TEXAS INSTRUMENTS

Technical Documentation

SixTIes %CSSN. Low Level Design specification.

Department:	WTBU - Cellular Systems		
Creation Date:	2004-08-18		
Last Modified:	2004-08-18 by JuanVi Jativa-Villoldo		
ID:	8462.737.04	Version:	001
Status:	Submitted	ECCN:	Not Applicable

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0.2 Document History

Date	Version	Status	Author
2004-08-18 Initial version.	001	Draft	JuanVi Jativa-Villoldo

0.3 References, Abbreviations, Terms

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1 Introduction

From Customer:

"It should be better to be able to have a non blocking D command for voice calls even with the +CSSN command active. This behaviour can be defined by a new at command at startup or directly by default in the modem.

TI 2004-06-03:

A new %CSSN command will be implemented."

The understanding of this requirement is as follows:

ATD behaves in most of the cases in a non-blocking way. After executing ATD, the OK will return immediately, as, for example, in the following scenario:

atd03039831181;

OK

NO CARRIER

There is however a couple of scenarios in which ATD behave in a blocking way. These are:

- When there is a pending +CSSI intermediate result code. (And +CSSN=1)

- When +COLP has been enabled.

- When the call has been started by SAT.

This issue applies to the first scenario. The current behaviour in that scenario will be:

+CSSN=1

OK

atd03039831181;

+CSSI: 1

OK

The OK will only be sent from the ACI when the Called Party has accepted the call.

The required behaviour is, however,

%CSSN=1

OK

atd03039831181;

OK

+CSSI: 1

To handle this functionality, a new AT Command will be created, %CSSN. This Command will enable a mode in which +CSSI will not block ATD. %CSSN will have the some parameters and responses as +CSSN (<n> and <m> in GSM. 07.07), plus a new value for the parameter <n>, as described below.

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2 Interface changes.

2.1 Supplementary service notifications %CSSN

%CSSN parameter command syntax

Command	Possible response(s)
%CSSN=[<n>[,<m>]]	
%CSSN?	%CSSN: <n>,<m>
%CSSN=?	%CSSN: (list of supported <n>s),(list of supported <m>s)

Defined values

<n> (parameter sets/shows the +CSSI result code presentation status in the TA):

0   disable

1   enable

2   enable and non-blocking atD (Added value to parameter <n>)

<m> (parameter sets/shows the +CSSU result code presentation status in the TA):

0   disable

1   enable

This parameter will have the same functionality as +CSSN, defined in 3GPP 27.007, version 3.13, section 7.17, plus the added value to the parameter <n>

The ACI document 8415_004.doc will also be updated.

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3   Proposed Low Level Design.

3.1   Interface Changes

The new command %CSSN will be defined as described above.

3.2   ATI Modifications.

3.2.1   New Functions:

-setatPercentCSSN(). It will handle the %CSSN command.

-queatPercentCSSN(). It will handle the "%CSSN?" command.

-atiSShandleCSSN(). It will contain the common functionality of +CSSN and %CSSN.

3.2.2   Modified Functions:

-setatPlusCSSN().

3.2.3   Affected Global variables:

-ati_user_output_cfg[].CSSI_stat. This variable will accept the value "2" when %CSSN=2 is set, and will be accessed by CMH.

- The ATI array "cmds", in the file ati_cmd.c, will be updated with the new functions setatPercentCSSN() and queatPercentCSSN().

3.2.4   Description of the changes:

-Function atiSShandleCSSN (char *cl, UBYTE srcId); It will contain the main body of the current function setatPlusCSSN(), and will be called by setatPercentCSSN() and setatPlusCSSN(), because it encapsulates their common functionality (In order to avoid duplication of code).

-Function setatPercentCSSN(char *cl, UBYTE srcId); It will check that the first character of "*cl" (CSSI mode) is within the valid range ("0","1" or "2"), and then will call atiSShandleCSSN().

-Function setatPlusCSSN() will be modified so that it checks that the first character of "*cl" (CSSI mode) is within the valid range ("0","1"), and then will call atiSShandleCSSN().

-Function queatPercentCSSN(). It will call the function resp_disp() with the 2 parameters required.

3.3   CMH Modications.

No modification required. When ati_user_output_cfg[].CSSI_stat =2, the OK will be sent immediately by cmhCC_atdsendok(), and the CSSI will be handled afterwards by rCI_PlusCSSI().

4   Testing Details

The following Windows test cases will be added:

-Testcase 1. Test %CSSN=0 (CSSI presentation disabled)

AT+CPIN=1

OK

AT+COPS=0

OK

AT%CSSN=0

ATD03039831181;

OK

-Testcase 2. Test %CSSN=1(CSSI presentation enabled and blocking atD)

AT+CPIN=1

OK

AT+COPS=0

OK

AT%CSSN=1

OK

ATD03039831181;

+CSSI: 1

OK

-Testcase 3. Test %CSSN=2(CSSI presentation enabled and non-blocking atD)

AT+CPIN=1

OK

AT+COPS=0

OK

AT%CSSN=2

OK

ATD03039831181;

OK

+CSSI: 1

-Testcase 4. Test %CSSN=2,1 (CSSI and CSSU presentation enabled and non-blocking atD)

AT+CPIN=1

OK

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AT+COPS=0

OK

AT%CSSN=2

OK

ATD03039831181;

OK

+CSSI: 1

+CSSU: 1

-Testcase 5. Set and query %CSSN with different values.

AT+CPIN=1

OK

AT+COPS=0

OK

AT%CSSN=2,1

OK

AT%CSSN?

%CSSN 2,1

AT%CSSN=3

CME

Similar functionality will be tested in the target.