



Technical Document - Confidential

GSM PROTOCOL STACK

G23

FAD - FAX ADAPTOR

Document Number:	6147.710.99.101
Version:	0.2
Status:	Draft
Approval Authority:	
Creation Date:	1999-Jan-18
Last changed:	2015-Mar-08 by XGUTTEFE
File Name:	6147_710.doc

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Change History

Date	Changed by	Approved by	Version	Status	Notes
1999-Jan-18	DL		0.1		1
2003-May-07	XGUTTEFE		0.2	Draft	

Notes:

1. Initial version

Table of Contents

1.1	References	4
1.2	Abbreviations	4
1.3	Terms	4
2	Introduction	4
3	Configuration.....	5
3.1	Headers.....	5
3.2	Dynamic Configuration	5
3.3	Custom-Specific Functions	6
3.4	Monitoring.....	6
	Appendices.....	7
A.	Acronyms	7
B.	Glossary.....	7

List of Figures and Tables

List of References

- [ISO 9000:2000] International Organization for Standardization. Quality management systems - Fundamentals and vocabulary. December 2000

1.1 References

[C_8410.001]	8410.001.98.102; September 18, 1998 G23 Product Description; Condat
[C_8410.008]	8410.008.98.002; June 15, 1998 GTI Interface Description; Condat
[C_8410.003]	8410.003.98.103; September 09, 1998 Test Facilities Description; Condat
[C_8411.103]	8411.103; January 20, 1999 Service Access Point FAD; Condat

1.2 Abbreviations

FAD	Fax Adaptor
MMI	Man Machine Interface
PEI	Protocol Stack Entity Interface
SAP	Service Access Point

1.3 Terms

2 Introduction

G23 is a software package implementing Layers 2 and 3 of the ETSI-defined GSM air interface signaling protocol, and as such represents the part of a GSM mobile station's protocol software which is both, platform and manufacturer independent. Therefore, G23 can be viewed as a building block providing standardized functionality through generic interfaces for easy integration.

The G23 suite of products consists of the following items:

- Layers 2 and 3 for speech & short message services
- Layers 2 and 3 for fax & data services
- Application Control Interface
- Slim MMI [02.30]
- Test and integration support tools

This Technical Documentation document shows how to use the RR object in target systems. It lists the headers involved and describes how to link RR with other components. The customer-specific functions included are listed and described.

For a detailed description of G23 components, please refer to the Product Description [C_8410.001]. For detailed information regarding the integration into the target system, please refer to the Generic Target Interface [C_8410.008]. For detailed information about the compiling and linking procedure, please refer to the User Guide on the delivery CD.

3 Configuration

3.1 Headers

The modules include several header files. Header files which can be changed by the user are marked (*). These header files are used to integrate the protocol stack entities into a specific target system.

ccdapi.h (*)

This header file defines the prototypes and some constants for the Condat Coder Decoder (CCD).

fad.h

This header contains constants for FAD and the component prototypes.

custom.h (*)

This header file defines global constants for the integration of the protocol stack entity into a specific target system. The user may define the identifier of the communication resource, the traces supported, the communications method (by copying primitives or by exchanging references to primitives), the custom-specific primitive, etc.

gsm.h

This header file contains global definitions for all protocol stack entities. Depending on the definitions in custom.h, many options and traces are defined in this header.

pconst.cdg

This header file is generated by the CCD compiler. It includes all primitive identifiers and some constants required by the entities.

pei.h (*)

Prototypes for the protocol stack entity interface are defined in this header file. Some parameters and return types can be changed by the user.

prim.h

Constants for primitives are defined and an SAP-dependent primitive header file is included (p_fad.h).

p_fad.h

This header file is generated by the CCD compiler. It includes the C-struct type definitions for the primitives of the Service Access Point FAD. This header file is included by prim.h.

stddefs.h

This header file contains several standard definitions used by the protocol stack entities.

string.h

This header file is a the standard string header from the target compiler. It defines string and memory functions.

tok.h

Prototypes and some constants for the parse function of the TOK module are defined in this header file.

vsi.h (*)

Prototypes for the virtual system interface are defined in this header file. Some parameters and the return types of these functions can be changed by the user for integration into a specific target system.

3.2 Dynamic Configuration

Dynamic configuration means to change the behavior of the protocol-stack entity at run-time. This is carried out by sending a string with a dedicated format as described in Test Facilities [C_8410.003]. An additional feature is to request the old configuration. This feature can be switched off by an option defined in custom.h.

The dynamic configuration string is a parameter of the `pei_config ()` function, which is part of the protocol stack entity interface (PEI).

3.3 Custom-Specific Functions

Custom-specific functions are implemented in the module `fad_csf.c`. Functions in this module may be replaced by customer functions. However, function parameters may not be changed.

The purpose of custom-specific functions is to provide a mechanism for configuring the protocol stack entity at run-time by a source outside the protocol stack entity, for example, non-erasable memory.

No custom-specific functions are presently defined for FAD.

3.4 Monitoring

The monitor struct includes the relevant physical parameters of the protocol stack entity. The parameters are continuously updated. This way, the environment can always access the protocol stack parameters. These parameters are used to create monitor reports for a display or a test system, to create statistical data outside the functionality of a protocol stack but with access to protocol stack parameters. It is acceptable to read the parameters of the monitor struct, but it is absolutely not acceptable to write to this struct. The first parameter of the monitor struct is the version of the protocol stack entity.

The following monitor struct is defined for the protocol stack entity:

```
typedef struct
{
    T_VERSION    *version;
} T_MONITOR;
```

Appendices

A. Acronyms

DS-WCDMA Direct Sequence/Spread Wideband Code Division Multiple Access

B. Glossary

International Mobile Telecommunication 2000 (IMT-2000/ITU-2000) Formerly referred to as FPLMTS (Future Public Land-Mobile Telephone System), this is the ITU's specification/family of standards for 3G. This initiative provides a global infrastructure through both satellite and terrestrial systems, for fixed and mobile phone users. The family of standards is a framework comprising a mix/blend of systems providing global roaming. <URL: <http://www.imt-2000.org/>>