RP-030591

Title CRs (R'99 and Rel-4/Rel-5 Category A) to TS 25.123, "out-of-service area for

3.84 Mcps & 1.28 Mcps TDD"

Source TSG RAN WG4

Agenda Item 7.5.3

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-030890	25.123	322		F	R99	3.13.0	out-of-service area for 3.84Mcps TDD	TEI
R4-030891	25.123	323		Α	Rel-4	4.10.0	out-of-service area for 3.84Mcps TDD	TEI
R4-030892	25.123	324		Α	Rel-5	5.6.0	out-of-service area for 3.84Mcps TDD	TEI
R4-030893	25.123	325		F	Rel-4	4.10.0	out-of-service area for 1.28Mcps TDD	LCRTDD-RF
R4-030894	25.123	326		Α	Rel-5	5.6.0	out-of-service area for 1.28Mcps TDD	LCRTDD-RF

3GPP TSG RAN WG4 (Radio) Meeting #29 San Diego, USA 17 - 21 November 2003

CHANGE REQUEST												
¥	25.123	CR <mark>322</mark>	жrev	*	Current version: 3.13.0 **							

*	25.123 CR 322	# Current version: 3.13.0 #
For <u>HELP</u> on t	using this form, see bottom of this page or lo	ok at the pop-up text over the 🕊 symbols.
Proposed change	affects: UICC apps光 ME X	Radio Access Network Core Network
Title: %	out-of-service area for 3.84 Mcps TDD	
Source: #	RAN WG4	
Work item code: #	TEI	<i>Date:</i>
Category: ३	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlie B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories of be found in 3GPP TR 21.900.	R97 (Release 1997) R98 (Release 1998) R99 (Release 1999)
Reason for chang	the RRC specification requires the Unout De behaviour is described for the found. If the UE were to continue to would not be able to find 2G cells of	CH to CELL_FACH/CELL_PCH/URA_PCH IE to 'select a suitable UTRA cell'. However, e case that no suitable UTRA cell can be search for a UTRA cell indefinitely then it the RPLMN, or cells of other PLMNs if not be able to make an emergency call even
Summary of chan	of service' and performs actions acc	or cell is not found then the UE moves to 'out ording to 25.331. The actions described in to perform cell selection on the RPLMN and search for other PLMNs.
Consequences if not approved:	could search for a suitable UTRA ce	LL_FACH/CELL_PCH/URA_PCH, a UE Il indefinitely and so could be denied access Ils of other PLMNs that might be available.
Clauses affected:	% 4.2.2.1, 5.4.2.3	
Other specs affected:	Y N X Other core specifications Test specifications O&M Specifications	*
Other comments:	Equivalent CRs in other Releases: CA to 25.123 v5.6.0	R323 cat. A to 25.123 v4.10.0, CR324 cat.

- 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 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.

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion S defined in TS25.304 for the serving cell at least every DRX cycle. The UE shall filter the PCCPCH RSCP measurement of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$ (see table 4.1).

If the UE has evaluated in N_{serv} successive measurements that the serving cell does not fulfil the cell selection criterion S, the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities.

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in [18].

On transition from CELL_DCH to CELL_PCH/URA_PCH, if a UE cannot find a suitable UTRA cell, then it is considered to be "out of service area" and shall perform actions according to [16].

The S-criteria detection delay is defined as the time between the occurrence of an event which leads to that the cell selection criteria S for serving cell is not fulfilled and the moment in time when the UE detects that the cell selection criteria S for serving cell is not fulfilled.

The UE shall filter the P-CCPCH RSCP measurements used for cell selection criteria S evaluation of the serving cell over at least 3 measurement periods $T_{\text{Measurement period intra}}$.

The S-critera detection delay in CELL_FACH state shall be less than:

$$T_{S\text{-criteria}} = 5 \times T_{measurement period intra}$$
 ms

where

T_{measurement period intra} is specified in 8.4.2.2.2.

If the UE has evaluated that the serving cell does not fulfil the cell selection criterion S during 4 s and if during this time period the UE has not found any new suitable cell based on measurements of neighbour cells as indicated in the measurement control system information, the UE shall consider having detected "out of service area" and initiate actions according to [16] and [18].

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CHANGE REQUEST												
æ	25.123 CR 323	жrev	æ	Current version: 4.10.0 **								

* 2!	5 <mark>.123</mark> CR <mark>323</mark>	¥ Current ve	ersion: 4.10.0 **							
For <u>HELP</u> on using	this form, see bottom of this page	or look at the pop-up te	xt over the % symbols.							
Proposed change affe	cts: UICC apps#	X Radio Access Netw	ork Core Network							
Title: 第 0t	ut-of-service area for 3.84 Mcps TD)D								
Source: # R	AN WG4									
Work item code: ₩ TI	≣I	Date:	26/11/2003							
Category:		Release:	₩ Rel-4							
	e <u>one</u> of the following categories:		of the following releases:							
	F (correction)	2	(GSM Phase 2)							
	A (corresponds to a correction in an B (addition of feature),	earlier release) R96 R97	(Release 1996) (Release 1997)							
	C (functional modification of feature)		(Release 1998)							
	D (editorial modification)	R99	(Release 1999)							
Det	ailed explanations of the above catego found in 3GPP TR 21.900.	ories can Rel-4 Rel-5	(Release 4) (Release 5)							
De	100110 111 301 1 11X 21.900.	Rel-6	(Release 6)							
Reason for change: 3	When the UE moves from CELL the RRC specification requires to no UE behaviour is described for found. If the UE were to continut would not be able to find 2G cell available. In this case the UE were if other cells are available.	he UE to 'select a suital or the case that no suital e to search for a UTRA Is of the RPLMN, or cell	ole UTRA cell'. However, ble UTRA cell can be cell indefinitely then it s of other PLMNs if							
Summary of change: 3	It is proposed that if a suitable UTRA cell is not found then the UE moves to 'out of service' and performs actions according to 25.331. The actions described in									
	25.331 require an 'out of service' UE to perform cell selection on the RPLMN and after some further time to perform a search for other PLMNs.									
Consequences if a not approved:	On transition from CELL_DCH t could search for a suitable UTR to emergency calls on 2G cells or	A cell indefinitely and so	could be denied access							
Clauses offerted: 0	0 40044 5400									
Clauses affected:	4.2.2.1.1, 5.4.2.3									
Other specs 3 affected:	Y N X Other core specifications X Test specifications O&M Specifications	*								
Other comments: 3	Equivalent CRs in other Release	es: CR322 cat. F to 25.	123 v3.13.0, CR324 cat. A							

- 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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- 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.

4.2.2.1.1 3.84 Mcps TDD option

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion S_{rxlev} defined in [18] for the serving cell at least every DRX cycle. The UE shall filter the PCCPCH RSCP measurement of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$ (see table 4.1).

If the UE has evaluated in N_{serv} successive measurements that the serving cell does not fulfil the cell selection criterion S, the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities.

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in [18].

On transition from CELL_DCH to CELL_PCH/URA_PCH, if a UE cannot find a suitable UTRA cell, then it is considered to be "out of service area" and shall perform actions according to [16].

5.4 Cell Re-selection in Cell_FACH

5.4.1 Introduction

The UE shall evaluate the cell re-selection criteria specified in [18], based on radio measurements, and if a better ranked cell is found that cell is selected.

5.4.2 Requirements for 3.84Mcps TDD option

<next changed section>

5.4.2.3 Measurement and evaluation of cell selection criteria S of serving cell

The S-criteria detection delay is defined as the time between the occurrence of an event which leads to that the cell selection criteria S for serving cell is not fulfilled and the moment in time when the UE detects that the cell selection criteria S for serving cell is not fulfilled.

The UE shall filter the P-CCPCH RSCP measurements used for cell selection criteria S evaluation of the serving cell over at least 3 measurement periods $T_{\text{Measurement period intra}}$.

The S-critera detection delay in CELL_FACH state shall be less than:

$$T_{S-criteria} = 5 \times T_{measurement period intra}$$
 ms

where

T_{measurement period intra} is specified in 8.4.2.2.2.

If the UE has evaluated that the serving cell does not fulfil the cell selection criterion S during 4 s and if during this time period the UE has not found any new suitable cell based on measurements of neighbour cells as indicated in the measurement control system information, the UE shall consider having detected "out of service area" and initiate actions according to [16] and [18].

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CHANGE REQUEST												
¥	25.123 CR 324	≋rev	æ	Current version:	5.6.0	ж						

æ	25.123 CR 324
For <u>HELP</u> on us	ring this form, see bottom of this page or look at the pop-up text over the % symbols.
Proposed change a	ffects: UICC apps器 ME X Radio Access Network Core Network ☐
Title: %	out-of-service area for 3.84 Mcps TDD
Source: #	RAN WG4
Work item code: ₩	TEI Date: # 26/11/2003
Category:	Release: \$\mathbb{R} \text{Rel-5}\$ Use one of the following categories:
Reason for change	When the UE moves from CELL_DCH to CELL_FACH/CELL_PCH/URA_PCH the RRC specification requires the UE to 'select a suitable UTRA cell'. However, no UE behaviour is described for the case that no suitable UTRA cell can be found. If the UE were to continue to search for a UTRA cell indefinitely then it would not be able to find 2G cells of the RPLMN, or cells of other PLMNs if available. In this case the UE would not be able to make an emergency call even if other cells are available.
Summary of chang	It is proposed that if a suitable UTRA cell is not found then the UE moves to 'out of service' and performs actions according to 25.331. The actions described in 25.331 require an 'out of service' UE to perform cell selection on the RPLMN and after some further time to perform a search for other PLMNs.
Consequences if not approved:	On transition from CELL_DCH to CELL_FACH/CELL_PCH/URA_PCH, a UE could search for a suitable UTRA cell indefinitely and so could be denied access to emergency calls on 2G cells or cells of other PLMNs that might be available.
Clauses affected:	£ 4.2.2.1.1, 5.4.2.3
Other specs affected:	Y N X Other core specifications X Test specifications O&M Specifications
Other comments:	# Equivalent CRs in other Releases: CR322 cat. F to 25.123 v3.13.0, CR323 cat. A to 25.123 v4.10.0

- 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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- 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.

4.2.2.1.1 3.84 Mcps TDD option

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion S_{rxlev} defined in [18] for the serving cell at least every DRX cycle. The UE shall filter the PCCPCH RSCP measurement of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$ (see table 4.1).

If the UE has evaluated in N_{serv} successive measurements that the serving cell does not fulfil the cell selection criterion S, the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities.

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in [18].

On transition from CELL_DCH to CELL_PCH/URA_PCH, if a UE cannot find a suitable UTRA cell, then it is considered to be "out of service area" and shall perform actions according to [16].

5.4 Cell Re-selection in Cell_FACH

5.4.1 Introduction

The UE shall evaluate the cell re-selection criteria specified in [18], based on radio measurements, and if a better ranked cell is found that cell is selected.

5.4.2 Requirements for 3.84Mcps TDD option

<next changed section>

5.4.2.3 Measurement and evaluation of cell selection criteria S of serving cell

The S-criteria detection delay is defined as the time between the occurrence of an event which leads to that the cell selection criteria S for serving cell is not fulfilled and the moment in time when the UE detects that the cell selection criteria S for serving cell is not fulfilled.

The UE shall filter the P-CCPCH RSCP measurements used for cell selection criteria S evaluation of the serving cell over at least 3 measurement periods $T_{\text{Measurement period intra}}$.

The S-critera detection delay in CELL_FACH state shall be less than:

$$T_{S-criteria} = 5 \times T_{measurement period intra}$$
 ms

where

T_{measurement period intra} is specified in 8.4.2.2.2.

If the UE has evaluated that the serving cell does not fulfil the cell selection criterion S during 4 s and if during this time period the UE has not found any new suitable cell based on measurements of neighbour cells as indicated in the measurement control system information, the UE shall consider having detected "out of service area" and initiate actions according to [16] and [18].

3GPP TSG RAN WG4 (Radio) Meeting #29

San Diego, USA 17 - 21 November 2003

													00.5	
CHANGE REQUEST													CR-For	m-v7
æ	25	.123	CR	325		≋rev		æ	Curre	ent ver	sion:	4.10	%	
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	affec	ts:	JICC a	pps %		ME 🔰	Rac	dio A	ccess	Netwo	rk	Core	e Network	(
Title:	out	-of-ser	vice a	ea for 1.	.28Mcp	os								
Source: #	RA	N WG	4											
Work item code: ₩	LC	RTDD-	-RF						L	Date: #	26	/11/20	03	
Category: #	F								Rele	ase: #	Re	1-4		
	Use			owing cate	egories	:			Use	e <u>one</u> of	f the fo	ollowing	releases:	
		F (cor		ds to a co	rroction	ı in an a	arliar r	alaasi		2 R96		M Phas ease 19		
				is to a co feature),	rrection	ı III alı ed	anner re	eleasi		R97		ease 19		
				modificati		eature)				R98	(Rele	ease 19	98)	
				<i>odification</i> ons of the		categorie	es can			R99 Rel-4		ease 19 ease 4)	199)	
				ΓR 21.900		oatogom	o our			Rel-5		ease 5)		
									i	Rel-6	(Rele	ease 6)		
Reason for change	e: #	Whe	n the l	JE move	s from	CELL	DCH t	to CE	ELL F	ACH/C	ELL	PCH/L	JRA_PCH	1
J		the F	RRC sp	ecification	on req	uires the	e UE t	o 'se	lect a	suitabl	e UTI	RA cel	'. Howeve	
				aviour is										
				e able to									ly then it	
													icy call ev	/en
		if oth	er cell	s are ava	ailable.	<u>-</u>								
Summary of chang	xe∙ ₩	It is r	oronos	ed that if	a suit	able LIT	RA ce	ا عا الد	not for	ınd the	n the	IJF m	oves to 'o	ı ıt
	,												scribed in	
												on the	RPLMN a	and
		arter	some	further ti	me to	репогт	a sea	arch i	or otn	er PLIV	IINS.			
Consequences if	æ	On tr	ransitic	n from C	CELL_I	DCH to	CELL	_FAC	CH/CE	LL_PC	CH/UF	RA_PC	H, a UE	
not approved:													nied acce	
		to en	nergen	cy calls	on 2G	cells or	cells	ot otr	ner PL	IVINS tr	nat m	ignt be	available	9.
Clauses affected:	*	4.2.2	2.1.2, 3	5.4.3.4										
		W 1	1											
Other specs	æ	Y N	Otho	r core sp	acifica	tions	æ							
affected:	თ	X		specifica		1110119	Ф							
		X		Specific										
Othor comment	00													
Other comments:	Ж	Equi	valent	CRs in c	ther R	eleases	: CR3	26 c	at. A t	0 25.12	23 v5	6.0		

- 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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<next changed section>

4.2.2.1.2 1.28 Mcps TDD option

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion S defined in [18] for the serving cell at least every DRX cycle. The UE shall filter the PCCPCH RSCP level of the serving cell using at least 2 measurements, which are taken so that the time difference between the first measurement and the last measurement used for filtering is at least $T_{measureNTDD}/2$ (see table 4.1A).

If the UE has evaluated in N_{serv} consecutive DRX cycles that the serving cell does not fulfil the cell selection criterion S the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities.

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in [18].

After this 12 s period a UE in Cell_PCH or URA_PCH is considered to be "out of service area" and shall perform actions according to [16].

On transition from CELL_DCH to CELL_PCH/URA_PCH, if a UE cannot find a suitable UTRA cell, then it is considered to be "out of service area" and shall perform actions according to [16].

The S-criteria detection delay is defined as the time between the occurrence of an event which leads to that the cell selection criteria S for serving cell is not fulfilled and the moment in time when the UE detects that the cell selection criteria S for serving cell is not fulfilled.

The UE shall filter the P-CCPCH RSCP measurements used for cell selection criteria S evaluation of the serving cell over at least 3 measurement periods $T_{Measurement_Period\ Intra}$.

The S-criteria detection delay in CELL_FACH state shall be less than:

$$T_{S-criteria} = 5 \times T_{Measurement Period Intra} ms$$

where $T_{Measurement_Period\ Intra}$ is specified in 8.4A.2.2.2.

The UE is "out of service area" if the UE has evaluated for 4 s that that the serving cell does not fulfil the cell selection criterion S and if the UE has not found any new suitable cell based on searches and measurements of the neighbour cells indicated in the measurement control system information during these 4 s. When the UE is "out of service area" it shall initiate cell selection procedures for the selected PLMN as defined in [18].

3GPP TSG RAN WG4 (Radio) Meeting #29

San Diego, USA 17 - 21 November 2003

CHANGE REQUEST													R-Form-v7	
æ	25	.123	CR	326		≋rev		Ж	Curre	ent vers	sion:	5.6.) ⁸	¥
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the % symbols.												ools.		
Proposed change	affec	<i>ts:</i> (JICC a	pps 		ME D	<mark>∢</mark> Ra∉	dio A	ccess	Netwo	rk	Core	Netv	work
Title:	out	-of-ser	vice ar	ea for 1.	28Mc	ps								
Source: #	RA	N WG	4											
Work item code: ₩	LC	RTDD-	RF						D	Oate: %	26/	11/2003	3	
Category: #		F (corr A (corr B (add C (fund	rection) respond lition of ctional r	wing cated as to a confeature), modification of the confeature of	rrection	n in an ea	arlier re	elease	Use 2 e) F F	ase: % e <u>one</u> of 2 R96 R97 R98 R99	the fo (GSM (Rele (Rele (Rele	-5 llowing r 1 Phase ase 199 ase 199 ase 199	2) 6) 7) 8)	ses:
	Deta	iled exp	olanatio	ns of the	above	categorie	es can		F F	Rel-4 Rel-5 Rel-6	(Rele	ase 199 ase 4) ase 5) ase 6)	9)	
Reason for change	9 <i>:</i> ¥6	the R no Ul found would avail	RRC sp E beha d. If the d not b able. In	JE move ecification aviour is a UE were able to this case are available.	on requestriction description of the description of	uires the bed for ontinue 2G cells UE wou	e UE t the ca to sea of the	o 'sel se th arch fo RPL	lect a s nat no s or a U MN, o	suitable suitable TRA ce or cells	e UTF e UTF ell ind of oth	RA cell'. RA cell d efinitely er PLM	How can I the Ns i	vever, be n it f
Summary of chang	уе: Ж	of se 25.33	rvice' a 31 requ	ed that if and perfo uire an 'o further ti	orms a	ctions a service'	ccord UE to	ing to perfo	25.33 orm ce	31. The	action c	ns desc	cribe	ed in
Consequences if not approved:	*	could	d searc	n from C h for a s cy calls o	uitable	e UTRA	cell in	defin	nitely a	nd so d	could	be deni	ed a	access
Clauses affected:	*	422	.1.2, 5	5434										
Other specs affected:	æ	Y N X X X	Other Test s	core specifica	tions		æ							
Other comments:	ж	Equi	valent (CRs in o	ther R	teleases	: CR3	25 ca	at. F to	25.12	3 v4.	10.0		

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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.

<next changed section>

4.2.2.1.2 1.28 Mcps TDD option

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion S defined in [18] for the serving cell at least every DRX cycle. The UE shall filter the PCCPCH RSCP level of the serving cell using at least 2 measurements, which are taken so that the time difference between the first measurement and the last measurement used for filtering is at least $T_{measureNTDD}/2$ (see table 4.1A).

If the UE has evaluated in N_{serv} consecutive DRX cycles that the serving cell does not fulfil the cell selection criterion S the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities.

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in [18].

After this 12 s period a UE in Cell_PCH or URA_PCH is considered to be "out of service area" and shall perform actions according to [16].

On transition from CELL_DCH to CELL_PCH/URA_PCH, if a UE cannot find a suitable UTRA cell, then it is considered to be "out of service area" and shall perform actions according to [16].

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The UE shall filter the P-CCPCH RSCP measurements used for cell selection criteria S evaluation of the serving cell over at least 3 measurement periods $T_{Measurement_Period\ Intra}$.

The S-critera detection delay in CELL_FACH state shall be less than:

$$T_{S-criteria} = 5 \times T_{Measurement Period Intra} ms$$

where $T_{Measurement_Period\ Intra}$ is specified in 8.4A.2.2.2.

The UE is "out of service area" if the UE has evaluated for 4 s that that the serving cell does not fulfil the cell selection criterion S and if the UE has not found any new suitable cell based on searches and measurements of the neighbour cells indicated in the measurement control system information during these 4 s. When the UE is "out of service area" it shall initiate cell selection procedures for the selected PLMN as defined in [18].