Technical Specification Group Services and System Aspects **TSGS#15(02)~~0121~~0164**
Meeting #15, Cheju Island, Korea, 11-14 March 2002

CR-Form-v4

CHANGE REQUEST

⌘	22.003	CR	011	⌘	ev	-	⌘	Current version:	5.0.0	⌘

Spec Title: Circuit Teleservices supported by a Public Land Mobile Network (PLMN) ⌘

*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 [X]

Title:	⌘	Support of Legacy Transceivers in GERAN
Source:	⌘	Siemens, Nortel Networks
Work item code:	⌘	AMR
Date:	⌘	2002-03-07
Category:	⌘	C
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)

Reason for change:	⌘	To comply with the TSG GERAN request that EFR be mandatory for GERAN MS supporting Iu mode. This decision regarding EFR was a result of a long discussion of over 1 year in TSG GERAN on the issue of what is known as legacy Transceivers. It should be noted that EFR and AMR 12.2 kbps are the same speech codec, but the channel coding is different, with the AMR 12.2 being significantly more complex. Therefore a network supporting EFR cannot be considered to support AMR 12.2. Note, that this CR has been promised by TSG SA1#15 in LS S1-020656 to TSG GERAN, but could not be agreed due to lack of time.
Summary of change:	⌘	This CR requires that 1.) a UE supporting GERAN Iu mode shall support both codecs: for AMR Narrow Band family and Enhanced Full Rate. 2.) a network supporting GERAN Iu mode shall support at least one of these codecs
Consequences if not approved:	⌘	The installed base of GSM/GERAN transceivers is very large, and it is therefore essential that introduction of new services does not require replacement of this hardware. If not agreed this would create a situation where the majority of the operators would need to change their network - hardware.

Clauses affected:	⌘	A.1.1
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

First Modified Section

A.1 Individual Teleservices

A.1.1 Telephony

Teleservice 11, Telephony							
	1.	1.1 Type or user information			speech		
A	HLC	1.2 Layer 4 protocol functions			-		
T		1.3 Layer 5 protocol functions			-		
T		1.4 Layer 6 protocol functions			-		
R		1.5 Layer 7 protocol functions			-		
I	2.	2.1	2.1.1 Information transfer capability		speech (digital representation)		
B	LLC		2.1.2 Information transfer mode		circuit		
U		Inform	2.1.3 Information transfer rate		not applicable		
T		transfer	2.1.4 Structure		not applicable		
E			2.1.5 Establishment of connection		demand MO MT		
S			2.1.6 Communication configuration		point-to-point		
			2.1.7 Symmetry		bidirectional symmetry		
		2.2	2.2.1 Signalling access		manual		
		Access	2.2.2 Information access	rate	full rate/half rate		
		at UE	(TS 22.001)	interface			
		2.3	2.3.1 Visible network type		PSTN/ISDN/ -PLMN		
		Inter-	2.3.2 National/Internat. interworking		international/national		
		working	2.3.3 Interface of TE to terminating		2 wire, analogue	4 wire S (B+B+D)	ME
	3.	3.1 Supplementary service provided			TS 22.004		
	Gen	3.2 Quality of service					

Comments:

This service provides the transmission of speech information and audible signalling tones of the PSTN/ISDN. In the PLMN and the fixed network processing technique appropriate for speech such as analogue transmission, echo cancellation and low bit rate voice encoding may be used. Hence, bit integrity is not assured.

1) Transparency for telephone signalling tones is provided.

2) Transparency for voice band facsimile signals is not mandatory. (Appropriate bearer services see TS 22.002 [3].)

3) Transparency for end to end speech encryption is not mandatory. If a user needs to apply this technique an appropriate bearer service (TS 22.002 [3]) can be used.

4) Transmission of DTMF is provided in the mobile to fixed direction (e.g. for controlling voice mail boxes) during any time of an established call.

5) In A/Gb mode of operation (GERAN) speech teleservices may be provided using the Full Rate (full rate, version 1), Enhanced Full Rate (full rate, version 2), Half Rate (half rate, version 1), Adaptive Multirate (AMR) or Wideband Adaptive Multirate (AMR-WB) speech codecs. The default speech codec to provide speech service in this case is Full Rate.

6) In UTRAN ~~Iu mode of~~ operation ~~(UTRAN and GERAN)~~ speech teleservices may be provided using the Adaptive Multirate (AMR) or Wideband Adaptive Multirate (AMR-WB) speech codecs. The default speech codec to provide speech service in this case is AMR.

7) In GERAN Iu mode of operation speech teleservices may be provided using the Adaptive Multirate (AMR) or Wideband Adaptive Multirate (AMR-WB) or Enhanced Full Rate (EFR) speech codecs. Both the Narrow Band AMR codec family (Full Rate AMR and Half Rate AMR) and the EFR codec shall be supported by the UE. The network shall either support at least ~~one~~the AMR ~~mode~~ or the EFR codec.

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