



Technical Document

GSM PROTOCOL STACK

G23

MBTN – INSTANT GUI-PROBLEM INFORMER

DEVELOPER DESCRIPTION

Document Number:	06-03-53-SLL-003
Version:	0.3
Status:	Draft
Approval Authority:	
Creation Date:	2001-Feb-26
Last changed:	2015-Mar-08 by Ronny Kiessling
File Name:	Mbtn_descriptions.doc

Important Notice

Texas Instruments Incorporated and/or its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products, software and services at any time and to discontinue any product, software or service without notice. Customers should obtain the latest relevant information during product design and before placing orders and should verify that such information is current and complete.

All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment. TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI products, software and/or services. To minimize the risks associated with customer products and applications, customers should provide adequate design, testing and operating safeguards.

Any access to and/or use of TI software described in this document is subject to Customers entering into formal license agreements and payment of associated license fees. TI software may solely be used and/or copied subject to and strictly in accordance with all the terms of such license agreements.

Customer acknowledges and agrees that TI products and/or software may be based on or implement industry recognized standards and that certain third parties may claim intellectual property rights therein. The supply of products and/or the licensing of software does not convey a license from TI to any third party intellectual property rights and TI expressly disclaims liability for infringement of third party intellectual property rights.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products, software or services are used.

Information published by TI regarding third-party products, software or services does not constitute a license from TI to use such products, software or services or a warranty, endorsement thereof or statement regarding their availability. Use of such information, products, software or services may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

No part of this document may be reproduced or transmitted in any form or by any means, electronically or mechanically, including photocopying and recording, for any purpose without the express written permission of TI.

Table of Contents

0	Document Control	4
0.1	Change History	4
0.2	List of Figures and Tables	4
0.3	List of References	4
0.4	Abbreviations	5
0.5	Terms	5
1	Introduction	6
2	Solution	6
2.1	How to plug in	6
2.2	The background	6
3	Known problems and future tasks	7
3.1	Known bugs	7
3.2	„Soon implemented“	7
3.3	„Nice to have“	7

0 Document Control

0.1 Change History

Date	Changed by	Approved by	Version	Status	Notes
2001-Feb-26	RK et al.		0.1		1
2003-May-20	XINTE GRA		0.2	Draft	
2003-Aug-18	RK		0.3	Draft	2

Notes:

1. Initial version
2. New Document Id introduced

0.2 List of Figures and Tables

0.3 List of References

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

[GSM 2.30] ETS 300 511: July 1995 (GSM 02.30 version 4.13.0) Man-Machine Interface (MMI) of the Mobile Station (MS), ETSI

[XPAN] 06-03-36-UDO, xPanel – MMI Test Application (PC) (xpan_userguide.doc)

[MOAN_UG] 06-03-53-UDO, MoanBtn – Instant GUI-problem Informer (mbtn_userguide.doc)

[XM] 06-03-55-UDO, XM –GUI-frontend for GPF m.bat (xm_userguide.doc)

[PCO2] 06-03-35-UDO, PCO2 – Tracing Environment (pco_userguide.doc)

0.4 Abbreviations

ACI	Application Control Interface (AT Commands)
G23	The Condat implementation of Layers 2 and 3 of the GSM Protocol Stack
G23 Target System	Hardware which executes G23
LCD	Liquid Crystal Display
MM	Mobility Management
MMI	Man Machine Interface
MOC	Mobile Originated Call
MTC	Mobile Terminated Call
PC	Personal Computer
PCO	Point of Control and Observation
PIN	Personal Identification Number
RS232	Serial Communication Standard
Target System	Shortened form of 'G23 Target System'

0.5 Terms

Entity	Program which executes the functions of a layer
Message	A message is a data unit which is transferred between the entities of the same layer (peer-to-peer) of the mobile and infrastructure side. Message is used as a synonym to protocol data unit (PDU). A message may contain several information elements.
Primitive	A primitive is a data unit which is transferred between layers on one component (mobile station or infrastructure). The primitive has an operation code which identifies the primitive and its parameters.
Service Access Point	A Service Access Point is a data interface between two layers on one component (mobile station or infrastructure).

1 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/AT Command Interface,
- MMI and MMI Framework (MFW) and
- Test and integration support tools.

The “Moan button” is a utility for instant complainings about a GUI-tool. It will be plugged in by using the shared DLL concept. The main concept of the “Moan button” is to give the user of a GUI-tool an instant possibility to moan about bugs, uncomfortable arrangements a.s.o.

Currently the following GPF-tools support the moan button: PCO2 (see [PCO2]), the xPanel (see [XPAN]), xm (see [XM]), the TapCaller and MSCview (see “\GPF\html\mscview.html”).

This documentation is dedicated to interested developers. For user/customer specific documentation see [MOAN_UG].

2 Solution

2.1 How to plug in

To make your application supporting the “Moan button” you just have to include the “moanbtn.h”-file (in “\GPF\INC\WIN32”) in your main source, call “mbtn_init(”) at start of your program and link with the moanbtn.lib (in “\GPF\LIB\WIN32”).

If the user makes sure that the moanbtn.dll (e.g. in “\GPF\BIN”) is available when starting your application, he can instantly use the “Moan button” (see [MOAN_UG]).

The parameters of “mbtn_init(const char* program, const char* email)” stand for:

- “program” ... name of your application
- “email” ... your email address (address of current developer)

2.2 The background

All sources of the “Moan button” can be found in “\GPF\util\moanbtn” (see “\GPF\readme_aux.txt”).

You'll find sources for the actual DLL and “moanbtn_lib.cpp” which is used for building the import library. This library will first check for the DLL and eventually load it.

The DLL itself uses the MFC for easy GUI-handling and some variables declared as shared (in “moanbtn.cpp”) to allow more then one application to connect to the DLL while showing only one hammer in the system tray.

For building you can either use gnumake with the makefile or the MS-DevStudio project files in subdirectory “MSDev”.

Suitable parameters for the makefile are (listed by “gnumake help”):

- without any parameter ... make release version of DLL and import lib and copy (export) it to “\GPF\BIN”
- dll | lib ... make release version of either the DLL or the import lib and copy (export) it to “\GPF\BIN”
- DEBUG=1 ... make debug version and copy (export) to “\GPF\BIN\debug”
- EXPORT=0 ... don't copy (export) to “\GPF\bin” (“\GPF\BIN\debug”)
- clean | clean_lib | clean_dll ... clean release objects of DLL and/or import lib (with DEBUG=1 clean debug versions)
- checkin ... check in all project files into ClearCase-VOB (with CICMT=<checkin comment> you can specify a checkin comment, “auto checkin” will be used otherwise)

3 Known problems and future tasks

This paragraph is meant to show which bugs are already found (but not removed yet) and to provide an impression of future plans concerning this product.

3.1 Known bugs

- *m_visible* is not secured by a semaphore. It is possible that sometimes after quitting one of at least three running mbtn-supporting applications two of the remaining might **both** “think” that they have to provide the hammer symbol.

3.2 „Soon implemented“

-

3.3 „Nice to have“

-

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/>>