TSG-RAN Meeting #17
Biarritz, France, 3 - 6 September 2002

RP-020558

Title: **Agreed and linked CRs (Release'99 and Rel-4/Rel-5 category A) on SFN-SFN type 1 measurement to TS 25.331, 25.215 and 25.225**

Source: **TSG-RAN WG2**

Agenda item: **7.2.6**

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Versio	V
R2-022392	agreed	25.331	1573	1	R99	Problems with "SFN-SFN observed time difference"	F	3.11.0	3
R2-022416	agreed	25.331	1574	1	Rel-4	Problems with "SFN-SFN observed time difference"	A	4.5.0	4
R2-022417	agreed	25.331	1575	1	Rel-5	Problems with "SFN-SFN observed time difference"	A	5.1.0	5
R1-02-1080	agreed	25.215	126	-	R99	Correction of UE SFN-SFN type 1 measurement	F	3.10.0	3
R1-02-1080	agreed	25.215	127	-	Rel-4	Correction of UE SFN-SFN type 1 measurement	A	4.4.0	4
R1-02-1080	agreed	25.215	128	-	Rel-5	Correction of UE SFN-SFN type 1 measurement	A	5.0.0	5
R1-02-1113	agreed	25.225	059	-	R99	Correction of UE SFN-SFN type 1 measurement for TDD	F	3.10.0	3
R1-02-1113	agreed	25.225	060	-	Rel-4	Correction of UE SFN-SFN type 1 measurement for TDD	A	4.4.0	4
R1-02-1113	agreed	25.225	061	-	Rel-5	Correction of UE SFN-SFN type 1 measurement for TDD	A	5.1.0	5

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CHANGE REQUEST

⌘ **25.215** CR **126** ⌘**rev** **-** ⌘ Current version: **3.10.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Correction of UE SFN-SFN type 1 measurement	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 2002-08-14

Category: ⌘ **F**   ***Release:*** ⌘ R99

Use <u>one</u> of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use <u>one</u> of the following releases:
2   *(GSM Phase 2)*
R96   *(Release 1996)*
R97   *(Release 1997)*
R98   *(Release 1998)*
R99   *(Release 1999)*
Rel-4   *(Release 4)*
Rel-5   *(Release 5)*
Rel-6   *(Release 6)*

Reason for change: ⌘	RAN2 has removed the UE SFN-SFN type 1 measurement for cell DCH state due to reporting problems. Furthermore, there seems to be no benefit for this measurement in cell DCH state.
Summary of change: ⌘	UE SFN-SFN type 1 measurement is removed for cell DCH state. **Impact Analysis:** Impact is isolated only to SFN-SFN type 1 measurement function: • Removal of a function where the specification was ○ Incorrect Would not affect implementations that either do or do not support the removed function.
Consequences if not approved: ⌘	A measurement is defined although there is no possibility of reporting the result. Furthermore, there seems to be no benefit for this measurement in cell DCH state.

Clauses affected: ⌘	5.1.9		

	Y	N	
Other specs ⌘	**X**		Other core specifications ⌘ 25.331
affected:		**X**	Test specifications
		X	O&M Specifications

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 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.

5.1.9 SFN-SFN observed time difference

Definition	**Type 1:** The SFN-SFN observed time difference to cell is defined as: $OFF \times 38400 + T_m$, where: $T_m = T_{RxSFNj} - T_{RxSFNi}$, given in chip units with the range [0, 1, …, 38399] chips T_{RxSFNj} is the time at the beginning of a received neighbouring P-CCPCH frame from cell j. T_{RxSFNi} is time at the beginning of the neighbouring P-CCPCH frame from cell i received most recent in time before the time instant T_{RxSFNj} in the UE. If the next neighbouring P-CCPCH frame is received exactly at T_{RxSFNj} then $T_{RxSFNj} = T_{RxSFNi}$ (which leads to $T_m = 0$). and $OFF = (SFN_i - SFN_j)$ mod 256, given in number of frames with the range [0, 1, …, 255] frames SFN_j is the system frame number for downlink P-CCPCH frame from cell j in the UE at the time T_{RxSFNj}. SFN_i is the system frame number for the P-CCPCH frame from cell i received in the UE at the time T_{RxSFNi}. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE. **Type 2:** The relative timing difference between cell j and cell i, defined as $T_{CPICHRxj} - T_{CPICHRxi}$, where: $T_{CPICHRxj}$ is the time when the UE receives one Primary CPICH slot from cell j $T_{CPICHRxi}$ is the time when the UE receives the Primary CPICH slot from cell i that is closest in time to the Primary CPICH slot received from cell j. The reference point for the SFN-SFN observed time difference type 2 shall be the antenna connector of the UE.
Applicable for	**Type 1:** Idle, URA_PCH intra, CELL_PCH intra, CELL_FACH intra, ~~CELL_DCH intra~~ **Type 2:** URA_PCH intra, URA_PCH inter, CELL_PCH intra, CELL_PCH inter, CELL_FACH intra, CELL_FACH inter CELL_DCH intra, CELL_DCH inter

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CHANGE REQUEST

⌘ **25.215 CR 127** ⌘ **rev** **-** ⌘ Current version: **4.4.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Correction of UE SFN-SFN type 1 measurement	

Source: ⌘	TSG-RAN WG2

Work item code: ⌘	TEI	***Date:*** ⌘	2002-08-14

Category: ⌘	**A**	***Release:*** ⌘	Rel-4
	Use one of the following categories:		*Use one of the following releases:*
	F *(correction)*		2 *(GSM Phase 2)*
	A *(corresponds to a correction in an earlier release)*		R96 *(Release 1996)*
	B *(addition of feature),*		R97 *(Release 1997)*
	C *(functional modification of feature)*		R98 *(Release 1998)*
	D *(editorial modification)*		R99 *(Release 1999)*
	Detailed explanations of the above categories can		Rel-4 *(Release 4)*
	be found in 3GPP TR 21.900.		Rel-5 *(Release 5)*
			Rel-6 *(Release 6)*

Reason for change: ⌘	RAN2 has removed the UE SFN-SFN type 1 measurement for cell DCH state due to reporting problems. Furthermore, there seems to be no benefit for this measurement in cell DCH state.

Summary of change: ⌘	UE SFN-SFN type 1 measurement is removed for cell DCH state.

Consequences if not approved: ⌘	A measurement is defined although there is no possibility of reporting the result. Furthermore, there seems to be no benefit for this measurement in cell DCH state.

Clauses affected: ⌘	5.1.9

		Y	**N**	
Other specs affected: ⌘		**X**		Other core specifications ⌘ 25.331
			X	Test specifications
			X	O&M Specifications

Other comments: ⌘	

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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.

5.1.9 SFN-SFN observed time difference

Definition	**<u>Type 1:</u>** The SFN-SFN observed time difference to cell is defined as: $OFF\times38400 + T_m$, where: $T_m = T_{RxSFNj} - T_{RxSFNi}$, given in chip units with the range [0, 1, …, 38399] chips T_{RxSFNj} is the time at the beginning of a received neighbouring P-CCPCH frame from cell j. T_{RxSFNi} is time at the beginning of the neighbouring P-CCPCH frame from cell i received most recent in time before the time instant T_{RxSFNj} in the UE. If the next neighbouring P-CCPCH frame is received exactly at T_{RxSFNj} then $T_{RxSFNj} = T_{RxSFNi}$ (which leads to $T_m=0$). and $OFF=(SFN_i - SFN_j) \bmod 256$, given in number of frames with the range [0, 1, …, 255] frames SFN_j is the system frame number for downlink P-CCPCH frame from cell j in the UE at the time T_{RxSFNj}. SFN_i is the system frame number for the P-CCPCH frame from cell i received in the UE at the time T_{RxSFNi}. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE. **<u>Type 2:</u>** The relative timing difference between cell j and cell i, defined as $T_{CPICHRxj} - T_{CPICHRxi}$, where: $T_{CPICHRxj}$ is the time when the UE receives one Primary CPICH slot from cell j $T_{CPICHRxi}$ is the time when the UE receives the Primary CPICH slot from cell i that is closest in time to the Primary CPICH slot received from cell j. The reference point for the SFN-SFN observed time difference type 2 shall be the antenna connector of the UE.
Applicable for	**Type 1:** Idle, URA_PCH intra, CELL_PCH intra, CELL_FACH intra, ~~CELL_DCH intra~~ **Type 2:** URA_PCH intra, URA_PCH inter, CELL_PCH intra, CELL_PCH inter, CELL_FACH intra, CELL_FACH inter CELL_DCH intra, CELL_DCH inter

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CHANGE REQUEST

⌘ **25.215** CR **128** ⌘ **rev** **-** ⌘ Current version: **5.0.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Correction of UE SFN-SFN type 1 measurement
Source: ⌘	TSG-RAN WG1
Work item code: ⌘	TEI ***Date:*** ⌘ 2002-08-14
Category: ⌘ **A**	***Release:*** ⌘ Rel-5

Use 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.

Use one of the following releases:
2   (GSM Phase 2)
R96   (Release 1996)
R97   (Release 1997)
R98   (Release 1998)
R99   (Release 1999)
Rel-4   (Release 4)
Rel-5   (Release 5)
Rel-6   (Release 6)

Reason for change: ⌘	RAN2 has removed the UE SFN-SFN type 1 measurement for cell DCH state due to reporting problems. Furthermore, there seems to be no benefit for this measurement in cell DCH state.
Summary of change: ⌘	UE SFN-SFN type 1 measurement is removed for cell DCH state.
Consequences if not approved: ⌘	A measurement is defined although there is no possibility of reporting the result. Furthermore, there seems to be no benefit for this measurement in cell DCH state.

Clauses affected: ⌘	5.1.9

	Y	**N**		
Other specs ⌘	**X**		Other core specifications ⌘	25.331
affected:		**X**	Test specifications	
		X	O&M Specifications	

Other comments: ⌘	

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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.

5.1.9 SFN-SFN observed time difference

Definition	**Type 1:** The SFN-SFN observed time difference to cell is defined as: $OFF \times 38400 + T_m$, where: $T_m = T_{RxSFNj} - T_{RxSFNi}$, given in chip units with the range [0, 1, …, 38399] chips T_{RxSFNj} is the time at the beginning of a received neighbouring P-CCPCH frame from cell j. T_{RxSFNi} is time at the beginning of the neighbouring P-CCPCH frame from cell i received most recent in time before the time instant T_{RxSFNj} in the UE. If the next neighbouring P-CCPCH frame is received exactly at T_{RxSFNj} then $T_{RxSFNj} = T_{RxSFNi}$ (which leads to $T_m = 0$). and $OFF = (SFN_i - SFN_j) \bmod 256$, given in number of frames with the range [0, 1, …, 255] frames SFN_j is the system frame number for downlink P-CCPCH frame from cell j in the UE at the time T_{RxSFNj}. SFN_i is the system frame number for the P-CCPCH frame from cell i received in the UE at the time T_{RxSFNi}. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE. **Type 2:** The relative timing difference between cell j and cell i, defined as $T_{CPICHRxj} - T_{CPICHRxi}$, where: $T_{CPICHRxj}$ is the time when the UE receives one Primary CPICH slot from cell j $T_{CPICHRxi}$ is the time when the UE receives the Primary CPICH slot from cell i that is closest in time to the Primary CPICH slot received from cell j. The reference point for the SFN-SFN observed time difference type 2 shall be the antenna connector of the UE.
Applicable for	**Type 1:** Idle, URA_PCH intra, CELL_PCH intra, CELL_FACH intra, ~~CELL_DCH intra~~ **Type 2:** URA_PCH intra, URA_PCH inter, CELL_PCH intra, CELL_PCH inter, CELL_FACH intra, CELL_FACH inter CELL_DCH intra, CELL_DCH inter

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CHANGE REQUEST

⌘   **25.225** CR **059**   ⌘ **rev** **-** ⌘   Current version: **3.10.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐   ME **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Correction of UE SFN-SFN type 1 measurement for TDD		
Source: ⌘	TSG-RAN WG1		
Work item code: ⌘	TEI	***Date:*** ⌘	2002-08-20
Category: ⌘ **F**		***Release:*** ⌘ R99	

Use 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.

Use one of the following releases:
2   (GSM Phase 2)
R96   (Release 1996)
R97   (Release 1997)
R98   (Release 1998)
R99   (Release 1999)
Rel-4   (Release 4)
Rel-5   (Release 5)
Rel-6   (Release 6)

Reason for change: ⌘	RAN2 has removed the UE measurement "SFN-SFN type 1" for cell DCH state due to reporting problems. There is no benefit for this measurement seen in cell DCH state.
Summary of change: ⌘	UE SFN-SFN type 1 measurement is removed from cell DCH state. **Impact Analysis:** Impact is isolated only to SFN-SFN type 1 measurement function: • Removal of a function where the specification was o Incorrect Would not affect implementations that either do or do not support the removed function.
Consequences if not approved: ⌘	A measurement is defined although there is no possibility of reporting the result. There is no benefit for this measurement seen in cell DCH state.

Clauses affected: ⌘	5.1.10

Other specs affected: ⌘	Y	N		
	X		Other core specifications ⌘	25.331
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘	

5.1.10 SFN-SFN observed time difference

Definition	SFN-SFN observed time difference is the time difference of the reception times of frames from two cells (serving and target) measured in the UE and expressed in chips. It is distinguished by two types. Type 2 applies if the serving and the target cell have the same frame timing.
	The reference point for the SFN-SFN observed time difference type 1 and 2 shall be the antenna connector of the UE.
	<u>Type 1:</u> SFN-SFN observed time difference = OFF×38400 + T_m in chips, where:
	T_m = T_{RxSFNi} - T_{RxSFNk}, given in chip units with the range [0, 1, …, 38399] chips
	T_{RxSFNi} = time of start (defined by the first detected path in time) of the received frame SFN_i of the serving TDD cell i.
	T_{RxSFNk} = time of start (defined by the first detected path in time) of the received frame SFN_k of the target UTRA cell k received most recently in time before the time instant T_{RxSFNi} in the UE. If this frame SFN_k of the target UTRA cell is received exactly at T_{RxSFNi} then T_{RxSFNk}= T_{RxSFNi} (which leads to T_m=0).
	OFF = (SFN$_i$- SFN$_k$) mod 256, given in number of frames with the range [0, 1, …, 255] frames
	SFNi = system frame number for downlink frame from serving TDD cell i in the UE at the time T_{RxSFNi}.
	SFNk = system frame number for downlink frame from target UTRA cell k received in the UE at the time T_{RxSFNk}.(for FDD: the P-CCPCH frame)
	The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.
	<u>Type 2:</u> SFN-SFN observed time difference = T_{RxTSk} - T_{RxTSi}, in chips, where
	T_{RxTSi} : time of start (defined by the first detected path in time) of a timeslot received from the serving TDD cell i.
	T_{RxTSk} : time of start (defined by the first detected path in time) of a timeslot received from the target UTRA cell k that is closest in time to the start of the timeslot of the serving TDD cell i.
	The reference point for the SFN-SFN observed time difference type 2 shall be the antenna connector of the UE.
Applicable for	**Type 1:** CELL_FACH intra, ~~CELL_DCH intra~~ **Type 2:** Idle, URA_PCH intra, URA_PCH inter, CELL_PCH intra, CELL_PCH inter, CELL_FACH intra, CELL_FACH inter, CELL_DCH intra, CELL_DCH inter

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CHANGE REQUEST

⌘ **25.225** CR **060** ⌘**rev** **-** ⌘ Current version: **4.4.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Correction of UE SFN-SFN type 1 measurement for TDD	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 2002-08-20

Category: ⌘ **A**

Use *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.

Release: ⌘ Rel-4

Use *one* of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘	RAN2 has removed the UE measurement "SFN-SFN type 1" for cell DCH state due to reporting problems. There is no benefit for this measurement seen in cell DCH state.
Summary of change: ⌘	UE SFN-SFN type 1 measurement is removed from cell DCH state. **Impact Analysis:** Impact is isolated only to SFN-SFN type 1 measurement function: • Removal of a function where the specification was ○ Incorrect Would not affect implementations that either do or do not support the removed function.
Consequences if ⌘ ***not approved:***	A measurement is defined although there is no possibility of reporting the result. There is no benefit for this measurement seen in cell DCH state.

Clauses affected: ⌘	5.1.10

	Y	N		
Other specs ⌘	X		Other core specifications ⌘	25.331
affected:		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘	

5.1.10 SFN-SFN observed time difference

Definition	SFN-SFN observed time difference is the time difference of the reception times of frames from two cells (serving and target) measured in the UE and expressed in chips. It is distinguished by two types. Type 2 applies if the serving and the target cell have the same frame timing.
	The reference point for the SFN-SFN observed time difference type 1 and 2 shall be the antenna connector of the UE.
	Type 1:
	SFN-SFN observed time difference = $\begin{cases} \text{OFF} \times 12800 + T_m \text{ in chips} & \text{for } 1.28 \text{ Mcps TDD} \\ \text{OFF} \times 38400 + T_m \text{ in chips} & \text{for } 3.84 \text{ Mcps TDD} \end{cases}$
	where:
	$T_m = $ $T_{RxSFNi} - T_{RxSFNk}$, given in chip units
	with the range $\begin{cases} [0,1,\ldots,12799] \text{ chips} & \text{for } 1.28 \text{ Mcps TDD} \\ [0,1,\ldots,38399] \text{chips} & \text{for } 3.84 \text{ Mcps TDD} \end{cases}$
	$T_{RxSFNi} = $ time of start (defined by the first detected path in time) of the received frame SFN_i of the serving TDD cell i.
	$T_{RxSFNk} = $ time of start (defined by the first detected path in time) of the received frame SFN_k of the target UTRA cell k received most recently in time before the time instant T_{RxSFNi} in the UE. If this frame SFN_k of the target UTRA cell is received exactly at T_{RxSFNi} then $T_{RxSFNk} = T_{RxSFNi}$ (which leads to $T_m=0$).
	OFF = $(SFN_i - SFN_k)$ mod 256, given in number of frames with the range [0, 1, …, 255] frames
	SFNi = system frame number for downlink frame from serving TDD cell i in the UE at the time T_{RxSFNi}.
	SFNk = system frame number for downlink frame from target UTRA cell k received in the UE at the time T_{RxSFNk}.(for FDD: the P-CCPCH frame)
	The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.
	Type 2: SFN-SFN observed time difference = $T_{RxTSk} - T_{RxTSi}$, in chips, where
	T_{RxTSi} : time of start (defined by the first detected path in time) of a timeslot received from the serving TDD cell i.
	T_{RxTSk} : time of start (defined by the first detected path in time) of a timeslot received from the target UTRA cell k that is closest in time to the start of the timeslot of the serving TDD cell i.
	The reference point for the SFN-SFN observed time difference type 2 shall be the antenna connector of the UE.
Applicable for	**Type 1:** CELL_FACH intra, CELL_DCH intra
	Type 2:
	Idle,
	URA_PCH intra, URA_PCH inter,
	CELL_PCH intra, CELL_PCH inter,
	CELL_FACH intra, CELL_FACH inter,
	CELL_DCH intra, CELL_DCH inter

CR-Form-v7

CHANGE REQUEST

⌘ **25.225** CR **061** ⌘**rev** **-** ⌘ Current version: **5.1.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Correction of UE SFN-SFN type 1 measurement for TDD	
Source: ⌘	TSG-RAN WG1	
Work item code: ⌘	TEI	**Date:** ⌘ 2002-08-20

Category: ⌘ **A**

Use <u>one</u> of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Release: ⌘ Rel-5

Use <u>one</u> of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
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Reason for change: ⌘	RAN2 has removed the UE measurement "SFN-SFN type 1" for cell DCH state due to reporting problems. There is no benefit for this measurement seen in cell DCH state.
Summary of change: ⌘	UE SFN-SFN type 1 measurement is removed from cell DCH state. **Impact Analysis:** Impact is isolated only to SFN-SFN type 1 measurement function: • Removal of a function where the specification was ○ Incorrect Would not affect implementations that either do or do not support the removed function.
Consequences if not approved: ⌘	A measurement is defined although there is no possibility of reporting the result. There is no benefit for this measurement seen in cell DCH state.

Clauses affected: ⌘	5.1.10

	Y	N		
Other specs affected: ⌘	X		Other core specifications ⌘	25.331
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘	

5.1.10 SFN-SFN observed time difference

Definition	SFN-SFN observed time difference is the time difference of the reception times of frames from two cells (serving and target) measured in the UE and expressed in chips. It is distinguished by two types. Type 2 applies if the serving and the target cell have the same frame timing.
	The reference point for the SFN-SFN observed time difference type 1 and 2 shall be the antenna connector of the UE.
	Type 1:
	SFN-SFN observed time difference = $\begin{cases} \text{OFF} \times 12800 + T_m \ in \ chips & for \ 1.28 \ Mcps \ TDD \\ \text{OFF} \times 38400 + T_m \ in \ chips & for \ 3.84 \ Mcps \ TDD \end{cases}$
	where:
	$T_m = $ $T_{RxSFNi} - T_{RxSFNk}$, given in chip units
	with the range $\begin{cases} [0,1,\ldots,12799] \ chips & for \ 1.28 \ Mcps \ TDD \\ [0,1,\ldots,38399] chips & for \ 3.84 \ Mcps \ TDD \end{cases}$
	$T_{RxSFNi} = $ time of start (defined by the first detected path in time) of the received frame SFN_i of the serving TDD cell i.
	$T_{RxSFNk} = $ time of start (defined by the first detected path in time) of the received frame SFN_k of the target UTRA cell k received most recently in time before the time instant T_{RxSFNi} in the UE. If this frame SFN_k of the target UTRA cell is received exactly at T_{RxSFNi} then $T_{RxSFNk} = T_{RxSFNi}$ (which leads to T_m=0).
	OFF = $(SFN_i - SFN_k)$ mod 256, given in number of frames with the range [0, 1, …, 255] frames
	SFNi = system frame number for downlink frame from serving TDD cell i in the UE at the time T_{RxSFNi}.
	SFNk = system frame number for downlink frame from target UTRA cell k received in the UE at the time T_{RxSFNk}.(for FDD: the P-CCPCH frame)
	The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.
	Type 2: SFN-SFN observed time difference = $T_{RxTSk} - T_{RxTSi}$, in chips, where
	T_{RxTSi} : time of start (defined by the first detected path in time) of a timeslot received from the serving TDD cell i.
	T_{RxTSk} : time of start (defined by the first detected path in time) of a timeslot received from the target UTRA cell k that is closest in time to the start of the timeslot of the serving TDD cell i.
	The reference point for the SFN-SFN observed time difference type 2 shall be the antenna connector of the UE.
Applicable for	**Type 1:** CELL_FACH intra, CELL_DCH intra **Type 2:** Idle, URA_PCH intra, URA_PCH inter, CELL_PCH intra, CELL_PCH inter, CELL_FACH intra, CELL_FACH inter, CELL_DCH intra, CELL_DCH inter

3GPP TSG-RAN WG2 Meeting #31
Arlanda, Sweden, 19ᵗʰ – 23ʳᵈ August 2002

Tdoc R2-022392

												CR-Form-v5

CHANGE REQUEST

⌘	**25.331** CR **1573**	⌘ **rev**	**1**	⌘	Current version:	**3.11.0**	⌘

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

Proposed change affects: ⌘   (U)SIM ☐   ME/UE **X**   Radio Access Network **X**   Core Network ☐

Title: ⌘	Correction of SFN-SFN Measurement	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ June 16, 2002

Category: ⌘ **F**	***Release:*** ⌘ R99

Use 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.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change: ⌘	Currently, TS 25.331 states that UE shall report "SFN-SFN observed time difference" measurement in message MEASUREMENT REPORT for Intra- and Inter-frequency measurements, in case this has been requested by UTRAN (by setting IE "SFN-SFN observed time difference reporting indicator" to TRUE in a MEASUREMENT CONTROL message)
	However, TS 25.331 does not specify the details for this reporting. Specification of 'reference cell' for the measurement is missing. Especially, when the Active Set contains more than one cell, this opens up for different interpretations, resulting in different UE implementations.
	It should be noted that this is not a problem for "SFN-SFN observed time difference" measurement (Type 2)" as defined for UP Measurements.
	Furthermore, from a functional point of view, UE report of "SFN-SFN observed time difference" measurement in Intra-and Inter-frequency measurement report is not needed. In state Cell_DCH, "SFN-CFN observed time difference" measurement reporting serves the purpose for UE-UTRAN radio link synchronisation at handover. Therefore, it is proposed to remove SFN-SFN observed time difference from Intra- and Inter-frequency measurements.

Summary of change: ⌘	Section 8.6.7.7: Text on "SFN-SFN observed time difference" measurement has been deleted
	Section 10.3.7.3: IE "SFN-SFN observed time difference" deleted
	Section 10.3.7.5: IE "SFN-SFN observed time difference reporting indicator" deleted.
	Section 11.3: "Dummy" introduced in ASN.1
	14.1.6: "SFN-SFN observed time difference" deleted as report quantity in intra-frequency measurements.
	14.2.0c: "SFN-SFN observed time difference" deleted as report quantity in intra-frequency

measurements.

Unused ASN.1 type ReferenceSFN is removed.

Impact analysis:

Impacted functionality: Intra- and Inter-frequency measurement reporting

Clarification:
Removal of functionality that is currently not specified.

No impact on UE, since functionality is removed.

No impact to the UTRAN since the UTRAN cannot currently assume a specific UE behaviour for SFN-SFN observed time difference measurement reporting in intra- and- inter-frequency measurements.

Interoperability:

Isolated impact: the impact is isolated; only the corrected functionality is affected

Consequences if not approved:	⌘	Since UE behaviour is not specified, UTRAN can anyway not utilise the SFN-SFN observed time difference measurement in Intra-and Inter-frequency measurements. Incomplete requirements on UE behaviour will remain in specifications.

Clauses affected:	⌘	8.6.7.7, 10.3.7.3, 10.3.7.5, 11.3		
Other specs affected:	⌘	**X** Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	TS 25.215
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/3G_Specs/CRs.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 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

8.6.7.7 Cell Reporting Quantities

If the IE "Cell Reporting Quantities" is received by the UE, the UE shall store the content of the IE "Cell Reporting Quantities" to the variable MEASUREMENT_IDENTITY.

The UE shall include measured results in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities", except for the following cases:

If the IE "Cell Identity" is set to TRUE, the UE shall in this version of the specification:

1> treat the IE as if the IE "Cell Identity" is set to FALSE.

If the IE "Cell synchronisation information reporting indicator" is set to TRUE, the UE shall:

1> include the IE "Cell synchronisation information" in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities":

2> if the measurement is performed on another frequency; or

2> if the IE "Read SFN indicator" included in the IE "Cell info" of the measured cell is set to FALSE:

3> the UE may omit the information group "COUNT-C-SFN frame difference" in the IE "Cell synchronisation information".

2> if the measurement is performed on the same frequency and no RLC Transparent Mode COUNT-C exists in the UE:

3> set the IE "COUNT-C-SFN high" to 0.

2> otherwise:

3> include the information group "COUNT-C-SFN frame difference" with IE "COUNT-C-SFN high" set to:

COUNT-C-SFN high = (((SFN - (COUNT-C mod 4096)) mod 4096) div 256) * 256;

3> if RLC Transparent Mode COUNT-Cs exist in both CN domains:

4> use the COUNT-C of CS domain in this measurement.

If the IE "Proposed TGSN Reporting required" is set to TRUE, the UE shall:

1> if compressed mode was used to monitor a TDD cell and the variable TGSN_REPORTED is set to FALSE:

2> report the IE "Proposed TGSN" indicating the TGSN that suits best to the measured cell;

2> set the variable TGSN_REPORTED to TRUE.

1> otherwise

2> omit the IE "Proposed TGSN".

~~If the IE "SFN-SFN observed time difference reporting indicator" is set to "type 1" and the IE "Read SFN indicator" included in the IE "Cell info" of the measured cell is set to FALSE, the UE shall:~~

~~1> set the SFN-SFN observed time difference type 1 for that cell to a value in the range (0..38399) (i.e. the UE shall assume that the SFN of the measured cell differs less than a frame with respect to the reference cell).~~

10.3.7.3 Cell measured results

Includes non-frequency related measured results for a cell.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell Identity	OP		Cell Identity 10.3.2.2	
~~SFN-SFN observed time difference~~	~~OP~~		~~SFN-SFN observed time difference 10.3.7.63~~	
Cell synchronisation information	OP		Cell synchronisation information 10.3.7.6	
CHOICE mode	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>CPICH Ec/N0	OP		Integer(0..49)	According to CPICH_Ec/No in [19] and [20]. Fourteen spare values are needed.
>>CPICH RSCP	OP		Integer(0..91)	According to CPICH_RSCP in [19] and [20]. Thirty-six spare values are needed.
>>Pathloss	OP		Integer(46..158)	In dB. Fifteen spare values are needed.
>TDD				
>>Cell parameters Id	MP		Cell parameters Id 10.3.6.9	
>>Proposed TGSN	OP		Integer (0..14)	Proposal for the next TGSN
>>Primary CCPCH RSCP	OP		Primary CCPCH RSCP info 10.3.7.54	
>>Pathloss	OP		Integer(46..158)	In dB. Fifteen spare values are needed.
>>Timeslot list	OP	1 to < maxTS>		
>>>Timeslot ISCP	MP		Timeslot ISCP Info 10.3.7.65	The UE shall report the Timeslot ISCP in the same order as indicated in the cell info

10.3.7.5 Cell reporting quantities

Includes non-frequency related cell reporting quantities.

For all boolean types TRUE means inclusion in the report is requested.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
~~SFN-SFN observed time difference reporting indicator~~	~~MP~~		~~Enumerated(No report, type 1, type 2)~~	
Cell synchronisation information reporting indicator	MP		Boolean	
Cell Identity reporting indicator	MP		Boolean	
CHOICE *mode*	MP			
>FDD				
>>CPICH Ec/N0 reporting indicator	MP		Boolean	
>>CPICH RSCP reporting indicator	MP		Boolean	
>>Pathloss reporting indicator	MP		Boolean	
>TDD				
>>Timeslot ISCP reporting indicator	MP		Boolean	
>>Proposed TGSN Reporting required	MP		Boolean	
>>Primary CCPCH RSCP reporting indicator	MP		Boolean	
>>Pathloss reporting indicator	MP		Boolean	

11.3 Information element definitions

```
:
CellMeasuredResults ::=                  SEQUENCE {
    cellIdentity                          CellIdentity                          OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    sfn-SFN-ObsTimeDifferencedummy        SFN-SFN-ObsTimeDifference             OPTIONAL,
    cellSynchronisationInfo          CellSynchronisationInfo        OPTIONAL,
    modeSpecificInfo                      CHOICE {
        fdd                                  SEQUENCE {
            primaryCPICH-Info                    PrimaryCPICH-Info,
            cpich-Ec-N0                          CPICH-Ec-N0              OPTIONAL,
            cpich-RSCP                           CPICH-RSCP              OPTIONAL,
            pathloss                             Pathloss                OPTIONAL
        },
        tdd                                  SEQUENCE {
            cellParametersID                     CellParametersID,
            proposedTGSN                         TGSN                    OPTIONAL,
            primaryCCPCH-RSCP                    PrimaryCCPCH-RSCP       OPTIONAL,
            pathloss                             Pathloss                OPTIONAL,
            timeslotISCP-List                    TimeslotISCP-List       OPTIONAL
        }
    }
}
```

```
CellReportingQuantities ::=            SEQUENCE {
    -- dummy is not used in this version of the specification, it should
    -- be ignored by the receiver
    sfn-SFN-OTD-Typedummy                       SFN-SFN-OTD-Type,
    cellIdentity-reportingIndicator                 BOOLEAN,
    cellSynchronisationInfoReportingIndicator       BOOLEAN,
    modeSpecificInfo                        CHOICE {
        fdd                             SEQUENCE {
            cpich-Ec-N0-reportingIndicator                  BOOLEAN,
            cpich-RSCP-reportingIndicator                   BOOLEAN,
            pathloss-reportingIndicator                 BOOLEAN
        },
        tdd                             SEQUENCE {
            timeslotISCP-reportingIndicator             BOOLEAN,
            proposedTGSN-ReportingRequired              BOOLEAN,
            primaryCCPCH-RSCP-reportingIndicator            BOOLEAN,
            pathloss-reportingIndicator                 BOOLEAN
        }
    }
}

……..

ReferenceSFN ::=                    INTEGER (0..4095)
```

3GPP TSG-RAN WG2 Meeting #31
Arlanda, Sweden, 19th – 23rd August 2002

Tdoc R2-022416

<table>
<tr><td colspan="2" align="right">CR-Form-v5</td></tr>
<tr><td colspan="2" align="center"><h2>CHANGE REQUEST</h2></td></tr>
</table>

⌘   **25.331** CR **1574**   ⌘**rev** **1** ⌘   Current version: **4.5.0** ⌘

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

Proposed change affects: ⌘   (U)SIM ☐   ME/UE **X**   Radio Access Network **X**   Core Network ☐

Title: ⌘	Correction of SFN-SFN Measurement	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ June 16, 2002
Category: ⌘	**A**	***Release:*** ⌘ Rel-4

Use <u>one</u> of the following categories:
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Section 11.3: "Dummy" introduced in ASN.1

14.1.6: "SFN-SFN observed time difference" deleted as report quantity in intra-frequency measurements.

14.2.0c: "SFN-SFN observed time difference" deleted as report quantity in intra-frequency |

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Unused ASN.1 type ReferenceSFN is removed.

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Impacted functionality: Intra- and Inter-frequency measurement reporting

Clarification:
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No impact on UE, since functionality is removed.

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Isolated impact: the impact is isolated; only the corrected functionality is affected

Consequences if not approved:	⌘	Since UE behaviour is not specified, UTRAN can anyway not utilise the SFN-SFN observed time difference measurement in Intra-and Inter-frequency measurements. Incomplete requirements on UE behaviour will remain in specifications.

Clauses affected:	⌘	8.6.7.7, 10.3.7.3, 10.3.7.5, 11.3		
Other specs affected:	⌘	**X** Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	TS 25.215
Other comments:	⌘			

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The UE shall include measured results in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities", except for the following cases:

If the IE "Cell Identity" is set to TRUE, the UE shall in this version of the specification:

1> treat the IE as if the IE "Cell Identity" is set to FALSE.

If the IE "Cell synchronisation information reporting indicator" is set to TRUE, the UE shall:

1> include the IE "Cell synchronisation information" in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities":

    2> if the measurement is performed on another frequency; or

    2> if the IE "Read SFN indicator" included in the IE "Cell info" of the measured cell is set to FALSE:

        3> the UE may omit the information group "COUNT-C-SFN frame difference" in the IE "Cell synchronisation information".

    2> if the measurement is performed on the same frequency and no RLC Transparent Mode COUNT-C exists in the UE:

        3> set the IE "COUNT-C-SFN high" to 0.

    2> otherwise:

        3> include the information group "COUNT-C-SFN frame difference" with IE "COUNT-C-SFN high" set to:

        COUNT-C-SFN high = (((SFN - (COUNT-C mod 4096)) mod 4096) div 256) * 256;

        3> if RLC Transparent Mode COUNT-Cs exist in both CN domains:

            4> use the COUNT-C of CS domain in this measurement.

If the IE "Proposed TGSN Reporting required" is set to TRUE, the UE shall:

1> if compressed mode was used to monitor a TDD cell and the variable TGSN_REPORTED is set to FALSE:

    2> report the IE "Proposed TGSN" indicating the TGSN that suits best to the measured cell;

    2> set the variable TGSN_REPORTED to TRUE.

1> otherwise

    2> omit the IE "Proposed TGSN".

~~If the IE "SFN-SFN observed time difference reporting indicator" is set to "type 1" and the IE "Read SFN indicator" included in the IE "Cell info" of the measured cell is set to FALSE, the UE shall:~~

    ~~1> set the SFN-SFN observed time difference type 1 for that cell to a value in the range (0..38399) (i.e. the UE shall assume that the SFN of the measured cell differs less than a frame with respect to the reference cell).~~

10.3.7.3 Cell measured results

Includes non-frequency related measured results for a cell.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell Identity	OP		Cell Identity 10.3.2.2	
~~SFN-SFN observed time difference~~	~~OP~~		~~SFN-SFN observed time difference 10.3.7.63~~	
Cell synchronisation information	OP		Cell synchronisation information 10.3.7.6	
CHOICE *mode*	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>CPICH Ec/N0	OP		Integer(0..49)	According to CPICH_Ec/No in [19] and [20]. Fourteen spare values are needed.
>>CPICH RSCP	OP		Integer(0..91)	According to CPICH_RSCP in [19] and [20]. Thirty-six spare values are needed.
>>Pathloss	OP		Integer(46..158)	In dB. Fifteen spare values are needed.
>TDD				
>>Cell parameters Id	MP		Cell parameters Id 10.3.6.9	
>>Proposed TGSN	OP		Integer (0..14)	Proposal for the next TGSN
>>Primary CCPCH RSCP	OP		Primary CCPCH RSCP info 10.3.7.54	
>>Pathloss	OP		Integer(46..158)	In dB. Fifteen spare values are needed.
>>Timeslot list	OP	1 to < maxTS>		
>>>Timeslot ISCP	MP		Timeslot ISCP Info 10.3.7.65	The UE shall report the Timeslot ISCP in the same order as indicated in the cell info

10.3.7.5   Cell reporting quantities

Includes non-frequency related cell reporting quantities.

For all boolean types TRUE means inclusion in the report is requested.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
~~SFN-SFN observed time difference reporting indicator~~	~~MP~~		~~Enumerated(No report, type 1, type 2)~~	
Cell synchronisation information reporting indicator	MP		Boolean	
Cell Identity reporting indicator	MP		Boolean	
CHOICE *mode*	MP			
>FDD				
>>CPICH Ec/N0 reporting indicator	MP		Boolean	
>>CPICH RSCP reporting indicator	MP		Boolean	
>>Pathloss reporting indicator	MP		Boolean	
>TDD				
>>Timeslot ISCP reporting indicator	MP		Boolean	
>>Proposed TGSN Reporting required	MP		Boolean	
>>Primary CCPCH RSCP reporting indicator	MP		Boolean	
>>Pathloss reporting indicator	MP		Boolean	

11.3   Information element definitions

```
:
CellMeasuredResults ::=                 SEQUENCE {
    cellIdentity                        CellIdentity                    OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    sfn-SFN-ObsTimeDifferencedummy      SFN-SFN-ObsTimeDifference       OPTIONAL,
    cellSynchronisationInfo     CellSynchronisationInfo         OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                             SEQUENCE {
            primaryCPICH-Info               PrimaryCPICH-Info,
            cpich-Ec-N0                     CPICH-Ec-N0                 OPTIONAL,
            cpich-RSCP                      CPICH-RSCP                  OPTIONAL,
            pathloss                        Pathloss                    OPTIONAL
        },
        tdd                             SEQUENCE {
            cellParametersID                CellParametersID,
            proposedTGSN                    TGSN                        OPTIONAL,
            primaryCCPCH-RSCP               PrimaryCCPCH-RSCP           OPTIONAL,
            pathloss                        Pathloss                    OPTIONAL,
            timeslotISCP-List               TimeslotISCP-List           OPTIONAL
        }
    }
}
```

```
CellReportingQuantities ::=           SEQUENCE {
    -- dummy is not used in this version of the specification, it should
    -- be ignored by the receiver
    sfn-SFN-OTD-Typedummy                   SFN-SFN-OTD-Type,
    cellIdentity-reportingIndicator                 BOOLEAN,
    cellSynchronisationInfoReportingIndicator       BOOLEAN,
    modeSpecificInfo                   CHOICE {
        fdd                            SEQUENCE {
            cpich-Ec-N0-reportingIndicator                  BOOLEAN,
            cpich-RSCP-reportingIndicator                   BOOLEAN,
            pathloss-reportingIndicator                 BOOLEAN
        },
        tdd                            SEQUENCE {
            timeslotISCP-reportingIndicator             BOOLEAN,
            proposedTGSN-ReportingRequired              BOOLEAN,
            primaryCCPCH-RSCP-reportingIndicator            BOOLEAN,
            pathloss-reportingIndicator                 BOOLEAN
        }
    }
}


……..

ReferenceSFN ::=                        INTEGER (0..4095)
```

3GPP TSG-RAN WG2 Meeting #31
Arlanda, Sweden, 19ᵗʰ – 23ʳᵈ August 2002

Tdoc R2-022417

CR-Form-v5

CHANGE REQUEST

⌘ **25.331** CR **1575** ⌘**rev** **1** ⌘ Current version: **5.1.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Correction of SFN-SFN Measurement
Source: ⌘	TSG-RAN WG2
Work item code: ⌘ TEI	***Date:*** ⌘ June 16, 2002

Category: ⌘ **A**

Use <u>one</u> of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Release: ⌘ Rel-5

Use <u>one</u> of the following releases:
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R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
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REL-5 (Release 5)

Reason for change: ⌘ Currently, TS 25.331 states that UE shall report "SFN-SFN observed time difference" measurement in message MEASUREMENT REPORT for Intra- and Inter-frequency measurements, in case this has been requested by UTRAN (by setting IE "SFN-SFN observed time difference reporting indicator" to TRUE in a MEASUREMENT CONTROL message)

However, TS 25.331 does not specify the details for this reporting. Specification of 'reference cell' for the measurement is missing. Especially, when the Active Set contains more than one cell, this opens up for different interpretations, resulting in different UE implementations.
It should be noted that this is not a problem for "SFN-SFN observed time difference" measurement (Type 2)" as defined for UP Measurements.

Furthermore, from a functional point of view, UE report of "SFN-SFN observed time difference" measurement in Intra-and Inter-frequency measurement report is not needed. In state Cell_DCH, "SFN-CFN observed time difference" measurement reporting serves the purpose for UE-UTRAN radio link synchronisation at handover. Therefore, it is proposed to remove SFN-SFN observed time difference from Intra- and Inter-frequency measurements.

Summary of change: ⌘ Section 8.6.7.7: Text on "SFN-SFN observed time difference" measurement has been deleted

Section 10.3.7.3: IE "SFN-SFN observed time difference" deleted

Section 10.3.7.5: IE "SFN-SFN observed time difference reporting indicator" deleted.

Section 11.3: "Dummy" introduced in ASN.1

14.1.6: "SFN-SFN observed time difference" deleted as report quantity in intra-frequency measurements.

14.2.0c: "SFN-SFN observed time difference" deleted as report quantity in intra-frequency

---

measurements.

Unused ASN.1 type ReferenceSFN is removed.

Impact analysis:

Impacted functionality: Intra- and Inter-frequency measurement reporting

Clarification:
Removal of functionality that is currently not specified.

No impact on UE, since functionality is removed.

No impact to the UTRAN since the UTRAN cannot currently assume a specific UE behaviour for SFN-SFN observed time difference measurement reporting in intra-and- inter-frequency measurements.

Interoperability:

Isolated impact: the impact is isolated; only the corrected functionality is affected

Consequences if not approved:	⌘	Since UE behaviour is not specified, UTRAN can anyway not utilise the SFN-SFN observed time difference measurement in Intra-and Inter-frequency measurements. Incomplete requirements on UE behaviour will remain in specifications.

Clauses affected:	⌘	8.6.7.7, 10.3.7.3, 10.3.7.5, 11.3		
Other specs affected:	⌘	**X** Other core specifications	⌘	TS 25.215
		Test specifications		
		O&M Specifications		
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/3G_Specs/CRs.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 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

8.6.7.7 Cell Reporting Quantities

If the IE "Cell Reporting Quantities" is received by the UE, the UE shall store the content of the IE "Cell Reporting Quantities" to the variable MEASUREMENT_IDENTITY.

The UE shall include measured results in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities", except for the following cases:

If the IE "Cell Identity" is set to TRUE, the UE shall in this version of the specification:

 1> treat the IE as if the IE "Cell Identity" is set to FALSE.

If the IE "Cell synchronisation information reporting indicator" is set to TRUE, the UE shall:

 1> include the IE "Cell synchronisation information" in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities":

  2> if the measurement is performed on another frequency; or

  2> if the IE "Read SFN indicator" included in the IE "Cell info" of the measured cell is set to FALSE:

   3> the UE may omit the information group "COUNT-C-SFN frame difference" in the IE "Cell synchronisation information".

  2> if the measurement is performed on the same frequency and no RLC Transparent Mode COUNT-C exists in the UE:

   3> set the IE "COUNT-C-SFN high" to 0.

  2> otherwise:

   3> include the information group "COUNT-C-SFN frame difference" with IE "COUNT-C-SFN high" set to:

    COUNT-C-SFN high = (((SFN - (COUNT-C mod 4096)) mod 4096) div 256) * 256;

   3> if RLC Transparent Mode COUNT-Cs exist in both CN domains:

    4> use the COUNT-C of CS domain in this measurement.

If the IE "Proposed TGSN Reporting required" is set to TRUE, the UE shall:

 1> if compressed mode was used to monitor a TDD cell and the variable TGSN_REPORTED is set to FALSE:

  2> report the IE "Proposed TGSN" indicating the TGSN that suits best to the measured cell;

  2> set the variable TGSN_REPORTED to TRUE.

 1> otherwise

  2> omit the IE "Proposed TGSN".

~~If the IE "SFN-SFN observed time difference reporting indicator" is set to "type 1" and the IE "Read SFN indicator" included in the IE "Cell info" of the measured cell is set to FALSE, the UE shall:~~

 ~~1> set the SFN-SFN observed time difference type 1 for that cell to a value in the range (0..38399) (i.e. the UE shall assume that the SFN of the measured cell differs less than a frame with respect to the reference cell).~~

10.3.7.3   Cell measured results

Includes non-frequency related measured results for a cell.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell Identity	OP		Cell Identity 10.3.2.2	
~~SFN-SFN observed time difference~~	~~OP~~		~~SFN-SFN observed time difference 10.3.7.63~~	
Cell synchronisation information	OP		Cell synchronisation information 10.3.7.6	
CHOICE *mode*	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
>>CPICH Ec/N0	OP		Integer(0..49)	According to CPICH_Ec/No in [19] and [20]. Fourteen spare values are needed.
>>CPICH RSCP	OP		Integer(0..91)	According to CPICH_RSCP in [19] and [20]. Thirty-six spare values are needed.
>>Pathloss	OP		Integer(46..158)	In dB. Fifteen spare values are needed.
>TDD				
>>Cell parameters Id	MP		Cell parameters Id 10.3.6.9	
>>Proposed TGSN	OP		Integer (0..14)	Proposal for the next TGSN
>>Primary CCPCH RSCP	OP		Primary CCPCH RSCP info 10.3.7.54	
>>Pathloss	OP		Integer(46..158)	In dB. Fifteen spare values are needed.
>>Timeslot list	OP	1 to < maxTS>		
>>>Timeslot ISCP	MP		Timeslot ISCP Info 10.3.7.65	The UE shall report the Timeslot ISCP in the same order as indicated in the cell info

10.3.7.5   Cell reporting quantities

Includes non-frequency related cell reporting quantities.

For all boolean types TRUE means inclusion in the report is requested.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
~~SFN-SFN observed time difference reporting indicator~~	~~MP~~		~~Enumerated(No report, type 1, type 2)~~	
Cell synchronisation information reporting indicator	MP		Boolean	
Cell Identity reporting indicator	MP		Boolean	
CHOICE *mode*	MP			
>FDD				
>>CPICH Ec/N0 reporting indicator	MP		Boolean	
>>CPICH RSCP reporting indicator	MP		Boolean	
>>Pathloss reporting indicator	MP		Boolean	
>TDD				
>>Timeslot ISCP reporting indicator	MP		Boolean	
>>Proposed TGSN Reporting required	MP		Boolean	
>>Primary CCPCH RSCP reporting indicator	MP		Boolean	
>>Pathloss reporting indicator	MP		Boolean	

11.3   Information element definitions

```
:
CellMeasuredResults ::=                   SEQUENCE {
    cellIdentity                          CellIdentity                        OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    sfn-SFN-ObsTimeDifferencedummy        SFN-SFN-ObsTimeDifference           OPTIONAL,
    cellSynchronisationInfo       CellSynchronisationInfo          OPTIONAL,
    modeSpecificInfo                      CHOICE {
        fdd                                   SEQUENCE {
            primaryCPICH-Info                     PrimaryCPICH-Info,
            cpich-Ec-N0                           CPICH-Ec-N0               OPTIONAL,
            cpich-RSCP                            CPICH-RSCP                OPTIONAL,
            pathloss                              Pathloss                  OPTIONAL
        },
        tdd                                   SEQUENCE {
            cellParametersID                      CellParametersID,
            proposedTGSN                          TGSN                      OPTIONAL,
            primaryCCPCH-RSCP                     PrimaryCCPCH-RSCP         OPTIONAL,
            pathloss                              Pathloss                  OPTIONAL,
            timeslotISCP-List                     TimeslotISCP-List         OPTIONAL
        }
    }
}
```

```
CellReportingQuantities ::=          SEQUENCE {
    -- dummy is not used in this version of the specification, it should
    -- be ignored by the receiver
    sfn-SFN-OTD-Typedummy                 SFN-SFN-OTD-Type,
    cellIdentity-reportingIndicator                   BOOLEAN,
    cellSynchronisationInfoReportingIndicator         BOOLEAN,
    modeSpecificInfo                 CHOICE {
        fdd                          SEQUENCE {
            cpich-Ec-N0-reportingIndicator                   BOOLEAN,
            cpich-RSCP-reportingIndicator                    BOOLEAN,
            pathloss-reportingIndicator              BOOLEAN
        },
        tdd                          SEQUENCE {
            timeslotISCP-reportingIndicator          BOOLEAN,
            proposedTGSN-ReportingRequired           BOOLEAN,
            primaryCCPCH-RSCP-reportingIndicator             BOOLEAN,
            pathloss-reportingIndicator              BOOLEAN
        }
    }
}

……..

ReferenceSFN ::=                      INTEGER (0..4095)
```