3GPP TSG CN Meeting #6
Nice, 13 - 15 December 1999

***Document* NP-99508**
e.g. for 3GPP use the format TP-99xxx
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CHANGE REQUEST

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

23.034	**CR**	**002**	Current Version:	3.1.0

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

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

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

Source: Ericsson **Date:** 991202

Subject: Link Adaptation for ECSD

Work item: ECSD

Category: *(only one category shall be marked with an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature	X		Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The procedures for Link Adaptation between 8-PSK coding schemes and 8-PSK coding scheme and GMSK coding scheme is currently unspecified.

Clauses affected: A new subchapter in 5.2 is added

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:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

5.2.5 Start of ciphering

In order to start ciphering, the RR Encryption procedure is controlled by the main signalling link, only. The encryption information for secondary HSCSD channel is forwarded to the corresponding TCH/F in initial channel activation or later in the channel reactivation or Mode modify message.

The change of ciphering modes for separate channels within the HSCSD connection might not be perfectly synchronized.

5.2.6 Link Adaptation

Due to different radio conditions link adapation need to be performed to optimise the troughput over the radio connection . In performing link adaption between 8-PSK channel coding schemes i.e.43.2 kbps and 28.8 kbps , the normal Channel Mode (or the assignment or the intra-cell HO procedure) shall be applied and in case of link adaptation between 8-PSK 43.2 kbps or 28.8 channel coding scheme and GMSK 14.4 kbps coding the assignment procedure or the intra-cell handover shall be applied.

The Link Adaptation procedure is based on the GSM measurements in connected mode. For NT services the Link Adaptation may be applied separately for downlink and uplinks. In case of multislot configurations all timeslots in respectively direction, downlink or uplinks, shall experienced the same channel coding, i.e all timeslots shall have the same channel coding.

5.3 Transparent data transmission

5.3.1 Numbering of data substreams

In transparent data transmission the V.110 data frames on the HSCSD channels carry data substream numbers to retain the order of transmission over GSM, between the split/combine functions. Between these functions a channel internal multiframing is also used in order to increase the tolerance against inter channel transmission delays. Depending on the location of the access point to external networks the split/combine functionality is located in the BSS or in the IWF on the network side, and at the mobile station.

A detailed description of the numbering scheme is given in GSM 04.21 [12].

5.3.2 Padding

HSCSD also supports user rates which are not multiples of rates provided by one TCH/F.

If the selected user rate requires n TCH/F channels but is less than the total rate that can be achieved with these n TCH/F then in the first n-1 channels the data frames carry user data on all D bits. In the n th channel the unneeded D bits of the V.110 frames are padded with fill bits.

5.4 Non-Transparent data transmission

5.4.1 HSCSD RLP

Non-transparent mode of HSCSD is realized by modifying the RLP and L2R functions to support multiple parallel TCH/Fs instead of only one TCH/F (figure 11). In addition the RLP frame numbering is increased to accommodate the enlarged data transmission rate.

The detailed specification of the RLP is given in GSM 04.22 [5], and L2R is defined in GSM 07.02 [13] and GSM 07.03 [14].

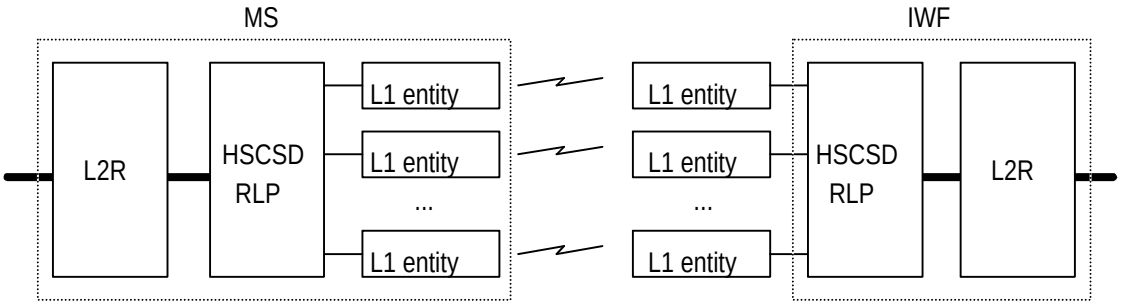

Figure 11: The HSCSD concept in non-transparent mode

5.5 Interworking

Interworking of HSCSD will be arranged to all the services to which interworking is provided in the existing GSM-system; these services are PSTN, ISDN, CSPDN and PSPDN.

5.6 Subscription aspects and storage of subscriber data

The HSCSD uses general bearer services defined in 02 series specifications. No HSCSD related subscriber data is stored in HLR or VLR with the exception of the bearer capability allocation (see GSM 03.08 [16]).

Chapter 2 6 Charging

6.1 General principles

The A party is liable for the usage of all TCH/F in her PLMN. The B party may have to pay for one or more TCH/F in her PLMN. In case the originating or terminating subscriber is in the PSTN there is no additional charge for them.

6.2 Call forwardings

The A party is liable for the leg A-B. The B party who forwards the call to the forwarded-to subscriber (C party) is liable for the primary (basic) channel on the leg B-C. Forwarded-to (C party) is liable for the usage of one or more TCH/F in her PLMN.

6.3 AoC and toll ticketing

MSC will send the modified e-parameters to the MS, both in MO and in MT calls, every time the charging rate will change. This can happen when:

- the coding on the air interface channel is changed;

- the number of TCH/F allocated is increased or decreased;

during an existing HSCSD data call and when AoC supplementary service is activated.

Appropriate information concerning these changes have to also be included in the charging record (toll ticket).

Annex A:
Change history

Change history								
TSG CN#	**Spec**	**Version**	**CR**	**Rev.**	**Rel.**	**New Version**	**Subject**	**Comment**
Apr 1999	GSM 03.34							Transferred to 3GPP CN1
CN#03	23.034					3.0.0		Approved at CN#03
CN#5	23.034	3.0.0	001	1	R99	3.1.0	CR to 23.034 due to asymmetry for ECSD	

Chapter 3 History

Document history		
V3.0.0	May 1999	Approved at TSGN #3. Under TSG TSG CN Change Control.
V3.1.0	October 99	Approved at TSGN # 5.