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Agenda item:	AH 16
Source:	Ericsson
Title:	Text proposal for section 7 in TS 25.215
Document for:	Approval

1 Introduction

The aim of this contribution is to cleanup some inconsistencies and unnecessary information in section 7 of 25.215.

The following changes are proposed:

- Move the contents of section 7.3 to an informative annex named "Annex 1: Measurements for Handover (Informative)"
  A liaison from WG2 has been received (R2-99d07) stating that WG2 would like to move the compressed mode patterns into TR 25.922. There are still some issues to consider regarding some explicit timing measurements in section 7.3 that has to be cleared with WG2 before the section can be removed. Therefore it is proposed to move the section to an informative annex.

- A new section named "7.1.2.3 TGL parametrisation limitations" is defined. The purpose of this section is to set the values that the TGL parameter can take when monitoring inter-frequency FDD cells, TDD cells and GSM cells.

- Removal of empty sections 7.1.4 and section 7.2.

Text proposals for the changes can be found in section 2.

2 Text Proposal for TS 25.215

7 Measurements for UTRA FDD

7.1 UE measurements

7.1.1 Overview of the different cell sets

7.1.2 Compressed mode

7.1.2.1 Use of compressed mode/dual receiver for monitoring

7.1.2.2 Parameterisation of the compressed mode

7.1.2.3 Parametrisation limitations

In the table below the allowed values for the TGL parameter is shown.

Measurements performed on	Allowed TGL values
FDD inter-frequency cell	7, 14
TDD cell	TBD.
GSM cell	3, 4, 7, 10, 14

Compressed mode patterns for handover monitoring are recommended in "Annex 1: Measurements for Handover (Informative)".

7.1.3 Measurements for Handover

7.1.3.1 Monitoring of FDD cells on the same frequency

During the measurement process of cells on the same frequencies, the UE shall find the necessary synchronisation to the cells to measure using the primary and secondary synchronisation channels and also the knowledge of the possible scrambling codes in use by the neighbouring cells.

7.1.3.2 Monitoring cells on different frequencies

7.1.3.2.1 Monitoring of FDD cells on a different frequency

Upper layers may ask FDD UE to perform preparation of inter-frequency handover to FDD. In such case, the UTRAN signals to the UE the handover monitoring set, and if needed, the compressed mode parameters used to make the needed measurements. Setting of the compressed mode parameters defined in section 7.1.2.2 for the preparation of handover from UTRA FDD to UTRA FDD is indicated in the following section. The compressed mode for IFHO preparation from UTRA FDD to UTRA FDD has two different modes. One is "selection mode". The UE must identify the cell during this mode. The other is "reselection mode". The UE measures signal strength by the scrambling code already known. Selection mode / reselection mode parameter sets are described in section 7.1.3.2.1.1 / 7.1.3.2.1.2 respectively.

Measurements to be performed by the physical layer is defined in section 6.

7.1.3.2.1.1 Setting of the compressed mode parameters for selection mode

During the transmission gaps, the UE shall perform measurements so as to be able to report to the UTRAN the frame timing, the scrambling code and the Ec/Io of Primary CCPCH of up to the [x] FDD cells in the handover monitoring set.

<Editor's note : the sentence before is inconsistent with the following section. This inconsistency needs to be solved>

When compressed mode is used for cell acquisition at each target FDD frequency, the parameters of compressed mode pattern are fixed to be :

	TGL	TGD	TGP1	TGP2	PD
Pattern1	7	24/15	4	20	M
Pattern2	7	24/15	4	140	M
Pattern3	7	2	4	Not Used	M
Pattern4	7	2	4	20	M
Pattern5	7	2	4	140	M
Pattern6	14	3	6	18	M
Pattern7	14	3	6	138	M

 <Note1: Frame method and transmission gap position of each pattern will be proposed in R1-99b99>

 <Note2: The frequency switching time required for UE is assumed to be 666us (equal to the slot duration) which includes implementation margin. This assumption means UE will consume 1slot of TGL for frequency switching (go and return) time.>

7.1.3.2.1.2 Setting of the compressed mode parameters for reselection mode

This parameter sets are used for UE which has already known scrambling code. UTRAN indicate which pattern will be used by UE.. According to the result during reselection mode, If needed, UTRAN will indicate the transition back to the selection mode.

	TGL	TGD	TGP1	TGP2	PD
Pattern8	7	0	72	Not Used	M
Pattern9	7	0	144	Not Used	M

7.1.3.2.2 Monitoring of TDD cells

<Editors note: This section should describes particular rules to set the compressed mode parameters when monitoring TDD cell, both for the downlink and uplink compressed mode depending on the handover monitoring set, as well as provide some descriptive text on the monitoring process itself.>

Upper layers may ask dual mode FDD/TDD UE to perform preparation of inter-frequency handover to TDD. In such

case, the UTRAN signals to the UE the handover monitoring set, and if needed, the compressed mode parameters used to make the needed measurements. Setting of the compressed mode parameters defined in 7.1.2.2 for the preparation of handover from UTRA FDD to UTRA TDD is indicated in the following section. Measurements to be performed by the physical layer are defined in section 6.

7.1.3.2.2.1 Setting of the compressed mode parameters

When compressed mode is used for cell acquisition at each target TDD frequency, the parameters of compressed mode pattern are fixed to be:

TGL	TGD	TGP	PD

7.1.3.2.2.2 Setting of compressed mode parameters with prior timing information between FDD serving cell and TDD target cells

UTRAN or UE may have some prior knowledge of the frame timing difference between some FDD cells in UE's active set and some TDD cells in the handover monitoring set. When this information is acquired by the UE (e.g. after initial SCH detection) and on upper layer's command, the UE shall report it to the upper layers for verification of UTRAN's information, and feedback of this information from UTRAN to the other UE.

In this case with prior timing information the compressed mode parameters in chapter 7.1.2.2. are set in a way that takes into account the frame timing difference and the slot number of the PCCPCH in the target TDD cell. The position of the transmission gap allows directly the monitoring of the TDD cell's timeslot that contains the PCCPCH.

7.1.3.2.3 Monitoring of GSM cells

Upper layers may ask dual mode FDD/GSM UE to perform preparation of inter-frequency handover to GSM. In such case, the UTRAN signals to the UE the handover monitoring set, and if needed, the compressed mode parameters used to make the needed measurements.

The UE shall perform measurements so as to be able to report every [x msec] to the UTRAN the BSIC and the signal strength of up to [y] GSM cells in the handover monitoring set.

The involved measurements are GSM BCCH power measurements (Section 7.1.3.2.3.1), initial GSM SCH or FCCH acquisition (Section 7.1.3.2.3.2), acquisition/tracking of GSM SCH or FCCH when timing information between UTRA serving cells and the target GSM cell is available (Section 7.1.3.2.3.3), and BSIC reconfirmation (Section 7.1.3.2.3.4).

<Editor's note : requirements for the monitoring are for descriptive purposes to illustrate how to set the compressed mode parameters. Such requirements should be found in the WG4 documentation>

7.1.3.2.3.1 Setting of compressed mode parameters for Power measurements

When compressed mode is used for GSM BCCH power measurements, the parameters of compressed mode pattern are fixed to be :

Pattern No.	TGL	TGD	TGP	PD
1	3	0	8	128
2	tbd	tbd	tbd	tbd
3	tbd	tbd	tbd	tbd
4	tbd	tbd	tbd	tbd

Pattern 1 allows measuring all the adjacent cell signal levels even with the maximum of 32 frequencies, if two measurements are done during each transmission gap. The pattern can be repeated by sending the measurement request again, if more measurement data is desired.

< NOTE: Further compressed mode patterns with more and/or longer gaps for making more measurements will be introduced soon. >

In order to fulfil the expected GSM power measurements requirement, the UE can get effective measurements samples during a time window of length Tmeas, equal to the transmission gap length reduced by an implementation margin of [2*500 µs + 200 µs], which includes the maximum allowed delay for a UE's synthesizer to switch from one FDD frequency to one GSM frequency and switch back to FDD frequency, plus some additional implementation margin.

7.1.3.2.3.2 Setting of compressed mode parameters for first SCH decoding without prior knowledge of timing information

The setting of the compressed mode parameters is described in this section when used for first SCH decoding of one cell when there is no knowledge about the relative timing between the current FDD cells and the neighbouring GSM cell.

On upper layers command, UE shall pre-synchronise to the each of GSM cells in the handover monitoring set and decode their BSIC. < *Note : the proper reference to GSM specs should be added here* >

When compressed mode is used to perform initial FCCH/SCH acquisition, the compressed mode pattern belongs to the list of patterns in table .

In order to fulfill the expected GSM SCH speed requirement, the UE can get effective measurements samples during a time window of length Tmeas, equal to the transmission gap length reduced by an implementation margin of [2*500 µs + 200 µs], that includes the maximum allowed delay for a UE's synthesizer to switch from one FDD frequency to one GSM frequency and switch back to FDD frequency, plus some additional implementation margin.

	TGL	TGD	TGP	PD parallel search / serial search
Pattern 1	7	0	2	40/64
Pattern 2	7	0	3	39/63
Pattern 3	7	2	9	63/252
Pattern 4	7	3	12	99/123
Pattern 5	14	0	2	12/26
Pattern 6	14	2	6	24/48
Pattern 7	14	2	8	34/58
Pattern 8	14	2	12	60/84
Pattern 9	10	12	48	108/828
Pattern 10	10	0	48	240/1440

Table . List of compressed mode patterns used for initial GSM FCCH/SCH acquisition without timing information

The pattern duration for the parallel search (time until a GSM FCCH or SCH burst is found) and for the serial search (time until a FCCH burst is found) is given.

The patterns 5…8 should mainly be used in such cases where the present signal level suddenly drops and very little time to execute the handover is available. Patterns 1…4 are significantly more optimal from the point of view of the transmission power control than the other ones, while patterns 5…8 consume less slots for the measurements on the average.

Patterns 1…4 may use any pattern described in specification 25.212 chapter 4.4.3.1. Patterns 5…10 must use the double frame method.

The patterns 9 and 10 are optimised for least consumption of slots for the measurements on the average using the parallel search. The patterns 9 and 10 achieve about the same or half the speed of the synchronisation to GSM from

GSM. They must use the double frame method, the compression can be achieved by changing the coding rate from 1/3 to 1/2.

Each pattern corresponds to a different compromise between speed of GSM SCH search and rate of use of compressed frames. On upper layers command, the repetition of the selected pattern can be stopped and/or replaced by one of the other listed patterns. Upper layers may also decide to alternate the use of different patterns periods.

Depending on the UE's capabilities, the search procedure may be sequential (tracking of FCCH burst before decoding of the first SCH) or parallel (parallel tracking of FCCH and SCH bursts). The latter solution achieves SCH decoding faster than the first one, thus decreasing the needed number of repeated patterns.

Once the UE has completed the search it signals the UTRAN with FCCH found or SCH found, both with the timing of the associated SCH burst, or with FCCH/SCH not found (see < *Editor's note : reference to be inserted here* >).

In case of FCCH found, the UTRAN can continue the current pattern until also SCH is found or stop it and schedule a single, properly aligned gap for SCH search as described in 7.1.3.2.3.3.

Whenever UE receives a new neighbour cell with a sufficiently high power level (see < *Editor's note : reference to be inserted here* >), it shall perform a new SCH search procedure.

When a compressed mode pattern is available, then it is up to the UE to trigger this search procedure with the available transmission gaps. In this case, no specific signalling is needed between the UE and the UTRAN.

When a compressed mode pattern is not available, the UE shall initiate the search procedure by sending a "request new cell search" message to the UTRAN. Based on the UE's capabilities for serial or parallel search as described above, the UTRAN then determines a suitable compressed mode pattern and signals this to the UE. The upper layers can delay the onset of this pattern depending on the timing priority the Network Operator has set for new BSIC identification.

7.1.3.2.3.3 Setting of compressed mode parameters for first SCH decoding with prior timing information between UTRAN serving cells and GSM target cells

UTRAN or UE may have some prior knowledge of timing difference between some FDD cells in UE's active set and some GSM cells in the handover monitoring set. When this information is acquired by the UE (e.g. after initial FCCH/SCH detection) and on upper layers command, the UE shall report it to the upper layers for verification of UTRAN's information, and feedback of this information from UTRAN to the other UE.

When UTRAN or UE have this prior timing information, the compressed mode shall be scheduled by upper layers with the intention that SCH (or FCCH if needed) on a specific GSM band can be decoded at the UE during the transmission gap.

The transmission gap parameters used for GSM FCCH/SCH tracking with prior timing information are :

TGL	SFN	SN
4	(calculated by UTRAN)	(calculated by UTRAN)

In addition to normal compressed mode parameters, UTRAN signals the following information to the UE :

- The GSM carrier for which the particular compressed frame is intended (BS ID, carrier no, etc.)

Once the UE has completed the search, it signals the UTRAN with the timing of the associated SCH burst or with SCH not found.

7.1.3.2.3.4 Setting of compressed mode parameters for SCH decoding for BSIC reconfirmation and procedure at the UE

In this paragraph it is assumed that the UE has successfully decoded one SCH burst of a given neighbouring GSM cell during the call.

When a compressed mode pattern is available, then it is up to the UE to trigger and perform the BSIC reconfirmation procedure with the available transmission gaps. In this case, no specific signalling is needed between the UE and the UTRAN for BSIC reconfirmation procedure.

When no compressed mode pattern is available then it is up to the UE to trigger and perform the BSIC reconfirmation procedure. In that case, UE indicates to the upper layers the schedule of the SCH burst of that cell, and the size of the necessary transmission gap necessary to capture one SCH burst. The Network Operator decides the target time for BSIC reconfirmation and the upper layers uses this and the schedule indicated by the UE to determine the appropriate compressed mode parameters.

The compressed mode parameters shall be one of those described in section 7.1.3.2.3.3.

7.1.3.2.3.5 Parametrisation of the compressed mode for handover preparation to GSM

Whereas section 7.1.3.2.3.2 described the compressed mode parametrisation for the initial synchronisation tracking or reconfirmation for one cell and the compressed mode parameters for power measurement for one of multiple cells, there is a need to define the global compressed mode parameters when considering the monitoring of all GSM cells.

<Editor's note : the overall description for the handover to GSM preparation is still missing>

7.1.3.3 Overall handover preparation at the UE

This section should explain how the inter-frequency handover preparation from UTRA FDD to UTRA (either FDD or TDD) and from UTRA to GSM are co-ordinated in terms of measurement and reporting at the UE. Whereas Section 7.1.3.2.1, 7.1.3.2.2, and 7.1.3.2.3 give some principle for the monitoring of a given cell type and requirement in e.g. the dimensioning of the slotted mode, this section provides the overall requirement and measurement procedure.

7.1.4 Measurements for cell selection/reselection

7.2 UTRAN measurements

8 Removal of paragraphs from the original TS 25.231 v0.3.1

9 Annex 1: Measurements for Handover (Informative)

9.1 Monitoring of FDD cells on the same frequency

During the measurement process of cells on the same frequencies, the UE shall find the necessary synchronisation to the cells to measure using the primary and secondary synchronisation channels and also the knowledge of the possible scrambling codes in use by the neighbouring cells.

9.2 Monitoring cells on different frequencies

9.2.1 Monitoring of FDD cells on a different frequency

Upper layers may ask FDD UE to perform preparation of inter-frequency handover to FDD. In such case, the UTRAN signals to the UE the handover monitoring set, and if needed, the compressed mode parameters used to make the needed measurements. Setting of the compressed mode parameters defined in section 7.1.2.2 for the preparation of handover from UTRA FDD to UTRA FDD is indicated in the following section. The compressed mode for IFHO preparation from UTRA-FDD to UTRA-FDD has two different modes. One is "selection-mode". The UE must identify the cell during this mode. The other is "reselection-mode". The UE measures signal strength by the scrambling code already known. Selection mode / reselection mode parameter sets are described in section 7.1.3.2.1.1 / 7.1.3.2.1.2 respectively.

Measurements to be performed by the physical layer is defined in section 6.

9.2.1.1 Setting of the compressed mode parameters for selection mode

During the transmission gaps, the UE shall perform measurements so as to be able to report to the UTRAN the frame timing, the scrambling code and the Ec/Io of Primary CCPCH of up to the [x] FDD cells in the handover monitoring set.

<Editor's note : the sentence before is inconsistent with the following section. This inconsistency needs to be solved>

When compressed mode is used for cell acquisition at each target FDD frequency, the parameters of compressed mode pattern are fixed to be :

	TGL	TGD	TGP1	TGP2	PD
Pattern1	7	24/15	4	20	M
Pattern2	7	24/15	4	140	M
Pattern3	7	2	4	Not Used	M
Pattern4	7	2	4	20	M
Pattern5	7	2	4	140	M
Pattern6	14	3	6	18	M
Pattern7	14	3	6	138	M

<Note1: Frame method and transmission gap position of each pattern will be proposed in R1-99b99>

<Note2: The frequency switching time required for UE is assumed to be 666us (equal to the slot duration) which includes implementation margin. This assumption means UE will consume 1slot of TGL for frequency switching (go and return) time.>

9.2.1.2 Setting of the compressed mode parameters for reselection mode

This parameter sets are used for UE which has already known scrambling code. UTRAN indicate which pattern will be used by UE.. According to the result during reselection mode, If needed, UTRAN will indicate the transition back to the selection mode.

	TGL	TGD	TGP1	TGP2	PD
Pattern8	7	0	72	Not Used	M
Pattern9	7	0	144	Not Used	M

9.2.2 Monitoring of TDD cells

<Editors note: This section should describes particular rules to set the compressed mode parameters when monitoring TDD cell, both for the downlink and uplink compressed mode depending on the handover monitoring set, as well as provide some descriptive text on the monitoring process itself.>

Upper layers may ask dual mode FDD/TDD UE to perform preparation of inter-frequency handover to TDD. In such case, the UTRAN signals to the UE the handover monitoring set, and if needed, the compressed mode parameters used to make the needed measurements. Setting of the compressed mode parameters defined in 7.1.2.2 for the preparation of handover from UTRA FDD to UTRA TDD is indicated in the following section. Measurements to be performed by the physical layer are defined in section 6.

9.2.2.1 Setting of the compressed mode parameters

When compressed mode is used for cell acquisition at each target TDD frequency, the parameters of compressed mode pattern are fixed to be:

TGL	TGD	TGP	PD

9.2.2.2 Setting of compressed mode parameters with prior timing information between FDD serving cell and TDD target cells

UTRAN or UE may have some prior knowledge of the frame timing difference between some FDD cells in UE's active set and some TDD cells in the handover monitoring set. When this information is acquired by the UE (e.g. after initial SCH detection) and on upper layer's command, the UE shall report it to the upper layers for verification of UTRAN's information, and feedback of this information from UTRAN to the other UE.

In this case with prior timing information the compressed mode parameters in chapter 7.1.2.2. are set in a way that takes into account the frame timing difference and the slot number of the PCCPCH in the target TDD cell. The position of the transmission gap allows directly the monitoring of the TDD cell's timeslot that contains the PCCPCH.

9.2.3 Monitoring of GSM cells

Upper layers may ask dual mode FDD/GSM UE to perform preparation of inter-frequency handover to GSM. In such case, the UTRAN signals to the UE the handover monitoring set, and if needed, the compressed mode parameters used to make the needed measurements.

The UE shall perform measurements so as to be able to report every [x msec] to the UTRAN the BSIC and the signal strength of up to [y] GSM cells in the handover monitoring set.

The involved measurements are GSM BCCH power measurements (Section 7.1.3.2.3.1), initial GSM SCH or FCCH acquisition (Section 7.1.3.2.3.2), acquisition/tracking of GSM SCH or FCCH when timing information between UTRA serving cells and the target GSM cell is available (Section 7.1.3.2.3.3), and BSIC reconfirmation (Section 7.1.3.2.3.4).

<Editor's note : requirements for the monitoring are for descriptive purposes to illustrate how to set the compressed mode parameters. Such requirements should be found in the WG4 documentation>

9.2.3.1 Setting of compressed mode parameters for Power measurements

When compressed mode is used for GSM BCCH power measurements, the parameters of compressed mode pattern are fixed to be :

Pattern No.	TGL	TGD	TGP	PD
1	3	0	8	128
2	tbd	tbd	tbd	tbd
3	tbd	tbd	tbd	tbd
4	tbd	tbd	tbd	tbd

Pattern 1 allows measuring all the adjacent cell signal levels even with the maximum of 32 frequencies, if two measurements are done during each transmission gap. The pattern can be repeated by sending the measurement request again, if more measurement data is desired.

< NOTE: Further compressed mode patterns with more and/or longer gaps for making more measurements will be introduced soon. >

In order to fulfil the expected GSM power measurements requirement, the UE can get effective measurements samples during a time window of length Tmeas, equal to the transmission gap length reduced by an implementation margin of [2*500 µs + 200 µs], which includes the maximum allowed delay for a UE's synthesizer to switch from one FDD frequency to one GSM frequency and switch back to FDD frequency, plus some additional implementation margin.

9.2.3.2 Setting of compressed mode parameters for first SCH decoding without prior knowledge of timing information

The setting of the compressed mode parameters is described in this section when used for first SCH decoding of one cell when there is no knowledge about the relative timing between the current FDD cells and the neighbouring GSM cell.

On upper layers command, UE shall pre-synchronise to the each of GSM cells in the handover monitoring set and decode their BSIC. < *Note : the proper reference to GSM specs should be added here* >

When compressed mode is used to perform initial FCCH/SCH acquisition, the compressed mode pattern belongs to the list of patterns in table .

In order to fulfill the expected GSM SCH speed requirement, the UE can get effective measurements samples during a time window of length Tmeas, equal to the transmission gap length reduced by an implementation margin of [2*500 µs + 200 µs], that includes the maximum allowed delay for a UE's synthesizer to switch from one FDD frequency to one GSM frequency and switch back to FDD frequency, plus some additional implementation margin.

	TGL	TGD	TGP	PD parallel search / serial search
Pattern 1	7	0	2	40/64
Pattern 2	7	0	3	39/63
Pattern 3	7	2	9	63/252
Pattern 4	7	3	12	99/123
Pattern 5	14	0	2	12/26
Pattern 6	14	2	6	24/48
Pattern 7	14	2	8	34/58
Pattern 8	14	2	12	60/84
Pattern 9	10	12	48	108/828
Pattern 10	10	0	48	240/1440

Table .- List of compressed mode patterns used for initial GSM FCCH/SCH acquisition without timing information

The pattern duration for the parallel search (time until a GSM FCCH or SCH burst is found) and for the serial search (time until a FCCH burst is found) is given.

The patterns 5…8 should mainly be used in such cases where the present signal level suddenly drops and very little time to execute the handover is available. Patterns 1…4 are significantly more optimal from the point of view of the transmission power control than the other ones, while patterns 5…8 consume less slots for the measurements on the average.

Patterns 1…4 may use any pattern described in specification 25.212 chapter 4.4.3.1. Patterns 5…10 must use the double frame method.

The patterns 9 and 10 are optimised for least consumption of slots for the measurements on the average using the parallel search. The patterns 9 and 10 achieve about the same or half the speed of the synchronisation to GSM from GSM. They must use the double frame method, the compression can be achieved by changing the coding rate from 1/3 to 1/2.

Each pattern corresponds to a different compromise between speed of GSM SCH search and rate of use of compressed frames. On upper layers command, the repetition of the selected pattern can be stopped and/or replaced by one of the other listed patterns. Upper layers may also decide to alternate the use of different patterns periods.

Depending on the UE's capabilities, the search procedure may be sequential (tracking of FCCH burst before decoding of the first SCH) or parallel (parallel tracking of FCCH and SCH bursts). The latter solution achieves SCH decoding faster than the first one, thus decreasing the needed number of repeated patterns.

Once the UE has completed the search it signals the UTRAN with FCCH-found or SCH-found, both with the timing of the associated SCH burst, or with FCCH/SCH-not-found (see < *Editor's note : reference to be inserted here* >).

In case of FCCH-found, the UTRAN can continue the current pattern until also SCH is found or stop it and schedule a single, properly aligned gap for SCH search as described in 7.1.3.2.3.3.

Whenever UE receives a new neighbour cell with a sufficiently high power level (see < *Editor's note : reference to be inserted here* >), it shall perform a new SCH search procedure.

When a compressed mode pattern is available, then it is up to the UE to trigger this search procedure with the available transmission gaps. In this case, no specific signalling is needed between the UE and the UTRAN.

When a compressed mode pattern is not available, the UE shall initiate the search procedure by sending a "request new cell search" message to the UTRAN. Based on the UE's capabilities for serial or parallel search as described above, the UTRAN then determines a suitable compressed mode pattern and signals this to the UE. The upper layers can delay the onset of this pattern depending on the timing priority the Network Operator has set for new BSIC identification.

9.2.3.3   Setting of compressed mode parameters for first SCH decoding with prior timing information between UTRAN serving cells and GSM target cells

UTRAN or UE may have some prior knowledge of timing difference between some FDD cells in UE's active set and some GSM cells in the handover monitoring set. When this information is acquired by the UE (e.g. after initial FCCH/SCH detection) and on upper layers command, the UE shall report it to the upper layers for verification of UTRAN's information, and feedback of this information from UTRAN to the other UE.

When UTRAN or UE have this prior timing information, the compressed mode shall be scheduled by upper layers with the intention that SCH (or FCCH if needed) on a specific GSM band can be decoded at the UE during the transmission gap.

The transmission gap parameters used for GSM FCCH/SCH tracking with prior timing information are :

TGL	SFN	SN
4	(calculated by UTRAN)	(calculated by UTRAN)

In addition to normal compressed mode parameters, UTRAN signals the following information to the UE :

• The GSM carrier for which the particular compressed frame is intended (BS ID, carrier no, etc.)

Once the UE has completed the search, it signals the UTRAN with the timing of the associated SCH burst or with SCH-not-found.

9.2.3.4 Setting of compressed mode parameters for SCH decoding for BSIC reconfirmation and procedure at the UE

In this paragraph it is assumed that the UE has successfully decoded one SCH burst of a given neighbouring GSM cell during the call.

When a compressed mode pattern is available, then it is up to the UE to trigger and perform the BSIC reconfirmation procedure with the available transmission gaps. In this case, no specific signalling is needed between the UE and the UTRAN for BSIC reconfirmation procedure.

When no compressed mode pattern is available then it is up to the UE to trigger and perform the BSIC reconfirmation procedure. In that case, UE indicates to the upper layers the schedule of the SCH burst of that cell, and the size of the necessary transmission gap necessary to capture one SCH burst. The Network Operator decides the target time for BSIC reconfirmation and the upper layers uses this and the schedule indicated by the UE to determine the appropriate compressed mode parameters.

The compressed mode parameters shall be one of those described in section 7.1.3.2.3.3.

9.2.3.5 Parametrisation of the compressed mode for handover preparation to GSM

Whereas section 7.1.3.2.3.2 described the compressed mode parametrisation for the initial synchronisation tracking or reconfirmation for one cell and the compressed mode parameters for power measurement for one of multiple cells, there is a need to define the global compressed mode parameters when considering the monitoring of all GSM cells.

<Editor's note : the overall description for the handover to GSM preparation is still missing>

9.2.4 Overall handover preparation at the UE

This section should explain how the inter-frequency handover preparation from UTRA FDD to UTRA (either FDD or TDD) and from UTRA to GSM are co-ordinated in terms of measurement and reporting at the UE. Whereas Section 7.1.3.2.1, 7.1.3.2.2, and 7.1.3.2.3 give some principle for the monitoring of a given cell type and requirement in e.g. the dimensioning of the slotted mode, this section provides the overall requirement and measurement procedure.

10 History