-CN1 Meeting #27 Bangkok, Thailand, 11 – 15 November 2002

		СНА	NGE REG	QUES	Γ		CR-Form-v7
*	24.008	CR <mark>724</mark>	≋ rev	- #	Current vers	5.5.0	¥
For <u>HELP</u> on usin		m, see botton JICC appsЖ [t over the	
		on on Revisio	n level				
Source: # Work item code: #	T-Mobile GSM/UM	TS interworkir	ng		Date: ₩	04/11/2002	
D	F (corr A (corr B (add C (fundation D (edialed exp	dition of feature, ctional modifica torial modificati	orrection in an ea l, tion of feature) on) e above categorie		2	Rel-5 f the following re (GSM Phase 2) (Release 1996) (Release 1997) (Release 1999) (Release 4) (Release 5) (Release 6))))
Reason for change:	comp the N	oatibility is not //S is impleme	king of differen clearly defined nted. The beha ot clearly define	. The revi viour of the	ision level indi	cates which re	lease in
Summary of change:	signa	alled from the	nat a network s MS within the Me network imple	/IS classn	nark information		
Consequences if not approved:			n is there a rislevel and reduc				
Clauses affected:	第 10.5.	.1.5, 10.5.1.6					
Other specs affected:	¥ N	Other core s Test specific O&M Specifi	ations	¥			
Other comments:	*						

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

- downloaded from the 3GPP server under $\underline{\text{ftp://ftp.3gpp.org/specs/}}$ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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 10.5.5/3GPP TS 24.008 and table 10.5.5/3GPP TS 24.008.

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

8	7	6	5	4	3	2	1	_
		N	lobile Sta	tion Class	smark 1	IEI		octet 1
0	Revi	sion	ES	A5/1		RF power	•	
spare	lev	/el	IND			capability		octet 2

Figure 10.5.5/3GPP TS 24.008 Mobile Station Classmark 1 information element

Revision level (octet 2) Bits 7 6 0 0 Reserved for GSM phase 1 Used by GSM phase 2 mobile stations 0 1 0 Used by mobile stations supporting R99 or later versions of the protocol 1 Reserved for future use. If the network receives a revision level specified as 1 1 'reserved for future use', then it shall use the highest revision level supported by the network.

ES IND (octet 2, bit 5) "Controlled Early Classmark Sending" option implementation An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

"Controlled Early Classmark Sending" option is not implemented in the MS
 "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)

An MS not supporting GSM shall set this bit to '1'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

- encryption algorithm A5/1 available
 encryption algorithm A5/1 not available
- RF power capability (octet 2)

When GSM 450, GSM 480, GSM 700, GSM 850, GSM 900 P, E [or R] band is used (for exceptions see 04.18), the MS shall indicate the RF power capability of the band used (see table):

When UMTS is used, a single band GSM 450, GSM 480, GSM 700, GSM 850, GSM 900 P, E [or R] MS shall indicate the RF power capability corresponding to the (GSM) band it supports (see table). In this case information on which single band is supported is found in classmark 3.

Bits

3 2 1 0 0 class 1 Λ 0 0 1 class 2 0 class 3 0 1 class 4 0 1 1 0 0 class 5

All other values are reserved.

When the DCS 1800 or PCS 1900 band is used (for exceptions see 3GPP TS 44.018, sub-clause 3.4.18), the MS shall indicate the RF power capability of the band used (see table):

When UMTS is used, a single band DCS 1800 or PCS 1900 MS shall indicate the RF power capability corresponding to the (GSM) band it supports (see table). In this case, information on which single band is supported is found in classmark 3. Bits

3 2 1 0 0 0 class 1 0 0 1 class 2 0 1 0 class 3

All other values are reserved.

When UMTS is used, an MS not supporting any GSM band or a multiband GSM MS shall code this field as follows (see table):

Bits

3 2 1

1 1 RF power capability is irrelevant in this information element.

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 10.5.6/3GPP TS 24.008, table 10.5.6a/3GPP TS 24.008 and table 10.5.6b/3GPP TS 24.008.

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

8	7	6	5	4	3	2	1						
		M	lobile sta	tion classm	nark 2 IEI			octet 1					
	Length of mobile station classmark 2 contents												
0	Rev	/ision	ES	A5/1									
spare	le	evel	IND			capability	/	octet 3					
0	PS	SS Sc	reen.	SM ca	VBS	VGCS	FC						
spare	capa.	Indica	ator	pabi.				octet 4					
CM3	0	LCSVA	UCS2	SoLSA	CMSP	A5/3	A5/2						
	spare	CAP						octet 5					

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".

Figure 10.5.6/3GPP TS 24.008 Mobile Station Classmark 2 information element

Table 10.5.6a/3GPP TS 24.008: Mobile Station Classmark 2 information element

Re	vision	level (octet 3)						
Bit	S							
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 R99 or later versions of the protocol						
1	1	Reserved for future use. If the network receives a revision level specified as 'reserved						
		for future use', then it shall use the highest revision level supported by the network.						
	AN MS not supporting GSM shall set this bit to '0'. An MS supporting GSM shall indicate the associated GSM capability (see table):							
0 1		"Controlled Early Classmark Sending" option is not implemented in the MS "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="" control="" sending=""> value</early>						

A5/1 algorithm supported (octet 3, bit 4) An MS not supporting GSM shall set this bit to '1'. An MS supporting GSM shall indicate the associated GSM capability (see table) Λ encryption algorithm A5/1 available encryption algorithm A5/1 not available 1 RF Power Capability (Octet 3) When GSM 450, GSM 480, GSM 700, GSM 850, GSM 900 P, E [or R] band is used (for exceptions see 3GPP TS 44.018), the MS shall indicate the RF power capability of the band used (see table). When UMTS is used, a single band GSM 450, GSM 480, GSM 700, GSM 850, GSM 900 P, E [or R] MS shall indicate the RF power capability corresponding to the (GSM) band it supports (see table). In this case, information on which single band is supported is found in classmark 3. Bits 3 2 0 0 0 class 1 class 2 0 0 1 class 3 0 0 1 1 class 4 0 0 class 5 All other values are reserved. When the DCS 1800 or PCS 1900 band is used (for exceptions see 3GPP TS 44.018) The MS shall indicate the RF power capability of the band used (see table). When UMTS is used, a single band DCS 1800 or PCS 1900 MS shall indicate the RF power capability corresponding to the (GSM) band it supports (see table). In this case, information on which single band is supported is found in classmark 3 Bits 3 2 1 0 0 0 class 1 0 1 class 2 1 0 class 3 All other values are reserved. When UMTS is used, an MS not supporting any GSM band or a multiband GSM MS shall code this field as follows (see table): Bits 3 2 1 1 1 1 RF Power capability is irrelevant in this information element All other values are reserved. PS capability (pseudo-synchronization capability) (octet 4) An MS not supporting GSM shall set this bit to '0'. An MS supporting GSM shall indicate the associated GSM capability (see table): Bit 7 0 PS capability not present PS capability present SS Screening Indicator (octet 4) Bits 6 5 0 0 defined in 3GPP TS 24.080 defined in 3GPP TS 24.080 0 1 defined in 3GPP TS 24.080 0 defined in 3GPP TS 24.080 SM capability (MT SMS pt to pt capability) (octet 4) Rit 4 0 Mobile station does not support mobile terminated point to point SMS Mobile station supports mobile terminated point to point SMS

VBS notification reception (octet 4)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table): Bit **3**

0 no VBS capability or no notifications wanted

VBS capability and notifications wanted

VGCS notification reception (octet 4)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

Bit 2

0 no VGCS capability or no notifications wanted

1 VGCS capability and notifications wanted

FC Frequency Capability (octet 4)

When the GSM 400, or GSM 700, or GSM 850, or DCS 1800, or PCS 1900 band or UMTS is used (for exceptions see 3GPP TS 44.018), for definitions of frequency band see 3GPP TS 45.005), this bit shall be sent with the value '0'.

Note: This bit conveys no information about support or non support of the E-GSM or R-GSM bands when GSM 400, GSM 700, GSM 850, DCS 1800, PCS 1900 band or UMTS is used.

When a GSM 900 band is used (for exceptions see 3GPP TS 44.018):

Bit **1**

The MS does not support the E-GSM or R-GSM band (For definition of frequency bands see 3GPP TS 45.005 [33])

The MS does support the E-GSM or R-GSM (For definition of frequency bands see 3GPP TS 45.005 [33])

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

CM3 (octet 5, bit 8)

- 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. For backward compatibility reasons, if this field is not included, the value 0 shall be assumed by the receiver.

- 0 the ME has a preference for the default alphabet (defined in 3GPP TS 03.38) over LICS2
- the ME has no preference between the use of the default alphabet and the use of UCS2.

SoLSA (octet 5, bit 4)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

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)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

0 encryption algorithm A5/3 not available

1 encryption algorithm A5/3 available

A5/2 algorithm supported (octet 5, bit 1)

An MS not supporting GSM shall set this bit to '0'.

An MS supporting GSM shall indicate the associated GSM capability (see table):

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 when GSM is used.

3GPP TSG-CN1 Meeting #27 Bangkok, Thailand, 11 – 15 November 2002

		СН	ANGE	REQ	UE	ST			CR-Form-v7
*	04.08	CR A1	135	ж rev	-	ж	Current vers	6.19.	0 #
For HELP on us	ing this fo	rm, see bott	om of this	s page or	look a	at the	e pop-up text	over the % s	symbols.
Proposed change at	ffects:	UICC apps\$	€	ME	Rad	io Ad	ccess Netwo	rk X Core I	Network X
Title: 第	Clarificati	on on Revis	ion level						
Source: #	T-Mobile								
Work item code: ₩	GSM/UM	TS interwor	king				Date: ∺	04/11/2002	2
I	Use <u>one</u> of F (cor A (cor B (add C (fur D (edd	the following rection) responds to a dition of feature tional modificational modifications of 3GPP TR 21	a correction lire), lication of the lation) the above	on in an ea feature)		lease	2	R97 the following r (GSM Phase (Release 199 (Release 199 (Release 199 (Release 4) (Release 5) (Release 6)	2) 6) 7) 8)
Reason for change:	com the I	patibility is r	not clearly mented.	y defined. The behav	The r	evisi	ion level indi	and network cates which r receives an	elease in
Summary of change	sign		ne MS wit	thin the M	IS clas	ssma	ark informatio	own revision on 1 and 2 the	
Consequences if not approved:								k to Phase1 i ork capabiliti	
Clauses affected:	ж <u>10.5</u>	.1.5, 10.5.1.	.6						
Other specs affected:	ж Ж	Other core Test speci O&M Spec	fications		*				
Other comments:	*								

How to create CRs using this form:

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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.

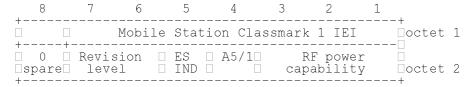


Figure 10.5.5/GSM 04.08: Mobile Station Classmark 1 information element

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

```
Revision level (octet 2)
 76
 0 0 Reserved for phase 1
 0 1 Used by phase 2 mobile stations
All other values are reserved for future use.
If the network receives a revision level specified as 'reserved for future use', then it shall use the
highest revision level supported by the network.
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, bit 4)
 0
       encryption algorithm A5/1 available
       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
321
000
        class 1
001
        class 2
010
        class 3
011
        class 4
100
        class 5
All other values are reserved.
When the DCS 1800 band is used (for exceptions see 3.4.18):
Bits
321
000
        class 1
001
        class 2
010
        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/GSM 04.08, table 10.5.6a/GSM 04.08 and table 10.5.6b/GSM 04.08.

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

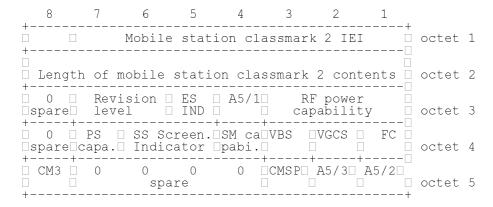


Figure 10.5.6/GSM 04.08: Mobile Station Classmark 2 information element

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".

```
Revision level (octet 3)
 Rits
 76
 00 Reserved for phase 1
 0 1 Used by phase 2 mobile stations
All other values are reserved for future use .
If the network receives a revision level specified as 'reserved for future use', then it shall use the
highest revision level supported by the network.
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
When GSM 900 P, E [or R] band is used (for exceptions see 3.4.18):
Bits
3 2 1
000
        class 1
001
        class 2
010
        class 3
011
        class 4
100
        class 5
All other values are reserved.
When the DCS 1800 band is used (for exceptions see 3.4.18):
Bits
321
000
        class 1
001
        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
     PS capability present
SS Screening Indicator (octet 4)
Bits
6 5
0 0 defined in GSM 04.80
0 1 defined in GSM 04.80
1 0 defined in GSM 04.80
1 1 defined in GSM 04.80
SM capability (MT SMS pt to pt capability) (octet 4)
0 Mobile station does not support mobile terminated point to point SMS
  Mobile station supports mobile terminated point to point SMS
```

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 a GSM 900 band is used (for exceptions see 3.4.18):

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 3.4.18):

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 DCS 1800 channel.

CM3 (octet 5, bit 8)

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

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.

3GPP TSG-CN1 Meeting #27 Bangkok, Thailand, 11 – 15 November 2002

		C	CHANG	E REQ	UE	ST			CR-Form-
*	04.08	CR	A1137	≋ rev	-	¥	Current vers	sion: 7. 1	[#] 0.81
For <u>HELP</u> on usin	ng this for	m, see	bottom of t	this page or	look a	at the	e pop-up text	over the	₩ symbols.
Proposed change af	fects:	JICC a	pps#	ME	Radi	io A	ccess Netwo	rk X C	ore Network
Title:	Clarificati	on on F	Revision lev	el					
Source: #	T-Mobile								
Work item code:第	GSM/UM	TS inte	rworking				Date: ₩	04/11/2	2002
D	Ise <u>one</u> of F (corn A (corn B (add C (fun D (edi	rection) respond dition of ctional r torial mo	feature), modification of odification) ns of the abo	ction in an ea		lease	2		1996) 1997) 1998) 1999) 4) 5)
Reason for change:	comp the N	patibility //S is in	y is not clean plemented	arly defined.	The r	evis	ion level indi	cates whi	ork the upwar ch release in an unknown
Summary of change:	signa	alled fro	om the MS		IS clas	ssma			ion level 2 the highest
Consequences if not approved:							work fall bac sary the netw		e1 in case of bilities.
Clauses affected:	₩ 10.5	.1.5, 10).5.1.6						
Other specs affected:	¥ N	Other Test s	core specil specificatior Specificatio	าร	ж				
Other comments:	*								

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

- downloaded from the 3GPP server under $\underline{\text{ftp://ftp.3gpp.org/specs/}}$ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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.

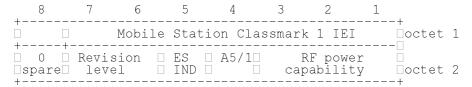


Figure 10.5.5/GSM 04.08: Mobile Station Classmark 1 information element

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

```
Revision level (octet 2)
76
0 0 Reserved for phase 1
0 1 Used by phase 2 mobile stations
All other values are reserved for future use. If the network receives a revision level specified as
'reserved for future use', then it shall use the highest revision level supported by the network.
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, bit 4)
      encryption algorithm A5/1 available
      encryption algorithm A5/1 not available
1
RF power capability (octet 2)
When the GSM P, E [or R] 900 MHz band is used (for exceptions see 3.4.18):
Bits
321
000
        class 1
001
        class 2
010
        class 3
011
        class 4
100
        class 5
All other values are reserved.
When the DCS 1800 or PCS 1900 band is used (for exceptions see 3.4.18):
Bits
321
000
        class 1
001
        class 2
010
        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/GSM 04.08, table 10.5.6a/GSM 04.08 and table 10.5.6b/GSM 04.08.

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

8	7	6	5	4	3	2	1		
+	 	lobile	statio	n clas	smark	2 IEI		octet	1
□ □ Length	of mo	bile s	station	class	mark 2	2 conte	ents 🗆	octet	2
\square spare \square	level		ES 🗆 IND 🗆		capa	ability	,	octet	3
□spare□c	apa. 🗆	Indica	reen.□S ator □p +	abi.□				octet	4
□ CM3 □ □ Sj			0 □S spare□				A5/2□ □	octet	5

Figure 10.5.6/GSM 04.08: 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".

Table 10.5.6a/GSM 04.08: Mobile Station Classmark 2 information element

```
Revision level (octet 3)
 Bits
 76
 00 Reserved for phase 1
 0 1 Used by phase 2 mobile stations
All other values are reserved for future use If the network receives a revision level specified as
'reserved for future use', then it shall use the highest revision level supported by the network.
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
    encryption algorithm A5/1 not available
RF Power Capability (Octet 3)
When GSM 900 P, E [or R] band is used (for exceptions see 3.4.18):
Bits
321
000
        class 1
001
        class 2
010
        class 3
011
        class 4
100
        class 5
All other values are reserved.
When the DCS 1800 or PCS 1900 band is used (for exceptions see 3.4.18):
Bits
321
000
        class 1
        class 2
001
010
        class 3
All other values are reserved.
PS capability (pseudo-synchronization capability) (octet 4)
Bit 7
0
     PS capability not present
     PS capability present
SS Screening Indicator (octet 4)
Bits
6 5
0 0 defined in GSM 04.80
0 1 defined in GSM 04.80
1 0 defined in GSM 04.80
1 1 defined in GSM 04.80
SM capability (MT SMS pt to pt capability) (octet 4)
Bit 4
0 Mobile station does not support mobile terminated point to point SMS
  Mobile station supports mobile terminated point to point SMS
```

Table 10.5.6b/GSM 04.08: 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 a GSM 900 band is used (for exceptions see 3.4.18):

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 3.4.18):

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 DCS 1800 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

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.

3GPP TSG-CN1 Meeting #27 Bangkok, Thailand, 11 – 15 November 2002

	CHANGE REQUEST	CR-Form-v7							
*	04.08 CR A1139 # rev - #	Current version: 4.23.1 **							
For <u>HELP</u> 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 X									
Title: %	Clarification on Revision level								
	T-Mobile								
Work item code: ₩	GSM/UMTS interworking	Date: 第 04/11/2002							
	Jse one 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.	R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) etween MS and network the upward on level indicates which release in							
Summary of change	The CR request, that a network shall use in c signalled from the MS within the MS classma revision level of the network implementation.								
Consequences if not approved:	# If not approved than is there a risk that a network unknown revision level and reduce unnecess.								
Clauses affected:	% 10.5.1.5, 10.5.1.6								
Other specs affected:	Y N Other core specifications Test specifications O&M Specifications								

How to create CRs using this form:

 \mathfrak{R}

Other comments:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

- downloaded from the 3GPP server under $\underline{\text{ftp://ftp.3gpp.org/specs/}}$ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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 10.6/GSM 04.08 and table 10.9/GSM 04.08.

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

8	7	6	5	4	3	2	1		
		Mobile	e Stati	ion Cla	assmark	1 IE:	Ī	octet	1
0 spare	Revi:		ES IND	A5/1	R cap	F powe	er Ty	octet	2

FIGURE 10.6/GSM 04.08

Mobile Station Classmark 1 information element

```
Revision level (octet 2)
 Bits
 76
 0 0 Reserved for phase 1
 0 1 Used by phase 2 MSs
All other values are reserved for future use. . If the network receives a revision level specified as
'reserved for future use', then it shall use the highest revision level supported by the network.
ES IND (octet 2, bit 5) "Controlled Early Classmark Sending" option implementation
 0 "Controlled Early Classmark Sending" option is not implemented
 1 "Controlled Early Classmark Sending" option is implemented
A5/1 algorithm supported (octet 2, bit 4)
 0
      encryption algorithm A5/1 available
      encryption algorithm A5/1 not available
RF power capability (octet 2)
When the GSM 900 band is used (for exceptions see section 3.4.12):
Bits
321
000
        class 1
001
        class 2
010
        class 3
011
        class 4
100
        class 5
All other values are reserved.
When the DCS 1800 band is used (for exceptions see section 3.4.12):
Bits
321
000
        class 1
001
        class 2
0 1 0
        class 3
All other values are reserved.
```

Table 10.9/GSM 04.08

Mobile Station Classmark 1 information element

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 10.7/GSM 04.08, table 10.10a/GSM 04.08 and table 10.10b/GSM 04.08.

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

8	7	6	5	4	3	2	1		
		Mobile	e stat:	ion cla	assmarl	k 2 IEI	[octet 1	
Length of mobile station classmark 2 contents octet 2									
0 spare	Revi leve	ision el	ES IND	A5/1	RF power capability			octet 3	
0 spare	PS capa.		creen. cator	SM ca pabi.	0 sp	0 pare	FC	octet 4	
СМЗ	0	0 spa	0 are	0	0	A5/3	A5/2	octet 5	

FIGURE 10.7/GSM 04.08 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".

```
Revision level (octet 3)
 Bits
 76
 00 Reserved for phase 1
 0 1 Used by phase 2 MSs
All other values are reserved for future use. If the network receives a revision level specified as
'reserved for future use', then it shall use the highest revision level supported by the network.
ES IND (octet 2, bit 5) "Controlled Early Classmark Sending" option implementation
 0 "Controlled Early Classmark Sending" option is not implemented
 1 "Controlled Early Classmark Sending" option is implemented
A5/1 algorithm supported (octet 3, bit 4)
 0 encryption algorithm A5/1 available
 1 encryption algorithm A5/1 not available
When the GSM 900 band is used (for exceptions see 3.4.12):
Bits
321
000
        class 1
001
        class 2
010
        class 3
011
        class 4
100
        class 5
All other values are reserved.
When the DCS 1800 band is used (for exceptions see 3.4.12):
Bits
321
000
        class 1
001
        class 2
010
        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 GSM 04.80
0 1 defined in GSM 04.80
10 defined in GSM 04.80
1 1 defined in GSM 04.80
SM capability (MT SMS pt to pt capability) (octet 4)
Bit 4
0
    Mobile Station does not support mobile terminated point to point SMS
    Mobile Station supports mobile terminated point to point SMS
```

Table 10.10a/GSM 04.08 Mobile Station Classmark 2 information element

FC Frequency Capability (octet 4)

When the GSM 900 band is used (for exceptions see 3.4.12):

bit 1

- 0 The mobile station does not support the extension band G1 in addition to the primary GSM band. (For definition of frequency bands see GSM 05.05)
- 1 The mobile station does support the extension band G1 in addition to the primary GSM band. (For definition of frequency bands see GSM 05.05)

When the DCS 1800 band is used (for exceptions see 3.4.12):

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 G1 extension band when transmitted on a DCS 1800 channel.

Classmark 3 (octet 5, bit 8)

- 0 No additional MS capability information available
- 1 Additional MS capabilities are described in the Classmark 3 information element

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

Table 10.10b/GSM 04.08 Mobile Station Classmark 2 information element

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

3GPP TSG-CN1 Meeting #27 Bangkok, Thailand, 11 – 15 November 2002

				CHAN	IGE	REQ	UE	ST				CR-Form-v7
ж	04	4.08	CR	A1141	l a	rev	-	¥	Current ver	sion:	5.18.1	æ
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the # symbols.										mbols.		
Proposed change affects: UICC apps ME Radio Access Network X Core Network X												
Title: ₩	Cla	rification	on on	Revision	level							
Source: #	T-M	obile										
Work item code: ₩	GS	M/UM	TS inte	erworking					Date: 3	04/1	1/2002	
Category: अ	Use of the Details	F (corr A (corr B (add C (fund D (edid led exp	rection, respon dition of ctional torial m olanatio	owing cate) ds to a cor f feature), modification ons of the a TR 21.900	rection in the second of the s	ture)		lease	Release: 8 Use one of 2 e) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	f the fol (GSM) (Relea (Relea (Relea	lowing re Phase 2 ase 1996 ase 1997 ase 1999 ase 4) ase 5))))
Reason for change	e: #	comp the N	oatibili //S is i	ty is not c	learly d ted. The	lefined. e behav	The r	evis	petween MS ion level ind e network if	icates v	which re	lease in
Summary of chang	ge:₩	The CR request, that a network shall use in case of unknown revision level signalled from the MS within the MS classmark information 1 and 2 the highest revision level of the network implementation.										
Consequences if not approved:	Ж								work fall bac sary the net			
Clauses affected:	ж	10.5.	.1.5, 1	0.5.1.6								
Other specs affected:		YN	Test	r core spe specificat Specifica	tions	ons	æ					
Other comments:	\mathfrak{H}											

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

- downloaded from the 3GPP server under $\underline{\text{ftp://ftp.3gpp.org/specs/}}$ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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 10.6/GSM 04.08 and table 10.9/GSM 04.08.

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

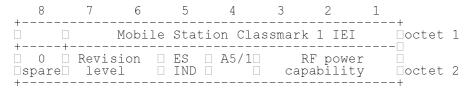


Figure 10.6/GSM 04.08: Mobile Station Classmark 1 information element

Table 10.9/GSM 04.08: Mobile Station Classmark 1 information element

```
Revision level (octet 2)
 76
 0 0 Reserved for phase 1
 0 1 Used by phase 2 mobile stations
All other values are reserved for future use. If the network receives a revision level specified as
'reserved for future use', then it shall use the highest revision level supported by the network.
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, bit 4)
       encryption algorithm A5/1 available
      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
321
000
        class 1
001
        class 2
010
        class 3
011
        class 4
100
        class 5
All other values are reserved.
When the DCS 1800 band is used (for exceptions see 3.4.18):
Bits
321
000
        class 1
001
        class 2
010
        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 10.7/GSM 04.08, table 10.10a/GSM 04.08 and table 10.10b/GSM 04.08.

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

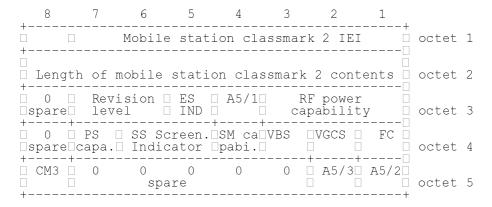


Figure 10.7/GSM 04.08: Mobile Station Classmark 2 information element

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 10.10a/GSM 04.08: Mobile Station Classmark 2 information element

```
Revision level (octet 3)
 Bits
 76
 0 0 Reserved for phase 1
 0 1 Used by phase 2 mobile stations
All other values are reserved for future use. If the network receives a revision level specified as
'reserved for future use', then it shall use the highest revision level supported by the network.
ES IND (octet3, 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
When GSM 900 P, E [or R] band is used (for exceptions see 3.4.18):
Bits
321
0 0 0 class 1
       class 2
001
010
        class 3
011
        class 4
100
       class 5
All other values are reserved.
When the DCS 1800 band is used (for exceptions see 3.4.18):
Bits
321
000
       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 GSM 04.80
0 1 defined in GSM 04.80
1 0 defined in GSM 04.80
1 1 defined in GSM 04.80
SM capability (MT SMS pt to pt capability) (octet 4)

Bit 4
0 Mobile station does not support mobile terminated point to point SMS
Mobile station supports mobile terminated point to point SMS

Table 10.10b/GSM 04.08: Mobile Station Classmark 2 information element

```
VBS notification reception (octet 4)
Bit 3
0 no VBS capability or no notifications wanted
  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 a GSM 900 band is used (for exceptions see 3.4.18):
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 band. (For definition of frequency bands see
GSM 05.05)
Note: For mobile stations supporting the R-GSM band further information can be found in MS
Classmark 3.
When the DCS 1800 band is used (for exceptions see 3.4.18):
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 DCS 1800 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
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
  encryption algorithm A5/2 available
```

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