

**TSG RAN Meeting #19**  
**Birmingham, United Kingdom, 11 - 14 March, 2003**

**RP-030046**

**Title** CRs (Rel-5) for WI "High Speed Downlink Packet Access" (FDD UE)  
**Source** TSG RAN WG4  
**Agenda Item** 9.4.1

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-020267	25.101	212	1	F	Rel-5	5.5.0	Specification of HSDPA FRC Performance for H-Sets 4 & 5	HSDPA-RF
R4-020268	25.101	213	1	F	Rel-5	5.5.0	Specification of HSDPA FRC Performance with Open Loop Transmit Diversity	HSDPA-RF
R4-020270	25.101	215	1	F	Rel-5	5.5.0	Clarification of HSDPA FRC Test Procedure on HS-SCCH Signalling Error	HSDPA-RF

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

# CHANGE REQUEST

⌘ **25.101 CR 212** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

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

<b>Title:</b>	⌘ Specification of HSDPA FRC Performance for H-Sets 4 & 5		
<b>Source:</b>	⌘ RAN WG4		
<b>Work item code:</b>	⌘ HSDPA-RF	<b>Date:</b>	⌘ 05/03/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)	<b>R96</b> (GSM Phase 2)	
	<b>A</b> (corresponds to a correction in an earlier release)	<b>R97</b> (Release 1996)	
	<b>B</b> (addition of feature),	<b>R98</b> (Release 1997)	
	<b>C</b> (functional modification of feature)	<b>R99</b> (Release 1998)	
	<b>D</b> (editorial modification)	<b>Rel-4</b> (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<b>Rel-5</b> (Release 4)
			<b>Rel-6</b> (Release 5)
			<b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ The required HSDPA FRC throughput performance for H-Sets 4 and 5 is not specified, and Tables 9.7 and 9.8 need to be populated with values.
<b>Summary of change:</b>	⌘ Values taken from H-Set 1 QPSK requirements (Table 9.3) are applied to H-Set 5 (after scaling by a factor of 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer). Values for H-Set 4 are specified as the average of those results made available by companies to the RAN-WG4 reflector as of Feb. 8 <sup>th</sup> , 2003.
<b>Consequences if not approved:</b>	⌘ HSDPA FRC performance requirements for H-Sets 4 & 5 are not specified, and the HSPDA receiver performance specification is incomplete.

<b>Clauses affected:</b>	⌘ 9.2.1.3										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;"></td> </tr> <tr> <td style="width: 20px;"></td> <td style="width: 20px;">X</td> </tr> </table>	Y	N	X	X	X			X	Other core specifications Test specifications O&M Specifications	⌘ 34.121
Y	N										
X	X										
X											
	X										
<b>Other comments:</b>	⌘										

**How to create CRs using this form:**

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- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

- 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.

### 9.2.1.1 Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

For the parameters specified in Table 9.2, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 9.3 for the DL reference channels specified in Annex A.7.1

**Table 9.2 Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3**

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
$I_{oc}$	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

**Table 9.3 Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3**

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH $E_c / I_{or}$ (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc} = 0$ dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc} = 10$ dB
1	PA3	-6	65	309
		-3	147	423
2	PB3	-6	23	181
		-3	138	287
3	VA30	-6	22	190
		-3	142	295
4	VA120	-6	13	181
		-3	140	275

\* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1  
2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 [and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer](#))  
3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 [and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer](#))

### 9.2.1.2 Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

For the parameters specified in Table 9.4, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 9.5 for the DL reference channels specified in Annex A.7.1.

**Table 9.4 Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3**

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
$I_{oc}$	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{6,2,1,5}			
Maximum number of HARQ transmission		4			

**Table 9.5 Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3**

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH $E_c / I_{or}$ (dB)	T-put $R$ (kbps) * $\hat{I}_{or} / I_{oc} = 10$ dB
1	PA3	-6	198
		-3	368
2	PB3	-6	34
		-3	219
3	VA30	-6	47
		-3	214
4	VA120	-6	28
		-3	167

\* Notes: 1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1  
 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)  
 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)

9.2.1.3 Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4/5

For the parameters specified in Table 9.6, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 9.7 and 9.8 for the DL reference channels specified in Annex A.7.1.4 and A.7.1.5.

**Table 9.6 Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5**

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
$I_{oc}$	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

**Table 9.7 Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4**

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH $E_c / I_{or}$ (dB)	T-put $R$ (kbps) * $\hat{I}_{or} / I_{oc} = 0$ dB	T-put $R$ (kbps) * $\hat{I}_{or} / I_{oc} = 10$ dB
1	PA3	-6	<del>72</del> TBD	<del>340</del> TBD
		-3	<del>170</del> TBD	<del>439</del> TBD
2	PB3	-6	<del>24</del> TBD	<del>186</del> TBD
		-3	<del>142</del> TBD	<del>299</del> TBD
3	VA30	-6	<del>19</del> TBD	<del>183</del> TBD
		-3	<del>148</del> TBD	<del>306</del> TBD
4	VA120	-6	<del>11</del> TBD	<del>170</del> TBD
		-3	<del>144</del> TBD	<del>284</del> TBD

\* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4

Table 9.8 Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH $E_c/I_{or}$ (dB)	T-put $R$ (kbps) * $\hat{I}_{or}/I_{oc} = 0$ dB	T-put $R$ (kbps) * $\hat{I}_{or}/I_{oc} = 10$ dB
1	PA3	-6	<u>98</u> <del>TBD</del>	<u>464</u> <del>TBD</del>
		-3	<u>221</u> <del>TBD</del>	<u>635</u> <del>TBD</del>
2	PB3	-6	<u>35</u> <del>TBD</del>	<u>272</u> <del>TBD</del>
		-3	<u>207</u> <del>TBD</del>	<u>431</u> <del>TBD</del>
3	VA30	-6	<u>33</u> <del>TBD</del>	<u>285</u> <del>TBD</del>
		-3	<u>213</u> <del>TBD</del>	<u>443</u> <del>TBD</del>
4	VA120	-6	<u>20</u> <del>TBD</del>	<u>272</u> <del>TBD</del>
		-3	<u>210</u> <del>TBD</del>	<u>413</u> <del>TBD</del>

\* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5

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

<b>Title:</b>	⌘ Specification of HSDPA FRC Performance with Open Loop Transmit Diversity		
<b>Source:</b>	⌘ RAN WG4		
<b>Work item code:</b>	⌘ HSDPA-RF	<b>Date:</b>	⌘ 05/03/2003
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			<b>Rel-6</b> (Release 5)
			<b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ The required HSDPA FRC throughput performance for H-Sets 1-5 with open loop transmit diversity is not specified, and Tables 9.A -9.F need to be constructed and populated, for both QPSK and 16-QAM cases.
<b>Summary of change:</b>	⌘ Values are specified as the average of those results made available by companies to the RAN-WG4 reflector as of Feb. 8 <sup>th</sup> , 2003, with the exception of the H-Set 5 results, which are generated from the H-Set 1 QPSK results (Table 9.B) by multiplying by 1.5 and rounding to the nearest integer t-put in kbps.
<b>Consequences if not approved:</b>	⌘ HSDPA FRC performance requirements for H-Sets 1- 5 are not specified for the open loop transmit diversity case, and the HSPDA receiver performance specification is incomplete.

<b>Clauses affected:</b>	⌘ 9.2.2										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"> </td> <td style="padding: 2px;">X</td> </tr> <tr> <td style="padding: 2px;">X</td> <td style="padding: 2px;"> </td> </tr> <tr> <td style="padding: 2px;"> </td> <td style="padding: 2px;">X</td> </tr> </table>	Y	N		X	X			X	Other core specifications	⌘ 34.121
	Y	N									
		X									
X											
	X										
Test specifications											
O&M Specifications											
<b>Other comments:</b>	⌘										

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## 9.2.2 Open Loop Diversity performance

The receiver single open loop transmit diversity performance of the High Speed Physical Downlink Shared Channel (HS-DSCH) in multi-path fading environments are determined by the information bit throughput R.

### 9.2.2.1 Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

For the parameters specified in Table 9.A, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 9.B for the DL reference channels specified in Annex A.7.1.

**Table 9.A Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3**

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
$I_{oc}$	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Void

**Table 9.B Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3**

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH $E_c / I_{or}$ (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc} = 0$ dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc} = 10$ dB
1	PA3	-6	77	375
		-3	180	475
2	PB3	-6	20	183
		-3	154	274
3	VA30	-6	15	187
		-3	162	284

\* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1  
 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)  
 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)

Void

### 9.2.2.2 Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

For the parameters specified in Table 9.C, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 9.D for the DL reference channels specified in Annex A.7.1.

**Table 9.C Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3**

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
$I_{oc}$	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{6,2,1,5}			
Maximum number of HARQ transmission		4			

Void

**Table 9.D Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3**

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH $E_c / I_{or}$ (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc} = 10$ dB
1	PA3	-6	295
		-3	463
2	PB3	-6	24
		-3	243
3	VA30	-6	35
		-3	251

\* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1  
 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)  
 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)

Void

9.2.2.3 Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4/5

For the parameters specified in Table 9.E, the requirements are specified in terms of a minimum information bit throughput R as shown in Tables 9.F and 9.G for the DL reference channels specified in Annex A.7.1.4 and A.7.1.5 respectively.

**Table 9.E Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5**

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
$I_{oc}$	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Void

**Table 9.F Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4**

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH $E_c / I_{or}$ (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc} = 0$ dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc} = 10$ dB
1	PA3	-6	70	369
		-3	171	471
2	PB3	-6	14	180
		-3	150	276
3	VA30	-6	11	184
		-3	156	285

\* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4

Void

**Table 9.G Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5**

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH $E_c / I_{or}$ (dB)	T-put <sub>R</sub> (kbps)* $\hat{I}_{or} / I_{oc} = 0$ dB	T-put <sub>R</sub> (kbps)* $\hat{I}_{or} / I_{oc} = 10$ dB
1	PA3	-6	116	563
		-3	270	713
2	PB3	-6	30	275
		-3	231	411
3	VA30	-6	23	281
		-3	243	426

\* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5

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## C.5 HSDPA DL Physical channels

### C.5.1 Downlink Physical Channels connection set-up

Table C.8 is applicable for the measurements for tests in subclause 9.2.1. Table C.9 is applicable for the measurements for tests in subclause 9.2.2.

**Table C.8: Downlink physical channels for HSDPA receiver testing for Single Link performance.**

Physical Channel	Parameter	Value	Note
P-CPICH	P-CPICH_Ec/Ior	-10dB	
P-CCPCH	P-CCPCH_Ec/Ior	-12dB	Mean power level is shared with SCH.
SCH	SCH_Ec/Ior	-12dB	Mean power level is shared with P-CCPCH – SCH includes P- and S-SCH, with power split between both. P-SCH code is S_dl,0 as per TS25.213 S-SCH pattern is scrambling code group 0
PICH	PICH_Ec/Ior	-15dB	
DPCH	DPCH_Ec/Ior	Test-specific	12.2 kbps DL reference measurement channel as defined in Annex A.3.1
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval).
HS-SCCH_2	HS-SCCH_Ec/Ior	DTX'd	No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTX'd	As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTX'd	As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	OCNS interference consists of 6 dedicated data channels as specified in table C.10.

**Table C.9: Downlink physical channels for HSDPA receiver testing for Open Loop Diversity performance.**

Void

## C.5.2 OCNS Definition

The selected channelization codes and relative power levels for OCNS transmission during for HSDPA performance assessment are defined in Table C.10. The selected codes are designed to have a single length-16 parent code.

**Table C.10: OCNS definition for HSDPA receiver testing.**

Channelization Code at SF=128	Relative Level setting (dB)	DPCH Data
2	-6	The DPCH data for each channelization code shall be uncorrelated with each other and with any wanted signal over the period of any measurement.
3	-8	
4	-8	
5	-10	
6	-7	
7	-9	

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## CHANGE REQUEST

⌘ **25.101 CR 215** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

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

<b>Title:</b>	⌘ Clarification of HSDPA FRC Test Procedure on HS-SCCH Signalling Error		
<b>Source:</b>	⌘ RAN WG4		
<b>Work item code:</b>	⌘ HSDPA-RF	<b>Date:</b>	⌘ 05/03/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
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	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<b>Rel-4</b> (Release 4)
			<b>Rel-5</b> (Release 5)
			<b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ The action of the Node-B emulator in response to the HS-DPCCH ACK/NACK signalling field during Fixed Reference Channel (FRC) testing is not clear when there is a possibility of HS-SCCH signalling failure at the UE.
<b>Summary of change:</b>	⌘ The required behaviour of the Node-B emulator to each possible state of the ACK/NACK field (up to the maximum number of transmissions) is specified to be:  ACK: transmit 1 <sup>st</sup> redundancy version (RV) of a new HS-DSCH packet NACK: transmit the next RV (up to the maximum permitted number) DTX: transmit the RV previously transmitted to the same H-ARQ process
<b>Consequences if not approved:</b>	⌘ The required behaviour of the Node-B emulator during FRC testing is ambiguous.

<b>Clauses affected:</b>	⌘ 9.2										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;"> </td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table>	Y	N		X	X			X	Other core specifications	⌘ 34.121
Y	N										
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X											
	X										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘										

**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.

## 9.2 Demodulation of HS-DSCH (fFixed rReference eChannel)

The performance requirement for a particular UE belonging to certain HS-DSCH category are determined according to Table 9.1.

**Table 9.1 Mapping between HS-DSCH category and FRC**

HS-DSCH category	Corresponding requirement
Category 1	H-Set 1
Category 2	H-Set 1
Category 3	H-Set 2
Category 4	H-Set 2
Category 5	H-Set 3
Category 6	H-Set 3
Category 11	H-Set 4
Category 12	H-Set 5

During the Fixed Reference Channel tests the behaviour of the Node-B emulator in response to the ACK/NACK signalling field of the HS-DPCCH is specified in Table 9.1A:

**Table 9.1A Node-B Emulator Behaviour in response to ACK/NACK/DTX**

<u>HS-DPCCH ACK/NACK Field State</u>	<u>Node-B Emulator Behaviour</u>
<u>ACK</u>	<u>ACK: new transmission using 1<sup>st</sup> redundancy version (RV)</u>
<u>NACK</u>	<u>NACK: retransmission using the next RV (up to the maximum permitted number of RV's)</u>
<u>DTX</u>	<u>DTX: retransmission using the RV previously transmitted to the same H-ARQ process</u>