CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

| **25.212** | CR | **001rv2** | Current Version: | 3.0.0 |

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   ↑ *CR number as allocated by MCC support team*

| For submission to: | RAN #6 | for approval | **X** | strategic | | *(for SMG* |
| *list expected approval meeting # here* ↑ | | for information | | non-strategic | | *use only)* |

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

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

| **Source:** | Siemens, LGIC | **Date:** | 20.11.99 |

| **Subject:** | Correction of rate matching parameters for repetition after 1st Interleaving in 25.212 |

| **Work item:** | |

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

| **Reason for change:** | For rate matching after first interleaving the formula was erroneous for high repetition rates. |

| **Clauses affected:** | 4.2.7.1.2 Determination of parameters needed for calculating the rate matching pattern |

Other specs affected:	Other 3G core specifications		→ List of CRs:	
	Other GSM core specifications		→ List of CRs:	
	MS test specifications		→ List of CRs:	
	BSS test specifications		→ List of CRs:	
	O&M specifications		→ List of CRs:	

| **Other comments:** | Identical change should be introduced in 25.222 as well. |
| | Revision 2: Editorial revision due to new CR-form and official version 3.0.0 |

4.2.7.1.2 Determination of parameters needed for calculating the rate matching pattern

The number of bits to be repeated or punctured, $\pmb{D}N_{ij}$, within one radio frame for each TrCH i is calculated with equation 1 for all possible transport format combinations j and selected every radio frame. $N_{data,j}$ is given from section 4.2.7.1.1. In compressed mode $N_{data,j}$ is replaced by $N_{data,j}^{cm}$ in Equation 1. $N_{data,j}^{cm}$ is given from the following relation:

$$N_{data,j}^{cm} = 2N_{data,j} - N_{TGL}, \text{ where}$$

$$N_{TGL} = \begin{cases} \dfrac{TGL}{15}2N_{data,j}, \text{ if } N_{first} + TGL \leq 15 \\[2em] \dfrac{15 - N_{first}}{15}2N_{data,j}, \text{ in first frame if } N_{first} + TGL > 15 \\[2em] \dfrac{TGL - (15 - N_{first})}{15}2N_{data,j}, \text{ in second frame if } N_{first} + TGL > 15 \end{cases}$$

N_{first} and TGL are defined in section 4.4.

If $\pmb{D}N_{ij} = 0$ then the output data of the rate matching is the same as the input data and the rate matching algorithm of section 4.2.7.4 does not need to be executed.

Otherwise, for determining e_{ini}, e_{plus}, e_{minus}, and N the following parameters are needed (regardless if the radio frame is compressed or not):

For convolutional codes,

R = $\pmb{D}N_{ij}$ mod N_{ij} -- note: in this context $\pmb{D}N_{ij}$ mod N_{ij} is in the range of 0 to N_{ij}-1 i.e. -1 mod 10 = 9.

if R ≠ 0 and 2R ≤ N_{ij}

   then q = $\acute{e} N_{ij} / R \grave{u}$

else

   q = $\acute{e} N_{ij} / (R - N_{ij}) \grave{u}$

endif

-- note: q is a signed quantity.

~~q = ⌊N_{ij}/(|ΔN_{ij}|)⌋~~

if q is even

   then q' = q $\pm$ gcd($\lfloor$q$\rfloor$, F_i)/F_i -- where gcd ($\lfloor$q$\rfloor$, F_i) means greatest common divisor of $\lfloor$q$\rfloor$ and F_i

   -- note that q' is not an integer, but a multiple of 1/8

else

   q' = q

endif

for x = 0 to F_i-1

   S(I$_F$ (⌊⌊x*q'⌋⌋ mod F_i)) = (⌊⌊x*q'⌋⌋ div F_i)

end for