PAS 0001-13-5 V1.0.0 (1997-06)

Publicly Available Specification

TETRAPOL Specifications
Part 13: UDT and ST interface;
SubPart 5: Control and Supervision

Reference

Keywords

Tetrapol

TETRAPOL Secretariat

Postal address: BP 40 78392 Bois d'Arcy CEDEX - FRANCE
Office address: Rue Jean-Pierre Timbaud 78392 Bois d'Arcy CEDEX - FRANCE
Tel.: +33 1 34 60 55 88 - Fax: +33 1 30 45 28 35

Internet

http:// www.tetrapol.com

Contents

Intellectual Property Rights

Foreword

This document is the Publicly Available Specification (PAS) of the TETRAPOL land mobile radio system, which shall provide digital narrow band voice, messaging, and data services. Its main objective is to provide specifications dedicated to the more demanding PMR segment: the public safety. These specifications are also applicable to most PMR networks.

This PAS is a multipart document which consists of:

Part 1 General Network Design

Part 2 Radio Air interface

Part 3 Air Interface Protocol

Part 4 Gateway to X.400 MTA

Part 5 Interface to dispatch centre

Part 6 Line Connected Terminal interface

Part 7 Codec

Part 8 Radio conformance tests

Part 9 Air interface protocol conformance tests

Part 10 Inter System Interface

Part 11 Gateway to PABX, ISDN, PDN

Part 12 Network Management Centre interface

Part 13 User Data Terminal to System Terminal interface

Part 14 System Simulator

Part 15 Gateway to External Data Terminal

Part 16 Security

Part 17 Guide to TETRAPOL features

Part 18 Base station to Radioswitch interface

Part 19 Stand Alone Dispatch Position interface

1. Scope

The purpose of this part is to present the control and supervision functions provided to the applications in the UDT at reference point R2bis as defined in PAS 0001-1-1 [1].

2. Normative references

This PAS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this PAS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] PAS 0001-1-1: "TETRAPOL Specifications; General Network Design; Reference Model".

[2] PAS 0001-13-1: "TETRAPOL Specifications; UDT and ST interface; Overview of UDT architecture".

3. Definitions and abbreviations

3.1. Definitions

For the purposes of this PAS, the following definitions apply:

Data Application Server (DAS): Functional entity in the external system managing IP applications. These applications are also located in the UDT. TETRAPOL SwMI provides IP transmission between UDTs and DASs.

Downlink message: Message transmitted by the SwMI to an ST, then to a UDT.

Uplink message: Message transmitted by a UDT to an ST, then to the SwMI.

3.2. Abbreviations

For the purposes of this PAS, the following abbreviations apply as well as those given in PAS 0001-1-1 [1]:

DLL	Dynamic Link Libra ry
IP	Internet Protocol
LAN	Local Area Network
NDIS	Network Driver Interface Specification
TCP	Transport Connected Protocol
UDP	User Data Protocol
Win32	Windows 32 bits

4. Control and Supervision protocol driver

4.1. Presentation

This driver is a dedicated protocol driver laying on the Microsoft NDIS interface and providing a standard applicative interface through a Win32 DLL.

It allows for some non-standard additional functions, related to the specificity of a radio network. These functions provide Control and supervision information to the UDT applications. Their use is optional and mainly intended for

specific customer applications. Standard applications migrated from a LAN to the UDT shall not make use of these information.

4.2. Description of the CS functions

The UDT applications may:

- get informations related to the ST and the SwMI in order to check if data transmission operates in a nominal mode in the TETRAPOL system or if the network has switched to a fall back mode disabling data transmissions. So, the UDT applications may take defensive actions if data transmission is not operational;

- get a detailed acknowledgement, message by message, indicating the result of the transmission over the ST and the radio medium;

- supervise the ST status: radio address, roaming informations (radio cell location).

- control the ST:
  - activate a data service (initiate/stop the polling service);
  - activate the ST ringing;

- get the translation from a RFSI address to the corresponding IP address and vice versa.

4.3. List of the CS functions

4.3.1. CS Driver load/unload

The function **CsOpen** shall be called by each application, when it is opened. It enables to load the CS driver and intialize a link with the application.

The function **CsOpen** shall be called by each application, when it is opened. It permits to load the CS driver and intialize a link between the two entities for a given serial port. The application shall call **CsOpen** for each serial port it wants control and supervision Informations from.

The function **CsClose** shall be called by the application when it is closed. It enables to remove the link between the application and the CS driver and to unload the CS driver. Calling this function is mandatory. Closing the Windows session shall also involve the call of the CsClose function.

4.3.2. General information about the ST

The function **CsGeneralInformationStart** enables the application to activate the spontaneous delivery of ST general informations. The application is informed of:

- the ST address;
- the ST location each time ST registers in a radio cell.

The function **CsGeneralInformationStop** enables the application to inhibit the spontaneous delivery of ST general informations.

The function **CsGeneralInformationQuery** enables the application to request for ST general informations.

4.3.3. System status

The function **CsMc9600StatusStart** enables the application to activate the spontaneous delivery of the system status. In relation with data transmission, the application is informed of any change in:

- the ST status;
- the Network status.

The function **CsMc9600StatusStop** enables the application to inhibit the spontaneous delivery of the TETRAPOL system status.

The function **CsMc9600StatusQuery** enables the application to request the system status.

4.3.4. ST control

The function **CsMc9600ControlSet** enables the application to do an action on the ST (to ring the ST, to activate the polling service). Upon return a status indicates if the requested action has completed with success or not.

4.3.5. Message acknowledgement

The function **CsMessageAcknowledgementStart** enables the application to activate the spontaneous delivery of acknowledgement of all messages submited to a Protocol driver.

The application gives the protocol mask (it may be SDP, UDP, TCP, or any combination of these three protocols SDP|UDP, TCP|UDP, SDP|TCP, SDP|UDP|TCP) for which acknowledgements are requested (CS driver filters the undesirable acknowledgements).

The application shall filter acknowledgements with regard to concurrent applications using the same Protocol driver.

The CS driver does not guarantee that the order of acknowledgement delivery will be the same that the order of message submission. For this reason, the message is copied in the acknowledgement. Its enables the application to check message by message.

The function **CsMessageAcknowledgementStop** enables the application to inhibit the spontaneous delivery of message acknowledgement.

4.3.6. Address conversion

The function **CsAddressConvQuery** enables the application to get the conversion of the specified address from RFSI to IP format or vice versa. Upon return a status indicates if the conversion has completed with success or not and gives the converted address.

History

Document history		
Date	**Status**	**Comment**
23 May 1997	Version 0.0.1	First version
3 June 1997	Version 0.1.0	Update after review
25 June 1997	Version 1.0.0	Tetrapol Forum Approval