Technical Specification Group Services and System Aspects Meeting #14, Kyoto, Japan, 17-20 December 2001

Source: TSG-SA WG4

Title: CRs to TS 06.73 and TS 26.073 on Correction of RX-DTX

handling of NO_DATA frames in AMR decoder

(R98, R99, and Rel-4)

Document for: Approval

Agenda Item: 7.4.3

The following CRs, agreed at the TSG-SA WG4 meeting #19, are presented to TSG SA #14 for approval.

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
06.73	A28		R98	Correction of RX-DTX handling of NO_DATA frames in AMR decoder	F	7.5.0	S4	TSG-SA WG4#19	S4-010668
26.073	013		R99	Correction of RX-DTX handling of NO_DATA frames in AMR decoder	Α	3.2.0	S4	TSG-SA WG4#19	S4-010669
26.073	014		REL-4	Correction of RX-DTX handling of NO_DATA frames in AMR decoder	Α	4.0.0	S4	TSG-SA WG4#19	S4-010670

3GPP TSG-SA WG4 Meeting #19 December 3-7, 2001; Tokyo, Japan

CHANGE REQUEST								
*	06.73 CR A28							
For HELP on u	For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the % symbols.							
Proposed change affects: \$\(\mathbb{K}\) (U)SIM ME/UE X Radio Access Network X Core Network								
Title:	CR to TS 06.73 A28 on Correction of RX-DTX handling of NO_DATA frames in AMR decoder							
Source: #	TSG SA WG4							
Work item code: ₩	AMR Date: B Dec. 17, 2001							
Category:	F Use one of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification) C (editorial modification) D (editorial modification) C (fund explanations of the above categories can be found in 3GPP TR 21.900. Release: # R98 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: ** NO_DATA frames do not update the decoder SID-states correctly.								
Summary of change:								
Consequences if not approved:	# When the frame type NO_DATA is used to signal frame erasures, the comfort noise performance in frame error conditions is significantly worse than possible							
Clauses affected:	X							
Other specs Affected:	# Other core specifications # Test specifications O&M Specifications							
Other comments:	**As the change merely affects error concealment functionality, it does not impact the speech codec test vectors. A detailed motivation for the CR is given in Tdoc S4-010633: "Correction of RX-DTX handling of NO_DATA frames in AMR decoder"							

1. How the code is changed

1.1 File dtx_dec.c, function rx_dtx_handler

1.1.1 Before the change (lines 792...809)

```
/* update the SPE-SPD DTX hangover synchronization */
/* to know when SPE has added dtx hangover
st->decAnaElapsedCount = add(st->decAnaElapsedCount, 1);
                                                                     move16();
                                                                     move16();
st->dtxHangoverAdded = 0;
test(); test(); test(); test();
if ((sub(frame_type, RX_SID_FIRST) == 0)
    (sub(frame_type, RX_SID_UPDATE) == 0)
    (sub(frame_type, RX_SID_BAD) == 0)
(sub(frame_type, RX_ONSET) == 0)
    (sub(frame_type, RX_NO_DATA) == 0))
   encState = DTX;
                                                                     move16();
}
else
{
   encState = SPEECH;
                                                                     move16();
```

1.1.2 After the change

```
/* update the SPE-SPD DTX hangover synchronization */
/* to know when SPE has added dtx hangover
st->decAnaElapsedCount = add(st->decAnaElapsedCount, 1);
                                                                  move16();
st->dtxHangoverAdded = 0;
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test(); test(); test(); test();
if ((sub(frame_type, RX_SID_FIRST) == 0)
    (sub(frame_type, RX_SID_UPDATE) == 0)
    (sub(frame_type, RX_SID_BAD) == 0)
    (sub(frame_type, RX_ONSET) == 0)
(sub(frame_type, RX_NO_DATA) == 0))
   encState = DTX;
                                                                  move16();
      In frame errors simulations RX_NO_DATA may occasionally mean that
      a speech packet was probably sent by the encoder,
      the assumed _encoder_ state should be SPEECH in such cases.
   test(); logic16();
   if((sub(frame_type, RX_NO_DATA) == 0) &&
      (sub(newState, SPEECH) == 0))
   {
      encState = SPEECH;
                                                                 move16();
   }
else
   encState = SPEECH;
                                                                  move16();
```

3GPP TSG-SA WG4 Meeting #19 December 3-7, 2001; Tokyo, Japan

		CHANG	GE REQ	UEST		CR-Form-v5
*	26.073	CR <mark>013</mark>	жrev	- #	Current version:	3.2.0 [#]
For HELP on t	using this forn	n, see bottom of	f this page or	look at the	e pop-up text ove	r the 光 symbols.
Proposed change	affects: 第	(U)SIM	ME/UE X	Radio Ad	ccess Network X	Core Network
Title: #	CR to TS 2 decoder	6.073-013 on C	orrection of I	RX-DTX h	andling of NO_DA	ATA frames in AMR
Source: #	TSG SA W	'G4				
Work item code: ₩	AMR				Date: ₩ De	ec. 17, 2001
Cotogori	Δ.				Release: # R	20
Category: #		a fallanninan aataa				
	F (corre A (corre B (addit C (funct D (edito Detailed expl.	ne following catego ection) esponds to a corre- tion of feature), tional modification virial modification) anations of the at GPP TR 21.900.	ection in an ea		2 (GS e) R96 (Rei R97 (Rei R98 (Rei R99 (Rei REL-4 (Rei	following releases: M Phase 2) lease 1996) lease 1997) lease 1998) lease 4) lease 5)
Reason for change	e: % <mark>NO_D</mark> A	ATA frames do r	not update the	e decoder	SID-states correct	ctly.
Summary of chang	ge:	dtx_dec.c has	to be change	ed in 5 cod	e lines	
Consequences if not approved:					<mark>ignal frame erasu</mark> is significantly wo	ures, the comfort orse than possible
Clauses affected:						
Other specs	₩ Oth	er core specific	ations #	3		
Affected:		st specifications M Specifications				
Other comments:	the sp A deta	eech codec test	t vectors. for the CR is	given in T	doc S4-010633: '	it does not impact 'Correction of RX-

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		CHAI	NGE REC	UEST	-	CR-Form-v5
*	26.073	CR 014	≋ rev	- #	Current version:	4.0.0 [#]
For HELP on t	using this for	m, see botton	of this page or	r look at th	e pop-up text ove	r the ₩ symbols.
Proposed change	affects: 光	(U)SIM	ME/UE X	Radio A	ccess Network X	Core Network
Title: ∺	CR to TS decoder	26.073-014 oı	Correction of	RX-DTX h	nandling of NO_D	ATA frames in AMR
Source: #	TSG SA V	VG4				
Work item code: ₩	AMR				Date: 第 D	ec. 17, 2001
Category: Ж	Use <u>one</u> of the F (correct A (correct B (add C (fund D (edit Detailed exp	responds to a c lition of feature) ctional modifica torial modification	orrection in an ea , tion of feature) on) e above categorie		Use <u>one</u> of the 2 (GS se) R96 (Re R97 (Re R98 (Re R99 (Re REL-4 (Re	el-4 following releases: SM Phase 2) lease 1996) lease 1997) lease 1998) lease 4) lease 5)
Reason for change: NO_DATA frames do not update the decoder SID-states correctly. Summary of change: The file dtx_dec.c has to be changed in 5 code lines						
Consequences if not approved:	₩ Whe	n the frame ty	pe NO_DATA is	s used to s	signal frame erası	ures, the comfort orse than possible
Clauses affected:	#					
Other specs Affected:	Te	ther core specest specification	ns	€		
Other comments:	the s A det	peech codec t tailed motivation	est vectors.	given in T	Гdoc S4-010633:	it does not impact "Correction of RX-

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