GPRS

G23-GPRS Protocol Stack

DCM

Service Access Point

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0 Document Control

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0.1 Document History

ID	Author	Date	Status
8462.101.03.001	STW	3 September, 2003	Planned

0.2 References, Abbreviations, Terms

[C_7010.801]   7010.801, References and Vocabulary, Condat AG

1 Overview

The Protocol Stacks are used to define the functionality of the GSM protocols for interfaces. The GSM specifications are normative when used to describe the functionality of interfaces, but the stacks and the subdivision of protocol layers does not imply or restrict any implementation.

2 Constants

Definition:

name	value	comment
CDCM_APN_MAX_LEN	100	Maximum length of an access point name
CDCM_PHONE_NR_LEN	84	Maximum length of a CSD phone number
CDCM_PDP_MAX_LEN	20	Maximum length of PDP address
CDCM_GATE_MAX_LEN	20	Maximum length of gateway address
CDCM_USER_MAX_LEN	25	Maximum length of user name
CDCM_PASSWORD_MAX_LEN	25	Maximum length of password
CDCM_DNS_MAX_LEN	20	Maximum length of DNS addresses

History:

03-Sep-2003   STW   Initial

3 Primitives

3.1 DCM_OPEN_CONN_REQ

Description:

The primitive allows the user to open a data connection depending on the selected bearer.

Definition:

short name	ID	direction
DCM_OPEN_CONN_REQ	0x8000401c	APP -> DCM

Elements:

long name	short name	Ctrl	ref	type
Api instance	api_instance		4.1	U32
Bearer type	bearer_select		4.3	S32
profile number	profile_number		4.5	U16
Paramater used for bearer connection	dcm_info_conn		4.6	STRUCT

History:

03-Sep-2003   STW   Initial

3.2 DCM_OPEN_CONN_CNF

Description:

The primitive informs user of result about DCM_OPEN_CONN_REQ.

Definition:

short name	ID	direction
DCM_OPEN_CONN_CNF	0x8000001c	DCM -> APP

Elements:

long name	short name	Ctrl	ref	type
Result of the operation	result		4.7	S32
Bearer handle	bearer_handle		4.2	U16

History:

03-Sep-2003   STW   Initial

3.3 DCM_CLOSE_CONN_REQ

Description:

   The primitive allows the user to close an opened data connection.

Definition:

short name	ID	direction
DCM_CLOSE_CONN_REQ	0x8001401c	APP -> DCM

Elements:

long name	short name	Ctrl	ref	type
Api instance	api_instance		4.1	U32
Beare handle	bearer_handle		4.2	U16

History:

   03-Sep-2003   STW   Initial

3.4 DCM_CLOSE_CONN_CNF

Description:

   The primitive informs user of result about DCM_CLOSE_CONN_REQ.

Definition:

short name	ID	direction
DCM_CLOSE_CONN_CNF	0x8001001c	DCM -> APP

Elements:

long name	short name	Ctrl	ref	type
Result of the operation	result		4.7	S32

History:

   03-Sep-2003   STW   Initial

3.5 DCM_GET_CURRENT_CONN_REQ

Description:

   The primitive allows the user to get information upon current active connection.

Definition:

short name	ID	direction
DCM_GET_CURRENT_CONN_REQ	0x8002401c	APP -> DCM

Elements:

long name	short name	Ctrl	ref	type
Api instance	api_instance		4.1	U32
Beare handle	bearer_handle		4.2	U16

History:

   03-Sep-2003   STW   Initial

3.6 DCM_GET_CURRENT_CONN_CNF

Description:

The primitive informs user of result about DCM_GET_CURRENT_CONN_REQ and current active connection information.

Definition:

short name	ID	direction
DCM_GET_CURRENT_CONN_CNF	0x8002001c	DCM -> APP

Elements:

long name	short name	Ctrl	ref	type
Result of the operation	result		4.7	S32
Connection information	dcm_info_conn		4.6	STRUCT

History:

03-Sep-2003   STW   Initial

3.7 DCM_ERROR_IND

Description:

The primitive allows the user to receive error and event indications from DCM.

Definition:

short name	ID	direction
DCM_ERROR_IND	0x8003001c	DCM -> APP

Elements:

long name	short name	Ctrl	ref	type
Error value	dcm_err		4.8	S32
Result of the operation	result		4.7	S32

History:

03-Sep-2003   STW   Initial

4 Parameters

4.1 API instance

Description:

The `api_instance` value returned by `sock_api_initialize()`..

Definition:

type	short name	Comment
U32	api_instance	The `api_instance` value returned by `sock_api_initialize()`.

History:

03-Sep-2003   STW   Initial

4.2 Bearer handle

Description:

The bearer_handle value is returned with the primitive DCM_OPEN_CONN_REQ.

Definition:

type	short name	Comment
U16	bearer_handle	Bearer handle

History:

03-Sep-2003   STW   Initial

4.3 Requested Bearer type

Description:

Bearer type used from DCFG or can take values as described below.

Definition:

type	short name	Comment
S32	bearer_select	Bearer type

Values:

value	c-macro	Comment
1	DCM_SOCK_BEARER_ANY	DCM will decide which connection type to be used
2	DCM_SOCK_BEARER_GPRS	Use a GPRS context as bearer, DCM will decide which GPRS settings to be used
3	DCM_SOCK_BEARER_GSM	Use GSM data connection as bearer DCM will decide which GSM settings to be used
4	DCM_SOCK_BEARER_USE_PROFILE	Use a specific data account for this connection
5	DCM_SOCK_BEARER_AS_SPECIFIED	Use the data account information which is which is delivered within this signal

History:

03-Sep-2003   STW   Initial

4.4 Authentication type

Description:

   The authentication type defines the authentication protocol to be used.

Definition:

type	short name	Comment
U16	authtype	Authentication type

Values:

value	c-macro	Comment
1	DCM_SOCK_AUTH_PAP	PAP authentification protocol
2	DCM_SOCK_AUTH_CHAP	CHAP authentification protocol !!! NOT SUPPORTED
3	DCM_SOCK_AUTH_NO	No authentication

History:

   03-Sep-2003   STW   Initial

4.5 Profile number

Description:

Number of the selected profile with a bearer selection of SOCK_BEARER_USE_PROFILE. Unused in other cases..

Definition:

type	short name	Comment
U16	profile_number	Profile ID for bearer selection

History:

06-Dec-2003   NI   Initial

4.6 Connection Information

Description:

The parameter contains information about the current active connection.

Definition:

type	short name	Comment
STRUCT	dcm_info_conn	Connection information

Elements:

long name	short name	Ctrl	type
Systemwide bearer handle	bearer_handle		U16
Comm handle of application	app_handle		U16
Used bearer type	bearer_type		U8
Flag for apn validation	apn_valid		U8
Access Point Name	apn	[CDCM_APN_MAX_LEN + 1]	U8
Flag for phone number validation	phone_number_valid		U8
CSD dial up phone number	phone_number	[CDCM_PHONE_NR_LEN + 1]	U8
Flag for user ID validation	user_id_valid		U8
User ID	user_id	[CDCM_USER_MAX_LEN + 1]	U8
Flag for password validation	password_valid		U8
Password	password	[CDCM_PASSWORD_MAX_LEN + 1]	U8
GPRS context ID	cid		U16
Used IP address	ip_address		U32
First domain name server	dns1		U32
Second domain name server	dns2		U32
Gateway address	gateway		U32
Type of authentication	auth_type		U16
Flag for data compression	data_compr		U8
Flag for header compression	header_compr		U8
GPRS precedence class	precedence		U16
GPRS delay class	delay		U16
GPRS reliability class	reliability		U16
GPRS peak throughput	peak_throughput		U16
GPRS mean throughput	mean_throughput		U16
Flag for sharing requested bearer conn	shareable		U8

History:

03-Sep-2003   STW   Initial

4.7 Result

Description:

The parameter contains the result of an operation requested by an application.

Definition:

type	short name	Ctrl	Comment
S32	result		Result of the operation

Values:

value	c-macro	Comment
0	DCM_RET_OK	The action has been performed successfully.
1	DCM_RET_NOT_READY	The command can not be processed now.
2	DCM_RET_ALREADY_ACTIVATED	Connection refused because already activated.
3	DCM_RET_UNKNOWN_EVENT	Unknown receipt event
4	DCM_RET_INVALID_PARAMETER	A parameter is wrong.
5	DCM_RET_CMD_PENDING	There is a pending command yet.
6	DCM_RET_PS_CONN_BROKEN	Loose of bearer connection.

History:

03-Sep-2003   STW   Initial

4.8 Error cause

Description:

The parameter contains errors received from PS (ETSI Spec 07.07) or values described below.

Definition:

type	short name	Ctrl	Comment
S32	dcm_err		Error value

History:

03-Sep-2003   STW   Initial