TSG RAN Meeting #22 **RP-030600**
Maui, Hawaii, US, 9 - 12 December 2003

Title **CR (Rel-5) to TS 25.113, "Performance criteria for voltage dips and battery backup"**
Source **TSG RAN WG4**
Agenda Item **7.5.5**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-030948	25.113	021		F	Rel-5	5.4.0	Performance criteria for voltage dips and battery backup	TEI5

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030948**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.113** **CR** **021** ⌘ **rev** ⌘ Current version: **5.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Performance criteria for voltage dips and battery backup
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
Category:	⌘	**F**
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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The modification is needed because the case with battery back-up is missing in TS 25.113. Also, the voltage dip and interruption of BS requirement is not in accordance with international immunity standards.
Summary of change:	⌘	Performance criteria for Voltage dip and Interruption of BS are moved to clause 9.7.3. In that clause, performance criteria for equipment with battery back-up are also added.
Consequences if not approved:	⌘	The Performance criteria for Voltage dip and Interruption of BS will be unclear and unique only for TS25.113 and will be in conflic with other EMC standards. Perforamce criteria for equipment with battery backup will be missing. Isolated impact analysis: Would not affect a BS that meets the existing performance criteria in Clause 6 (with battery back-up) and the international immunity standards.
Clauses affected:	⌘	6.1, 6.3, 6.6, 6.9, 9.7.3

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments: ⌘

6 Performance Criteria

6.1 Performance criteria for continuous phenomena for BS

The test should, where possible, be performed using a bearer with the characteristics of data rate and BLER defined in Table 1. If the test is not performed using one of these bearers (for, example, of none of them are supported by the BS), the characteristics of the bearer used shall be recorded in the test report.

The BS Uplink and Downlink paths shall each meet the performance criteria defined in Table 1 during the test. If the Uplink and Downlink paths are evaluated as a one loop then the criteria is two times the value shown in Table 1.After each test case BS shall operate as intended with no loss of user control function, stored data and the communication link shall be maintained.

Table 1: BS Performance Criteria for continuous phenomena for BS

Bearer Information Data Rate	Performance Criteria
12.2 kbps	BLER < 10^{-2} No loss of service
64 kbps	BLER < 10^{-2} No loss of service
144 kbps	BLER < 10^{-2} No loss of service
384 kbps	BLER < 10^{-2} No loss of service

NOTE: The performance criteria, BLER < 10^{-2} / No loss of service, applies also if a bearer with another characteristics is used in the test.

6.2 Performance criteria for transient phenomena for BS

The test should be, where possible, be performed using a bearer with the characteristics of data rate and BLER defined in Table 2. If the test is not performed using one of these bearers (for, example, of none of them are supported by the BS), the characteristics of the bearer used shall be recorded.

The BS Uplink and Downlink paths shall each meet the performance criteria defined in table 2 during the test. If the Uplink and Downlink paths are evaluated as a one loop then the criteria is two times the value shown in Table 2. After each test case BS shall operate as intended with no loss of user control function, stored data and the communication link shall be maintained.

Table 2: BS Performance Criteria for transient phenomena for BS

Bearer Information Data Rate	Performance Criteria
12.2 kbps	BLER > 10^{-2} temporarily, however the communication link shall be maintained
64 kbps	BLER > 10^{-2} temporarily, however the communication link shall be maintained
144 kbps	BLER > 10^{-2} temporarily, however the communication link shall be maintained
384 kbps	BLER > 10^{-2} temporarily, however the communication link shall be maintained

NOTE: The performance criteria, BLER > 10^{-2} temporarily / however the communication link shall be maintained, applies also if a bearer with another characteristics is used in the test.

6.3 Void ~~Performance criteria for voltage dips (≥ 60%) and interruptions for BS~~

~~Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of controls.~~

6.4 Performance criteria for continuous phenomena for Ancillary equipment

The apparatus shall continue to operate as intended during and after the test. No degradation of performance or loss of function is allowed below the performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible performance loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacture, either of these may be derived from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.

6.5 Performance criteria for transient phenomena for Ancillary equipment

The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below the performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible performance loss of performance. During the test, degradation of performance is however allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacture, either of these may be derived from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.

6.6 Void ~~Performance criteria for voltage dips (≥ 60%) and interruptions for ancillary equipment~~

~~Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of controls.~~

6.7 Performance criteria for continuous phenomena for repeaters

The gain of the EUT shall be measured throughout the period of exposure of the phenomenon. The gain measured during the test shall not change from the gain measured before the test by more than ± 1 dB. At the conclusion of the test the EUT shall operate as intended with no loss of user control functions or stored data.

6.8 Performance criteria for transient phenomena for repeaters

The gain of the EUT shall be measured before the test and after each exposure. At the conclusion of each exposure the gain of the EUT shall not have changed by more than ± 1 dB. At the conclusion of the total test comprising the series of individual exposures, the EUT shall operate as intended with no loss of user control functions or stored data, as declared by the manufacturer, and the gain of the EUT shall not have changed by more than ± 1 dB.

6.9 Void ~~Performance criteria for voltage dips (≥ 60%) and interruptions for repeaters~~

~~Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of controls.~~

9.7.3 Performance criteria

For a voltage dip corresponding to a reduction of the supply voltage of 30 % for 10 ms the performance criteria for transient phenomena shall be applied: ~~performance criteria of subclause 6.2 shall apply for base station and performance criteria of subclause 6.5 for ancillary equipment and performance criteria of subclause 6.8 for repeater.~~

- Criteria 6.2 for base station
- Criteria 6.5 for ancillary equipment
- Criteria 6.8 for repeater

For a voltage dip corresponding to a reduction of the supply voltage of 60 % for 100 ms and/or a voltage interruption corresponding to a reduction of the supply voltage of > 95 % for 5 000 ms, the following applies: ~~the performance criteria of subclause 6.3 shall apply for base station, performance criteria of subclause 6.6 for ancillary equipment and performance criteria of subclause 6.9 for repeater with following exception:~~

- ~~in the case where the equipment is powered solely from the AC mains supply (without the use of a parallel battery back-up the communications link need not be maintained and may have to be re-established and volatile user data may have been lost.~~

~~In the event of loss of the communications link or in the event of loss of user data, this fact shall be recorded in the test report, the product description and the user documentation.~~

1. In the case where the equipment is fitted with or connected to a battery back-up, the following performance criteria shall be applied:
   - Criteria 6.2 for base station
   - Criteria 6.5 for ancillary equipment
   - Criteria 6.8 for repeater
2. In the case where the equipment is powered solely from the AC mains supply (without the use of a parallel battery back-up) volatile user data may have been lost and if applicable the communication link need not to be maintained and lost functions should be recoverable by user or operator:
   - No unintentional responses shall occur at the end of the test
   - In the event of loss of communications link or in the event of loss of user data, this fact shall be recorded in the test report