

GSM Protocol Stack



TST-MUX - Multiplexer adaptation to TST

Developers Description

Author: Condat AG
 Alt Moabit 91d
 10559 Berlin
 Germany

Date: February 19, 2001

ID: 8415.xxx.xx.001

Status: being processed

Condat Proprietary Information
NDA – Confidential
Do Not Copy

Table of Contents

0	Document Control.....	3
0.1	Document History.....	3
0.2	References.....	3
0.3	Abbreviations.....	4
0.4	Terms.....	4
1	Overview:	5
2	Solution.....	6
2.1	General overview	6
3	Known problems and future tasks	7
3.1	Known bugs	8
3.2	„Nice to have“	8

0 Document Control

© Copyright Condat AG, 1999–2000.

All rights reserved.

Every effort has been made to ensure that the information contained in this document is accurate at the time of printing. However, the software described in this document is subject to continuous development and improvement. Condat AG reserves the right to change the specification of the software. Information in this document is subject to change without notice and does not represent a commitment on the part of Condat AG. Condat AG accepts no liability for any loss or damage arising from the use of any information contained in this document.

The software described in this document is furnished under a licence agreement and may be used or copied only in accordance with the terms of the agreement. It is an offence to copy the software in any way except as specifically set out in the agreement. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose without the express written permission of Condat AG.

Condat AG
Alt Moabit 91d
10559 Berlin
Germany

Telephone: +49.30.39094-0
Fax: +49.30.39094-300
Internet: <http://www.condat.de>
E-mail: gsm@condat.de

0.1 Document History

ID	Author	Date	Status	Remarks
8415.xxx.xx.001	RK,MP et al.	Feb. 19, 01	Being Processed	Initial

0.2 References

[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

[MUX_CNPT] General concept proposed by MP (gpf_muxdrv_cnpt.doc)

0.3 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'

0.4 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 Overview:

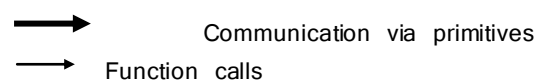
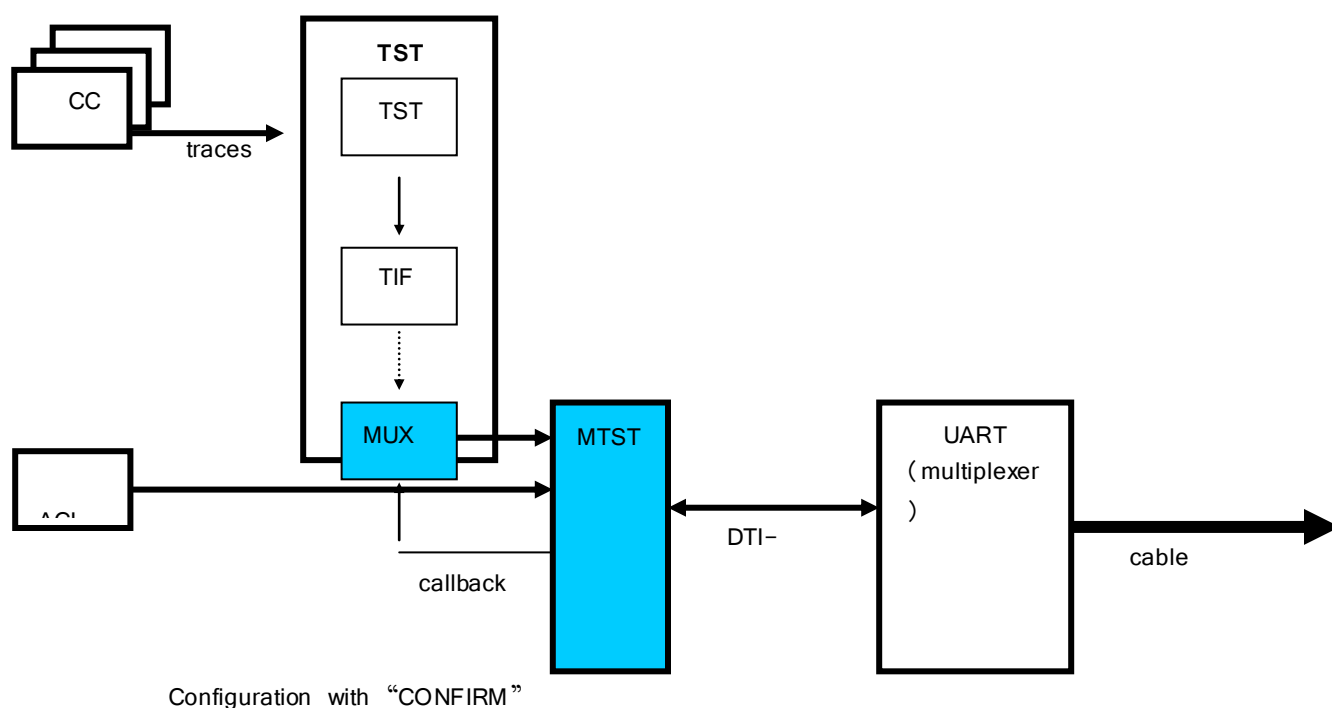
To use the new UART entity (with multiplexing functionality) for the test interface a new driver had to be created. This driver will be inserted in the test interface driver configuration table instead of the SER driver which currently is responsible for the access of the RS232 chip. It communicates with UART using the DTI-SAP-interface.

This documentation is dedicated to interested developers.

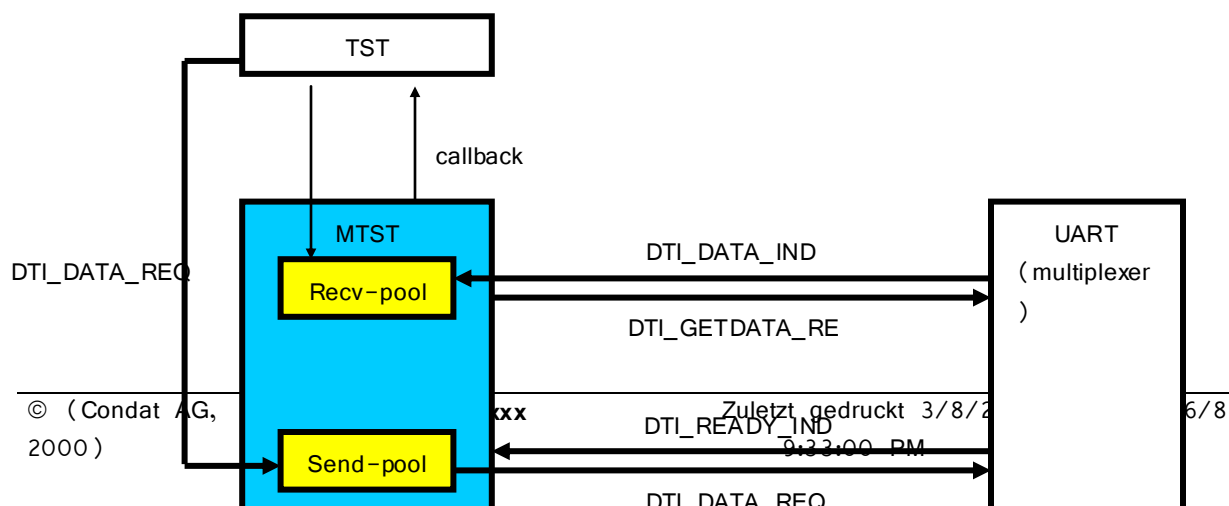
2 Solution

2.1 General overview

The following flow chart should clarify the general procedure:



The next chart shows the communication between MTST and UART in detail:



2.2 Connection/Disconnection with/from UART

To connect the MTST-entity with the UART-entity a special AT-command has to be sent to ACI:
“AT%TRC=1”

This will result in sending a CONFIG-primitive to MTST of this form:

“CONFIG {<partner-entity> <tui> <c_id> | STOP}”

- <partner-entity> ... e.g. UART
- <tui> ...
- <c_id> ...
- STOP ... used for disconnecting

After this UART and MTST will communicate using the DTI interface as described before.

3 Known problems and future tasks

3.1 Known bugs

3.2 „Nice to have“

-