



COVER NOTE TO "T-MOBILE (UK) PUBLIC INTERFACE DECLARATION"

The attached document describes the public interface used by T-Mobile (UK) Limited.

If you have any comments on the document please write to:

Mr A.Wiener
Technical Strategy Manager
T-Mobile
Imperial Place
Maxwell Road
Borehamwood
Hertfordshire
WD6 1EA
England.



T-MOBILE (UK) PUBLIC INTERFACE DECLARATION

SCOPE

This document fulfils the obligation placed on T-Mobile (UK) Limited (T-Mobile) to publish its public interface in accordance with the statutory instrument (SI) which enacts in the UK, Directive 1995/5/EC of the European Parliament and of the Council on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (R&TTE Directive).

The public interface described here is that between the mobile terminal equipment (ME) and the base station equipment (BTS) commonly referred to as the "air interface" and described in article 2, bullet point (e) of the R&TTE Directive.

PURPOSE

This document will describe through references to international standardisation bodies and to proprietary specifications, the interface currently in use in the T-Mobile network for provision of basic services, supplementary services and teleservices.

INTELLECTUAL PROPERTY RIGHTS

Certain parts of this specification make use of third party intellectual property rights and T-Mobile proprietary intellectual property rights. T-Mobile has endeavoured to identify third party IPRs but makes no warranty or representation as to the completeness or accuracy of that information. Anyone relying on this specification should, if in doubt, make his or her own enquiries. Where T-Mobile proprietary IPRs are used in this specification, and consent is needed from T-Mobile for use of those IPRs, that is identified in the specification. For the avoidance of doubt, publication of this specification does not constitute a licence to use third party or T-Mobile IPRs.

Please E-Mail the Corporate Library for further information about this document

DOCUMENT REFERENCE: T-Mobile/CDOC/6124

OWNED BY: Michele Zarri

ISSUE: 3.0

DATE: March, 2002



Turning Information Into Knowledge

© 2002 T-Mobile

T-MOBILE CORPORATE LIBRARY
THIS DOCUMENT WHEN PRINTED WILL BE
DEEMED AS UNCONTROLLED
Printed from: EDMS/WEBSITE

FOR CORPORATE LIBRARY USE ONLY

DISCLAIMER

This document is published solely for the purposes of compliance with the Radio and Telecommunications Terminal Equipment Directive (1999/5/EC) and the instruments implementing it into UK law and T-Mobile's licence (together "the R&TTE"). T-Mobile hereby excludes and disclaims all liability arising out of this document of the use of or reliance on it by any person except that imposed by the R&TTE (if any) including (without limitation) any contractual or tortious liability and whether or not that liability arose out of negligence.

DOCUMENT TABLE OF CONTENTS

SCOPE	1
PURPOSE	1
INTELLECTUAL PROPERTY RIGHTS	1
DISCLAIMER	2
ATTACHMENTS.....	ERROR! BOOKMARK NO
REFERENCES	4
GLOSSARY.....	5
Abbreviations.....	5
1. GENERAL.....	7
2. NETWORK TERMINATION POINT.....	7
3. STANDARDISED GSM INTERFACES.....	7
3.1 PHYSICAL CHARACTERISTICS OF THE INTERFACE.....	7
3.2 CALL CONTROL PROCEDURES	7
3.3 SERVICES OFFERED	7
3.3.1 Bearer Services	7
3.3.2 Teleservices	8
3.3.3 Supplementary services.....	8
3.3.3.1 eMLPP	9
3.3.3.2 CLIP	9
3.3.3.3 CLIR	9
3.3.3.4 CFU	9
3.3.3.5 CFB.....	9
3.3.3.6 CFNRy.....	9
3.3.3.7 CFNRc	9
3.3.3.8 CW.....	9
3.3.3.9 HOLD	9
3.3.3.10 UUS.....	9
3.3.3.11 BAIC.....	10
3.3.3.12 BAOC.....	10
3.3.3.13 BOIC-exHC.....	10
3.3.3.14 BOIC.....	10
3.3.3.15 BIC-Roam.....	10
3.3.3.16 USSD.....	10
3.4 SIM INTERFACE.....	10
4. ADDITIONAL T-MOBILE INTERFACES.....	11
4.1 COMMON PCN HANDSET SPECIFICATION (CPHS).....	11
4.1.1 Specific T-Mobile requirements	11
4.2 WAP HANDSET REQUIREMENTS	11
4.3 J2ME-MIDP HANDSET REQUIREMENT	11
4.3.1 Configuration and profiles	11
4.3.2 Download mechanisms.....	11
4.3.3 Proprietary API.....	11

5. SUGGESTED TESTS	11
6. ADDITIONAL REGULATORY REQUIREMENTS	12
ANNEX A: COMMON PCN HANDSET SPECIFICATION	12
DOCUMENT HISTORY	14

REFERENCES

References are either specific (identified by date of publication, edition number, version number etc.) and in this case subsequent revisions do not apply, or non-specific, in this case the latest version apply.

- [1.] GSM 01.04: "Digital Cellular telecommunications system (Phase 2+); Abbreviations and acronyms", ETSI
- [2.] GSM 05.01: "Physical layer on the radio path; General description", ETSI
- [3.] GSM 05.02: "Multiplexing and Multiple Access on the Radio Path", ETSI
- [4.] GSM 05.03: "Channel Coding", ETSI
- [5.] GSM 05.04: "Modulation", ETSI
- [6.] GSM 05.05: "Radio Transmission and Reception" (MS), ETSI
- [7.] GSM 05.08: "Radio Transmission and Reception" (BTS), ETSI
- [8.] GSM 05.10: "Radio Subsystem Synchronisation", ETSI
- [9.] GSM 04.08: "Mobile Radio Interface Layer 3 specification Core Network Protocols stage 2 (structured procedures)", ETSI
- [10.] GSM 02.67: "Enhanced Multi-Level Precedence and Pre-emption Service – Stage 1", ETSI
- [11.] GSM 03.67: "Enhanced Multi-Level Precedence and Pre-emption Service – Stage 2", ETSI
- [12.] GSM 04.67: "Enhanced Multi-Level Precedence and Pre-emption Service – Stage 3", ETSI
- [13.] GSM 02.81: "Line Identification Supplementary Service – Stage 1", ETSI
- [14.] GSM 03.81: "Line Identification Supplementary Service – Stage 2", ETSI
- [15.] GSM 04.81: "Line Identification Supplementary Service – Stage 3", ETSI
- [16.] GSM 02.82: "Call Forwarding Supplementary Service – Stage 1", ETSI
- [17.] GSM 03.82: "Call Forwarding Supplementary Service – Stage 2", ETSI
- [18.] GSM 04.82: "Call Forwarding Supplementary Service – Stage 3", ETSI
- [19.] GSM 02.83: "Call Waiting (CW) and Call Hold (HOLD) Supplementary Service – Stage 1", ETSI
- [20.] GSM 03.83: "Call Waiting (CW) and Call Hold (HOLD) Supplementary Service – Stage 2", ETSI
- [21.] GSM 04.83: "Call Waiting (CW) and Call Hold (HOLD) Supplementary Service – Stage 3", ETSI
- [22.] GSM 02.87: "User to User Signalling (UUS) Supplementary Services – Stage 1", ETSI
- [23.] GSM 03.87: "User to User Signalling (UUS) Supplementary Services – Stage 2", ETSI
- [24.] GSM 04.87: "User to User Signalling (UUS) Supplementary Services – Stage 3", ETSI
- [25.] GSM 02.88: "Call Barring (CB) Supplementary Services – Stage 1", ETSI
- [26.] GSM 03.88: "Call Barring (CB) Supplementary Services – Stage 2", ETSI
- [27.] GSM 04.88: "Call Barring (CB) Supplementary Services – Stage 3", ETSI
- [28.] GSM 02.90: "Unstructured Supplementary Service Data (USSD) – Stage 1", ETSI
- [29.] GSM 03.90: "Unstructured Supplementary Service Data (USSD) – Stage 2", ETSI
- [30.] GSM 04.90: "Unstructured Supplementary Service Data (USSD) – Stage 3", ETSI
- [31.] GSM 11.11: "Specification of the Subscriber Identity Module - Mobile Equipment (SIM-ME) Interface", ETSI
- [32.] "Common PCN Handset Specification – CPHS Phase 2", PCN Association
- [33.] GSM 03.14: "Support of Dual Tone Multi Frequency (DTMF) signalling", ETSI
- [34.] GSM 11.10-1: "Conformance Specification", ETSI
- [35.] GSM 11.10-2: "Mobile Station (MS) Conformance Specification, Part 2 – ICS", ETSI
- [36.] GSM 11.10-3: "Mobile Station (MS) Conformance Specification, Part 3 – Abstract Test suites", ETSI

- [37.] European Community Directive 73/23/EEC, OJ L 77, 26.3.1973, p. 29
- [38.] European Community Directive 89/33/EEC, OJ L 139, 23.5.1989, p. 19
- [39.] "Certification Criteria", GSM Certification Forum
- [40.] GSM 02.02: "Bearer Services Supported by a GSM PLMN", ETSI
- [41.] GSM 09.06: "Interworking between a PLMN and the ISDN or PSTN for support of Packet Switched data transmission services", ETSI
- [42.] GSM 02.03: "Teleservices Supported by a GSM Public Land Mobile Network (PLMN)", ETSI
- [43.] GSM 04.11: "Point-to-Point (PP) Short Message Service (SMS) Support on Mobile Radio Interface", ETSI,
- [44.] GSM 03.40: "Technical realisation of SMS Point to Point", ETSI
- [45.] GSM 02.04: "General on Supplementary Services", ETSI
- [46.] GSM 03.11: "Technical Realization of Supplementary Services - General Aspects", ETSI
- [47.] GSM 04.80: "Mobile radio Layer 3 Supplementary Service specification - Formats and coding". ETSI
- [48.] GSM 02.60: "General Packet Radio Service (GPRS) Service description; Stage 1", ETSI
- [49.] GSM 03.60: "General Packet Radio Service (GPRS) Service description; Stage 2", ETSI
- [50.] GSM 03.46: "Technical Realisation of Facsimile Group 3 Service – non transparent", ETSI
- [51.] GSM 02.03: "Circuit Teleservices supported by a Public Land Mobile Network (PLMN)", ETSI
- [52.] GSM 03.38: "Alphabets & Language", ETSI
- [53.] WAP 1.1 specifications.
- [54.] "UK Radio Licence Interface Requirement, First and Second Generation Public Cellular Radiotelephone Services Operation in all Frequency Bands Administered by the Radiocommunications Agency", Radiocommunications Agency, UK
- [55.] 3GPP TS 23.140: "Technical realization of the Short Message Service (SMS)", 3GPP

NOTES:

References to ETSI documents can be find on the ETSI Server at the following URL: <http://www.etsi.org>

Reference 39 can be obtained from the GSM Association web page: <http://www.industry.gsm.org>

References 37 and 38 can be found for example at the following URL: <http://www.forum.europa.eu.int>

Reference 53 consists of a set of documents that can be found at the following URL:

http://www.wapforum.org/what/technical_1_1.htm

Some GSM Specifications have been transferred to 3GPP from Release 1999 onwards. The web site <http://www.3gpp.org> defines the modified document numbering scheme.

Reference 54 can be obtained at <http://www.radio.gov.uk>

GLOSSARY

Abbreviations

3GPP	Third Generation Partnership Project
AoCC	Advice of Charge (Charging)
AoCI	Advice of Charge (Information)
BAIC-roam	Barring of all International Calls when roaming
BAOC	Barring of All Outgoing Calls
BOIC	Barring of Outgoing International Calls
BOIC-ex HC	Barring of Outgoing International Calls except those directed to the HC
BTS	Base Transceiver Station
CCBS	Completion of Call to Busy Subscriber
CD	Call Deflection
CFB	Call Forwarding on mobile subscriber Busy
CFNRc	Call Forwarding on mobile subscriber Not Reachable
CFNRy	Call Forwarding on No Reply
CFU	Call Forwarding Unconditional
CLIP	Calling Line Identity Presentation

CLIR	Calling Line Identity Restriction
CPHS	Common PCN Handset Specification
CS	Circuit Switched
CUG	Closed User Group
CW	Call Waiting
DCS1800	Digital Communication System, alternative name of GSM1800
DTMF	Dual Tone Multi Frequency
ECT	Explicit Call Transfer
eMLPP	enhanced Multi Level Precedence and Pre-emption
GPRS	Global Packet Radio Service
GSM	Global System for Mobile communications
GSM1800	Global System for Mobile communications operating in the 1800MHz frequency, synonymous with the acronym DCS1800
HC	Home Country
HOLD	Call Hold
IPR	Intellectual Property Rights
ME	Mobile Equipment
MPTY	Multi Party
MS	Mobile Station
NT	Non transparent
OSI	Open System Interface
PCN	Personal Communication System
R&TTE	Radio and Telecommunications Terminal Equipment
SI	Statutory Instrument
SIM	Subscriber Identity Module
SMS	Short Message Service
T	Transparent
UDI	Unrestricted Digital Information
URL	Universal Resource Locator
USSD	Unstructured Supplementary Service Data
UUS	User to User Signalling
WAP	Wireless Application Protocol

1. GENERAL

The specification of the air interface deployed by T-Mobile (UK) Limited. is based on ETSI GSM 1800. This is described in section 2 below. In addition terminals are required to implement the common PCN handset specification (CPHS) [32] which is described in section 3. Section 4 contains recommendations on test suites that manufacturers should carry out to comply with the essential requirements of the R&TTE directive. Section 4 also recommends tests which should be conducted to ensure the terminal performs correctly with the network.

2. NETWORK TERMINATION POINT

The network termination point for the public interface defined in this document is the antenna connector of the mobile equipment (ME).

3. STANDARDISED GSM INTERFACES

3.1 PHYSICAL CHARACTERISTICS OF THE INTERFACE

The physical characteristics of the GSM air interface are described in the 05 series of the ETSI GSM specifications. In particular, multiplexing and multiple access on the radio path are in 05.02 [3], channel coding in 05.03 [4], modulation in 05.04 [5], radio transmission and reception in 05.05 [6] and 05.08 [7] for mobile stations and base transceiver stations respectively, radio subsystem synchronisation in 05.10 [8].

T-Mobile is licensed to operate only in the GSM 1800 MHz band, so the relaxations defined in [6] for GSM 400 MS and GSM 900 MS shall not be used.

3.2 CALL CONTROL PROCEDURES

The call control, mobility management, connection management mechanisms used in the T-Mobile network is described in [9]. This document covers the procedures for layer 2 and 3 of the OSI model.

3.3 SERVICES OFFERED

The services offered on the air interface by the T-Mobile network are as follows

3.3.1 Bearer Services

The set of bearer services offered by the T-Mobile GSM air interface is described in 02.02 [40] and 09.06 [41] for the data bearers. The T-Mobile network supports the bearer services described in this table

Bearer Service Number	Bearer Service Name	Access Structure	Access Rate	Information Transfer Capabilities	QoS attribute
20	Asynchronous General Bearer Service	Asynch	Refer to Sub clause 3.1 of [40]	Refer to Sub clause 3.1 of [40]	Refer to Sub clause 3.1 of [40]
21	Asynchronous 300 bps	Asynch	300 bps	UDI or 3.1 KHz	T or NT

22	Asynchronous 1.2 kbps	Asynch	1.2 kbps	UDI or 3.1 KHz	T or NT
23	Asynchronous 1200/75 bps	Asynch	1200/75 bps	UDI or 3.1 KHz	T or NT
24	Asynchronous 2.4kbps	Asynch	2.4 kbps	UDI or 3.1 KHz	T or NT
25	Asynchronous 4.8 kbps	Asynch	4.8 kbps	UDI or 3.1 KHz	T or NT
26	Asynchronous 9.6 kbps	Asynch	9.6 kbps	UDI or 3.1 KHz	T or NT
70	GPRS	Asynch	Variable	UDI	T or NT

T-Mobile supports GPRS bearer service as described in references [48], [49].

3.3.2 Teleservices

In addition to the telephony service, the other teleservices offered by the T-Mobile on the GSM air interface are:

- SMS (Short Message Service) MO/PP and MT/PP. The service is implemented as described in GSM 02.03 [42], 04.11 [43] and 03.40 [44].
- DTMF as specified in 03.14 [33]
- Emergency calls as described in A.1.2 of [51]
- Automatic Facsimile group 3, NT as specified in [50]
- T-Mobile network offers the enhanced message service (EMS) both mobile originated (MO-) and mobile terminated (MT-) as specified in 3GPP TS 23.040 [55]

3.3.3 Supplementary services

Definition of services in GSM follows the 3-stage service methodology originally developed for the standardisation of the ISDN. This approach requires a detailed Stage 1 Service, a technical realisation Stage 2 and a description of the procedures Stage 3.

Definitions and descriptions of supplementary services defined for GSM are given in GSM 02.04 [45], the GSM 02.8x-series and GSM 02.9x-series. The technical realisation of the supplementary services is described in GSM 03.11 [46] and GSM 03.8x and GSM 03.9x-series.

The GSM 04.8x-series and GSM 04.9x-series specify the procedures used in the radio interface for normal operation, registration, erasure, activation, deactivation, invocation and interrogation of supplementary services. Provision and withdrawal of supplementary services is an administrative matter between the mobile subscriber and the service provider and cause no signalling on the radio interface.

GSM 04.08 [9] and GSM 04.80 [47] specify the formats and coding for the supplementary services. The functional protocol is based on the use of the Facility information element which is transported specific functional messages specified in GSM 04.80 [47].

3.3.3.1 eMLPP

Enhanced Multi-Level Precedence and Pre-emption service. This service is provided as specified in 02.67 (Stage 1) [10], 03.67 (Stage 2) [11], 04.67 (Stage 3) [12]

3.3.3.2 CLIP

Calling Line Identity Presentation. This service is provided as specified in 02.81 (Stage 1) [13], 03.81 (Stage 2) [14] and 04.81 (Stage 3) [15].

3.3.3.3 CLIR

Calling Line Identity Restriction. This service is provided as specified in 02.81 (Stage 1) [13], 03.81 (Stage 2) [14] and 04.81 (Stage 3) [15].

3.3.3.4 CFU

Call Forwarding Unconditional. This service is provided as specified in 02.82 (Stage 1) [16], 03.82 (Stage 2) [17] and 04.82 (Stage 3) [18].

3.3.3.5 CFB

Call Forwarding on Mobile Subscriber Busy. This service is provided as specified in 02.82 (Stage 1) [16], 03.82 (Stage 2) [17] and 04.82 (Stage 3) [18].

3.3.3.6 CFNRy

Call Forwarding on No Reply. This service is provided as specified in 02.82 (Stage 1) [16], 03.82 (Stage 2) [17] and 04.82 (Stage 3) [18].

3.3.3.7 CFNRc

Call Forwarding on Mobile Subscriber Not Reachable. This service is provided as specified in 02.82 (Stage 1) [16], 03.82 (Stage 2) [17] and 04.82 (Stage 3) [18].

3.3.3.8 CW

Call Waiting. This service is provided as specified in 02.83 (Stage 1) [19], 03.83 (Stage 2) [20] and 04.83 (Stage 3) [21].

3.3.3.9 HOLD

Call Hold. This service is provided as specified in 02.83 (Stage 1) [19], 03.83 (Stage 2) [20] and 04.83 (Stage 3) [21].

3.3.3.10 UUS

User to User Signalling. This service is provided as specified in 02.87 (Stage 1) [22], 03.87 (Stage 2) [23] and 04.87 (Stage 3) [24].

3.3.3.11 BAIC

Barring of All International Calls. This service is provided as specified in 02.88 (Stage 1) [25], 03.88 (Stage 2) [26] and 04.88 (Stage 3) [27].

3.3.3.12 BAOC

Barring of All Outgoing Calls. This service is provided as specified in 02.88 (Stage 1) [25], 03.88 (Stage 2) [26] and 04.88 (Stage 3) [27].

3.3.3.13 BOIC-exHC

Barring of Outgoing International Calls except those directed to the home public land mobile network. This service is provided as specified in 02.88 (Stage 1) [25], 03.88 (Stage 2) [26] and 04.88 (Stage 3) [27].

3.3.3.14 BOIC

Barring of Outgoing International Calls. This service is provided as specified in 02.88 (Stage 1) [25], 03.88 (Stage 2) [26] and 04.88 (Stage 3) [27].

3.3.3.15 BIC-Roam

Barring of all Incoming Calls while roaming. This service is provided as specified in 02.88 (Stage 1) [25], 03.88 (Stage 2) [26] and 04.88 (Stage 3) [27].

3.3.3.16 USSD

Unstructured Supplementary Service Data. This service is provided as specified in 02.90 (Stage 1) [28], 03.90 (Stage 2) [29] and 04.90 (Stage 3) [30].

3.4 SIM INTERFACE

The interface between the Subscriber Identity Module (SIM) and the Mobile Equipment (ME) is realised in the T-Mobile network as described in reference [31] from Release 97 onwards.

4. ADDITIONAL T-MOBILE INTERFACES

4.1 COMMON PCN HANDSET SPECIFICATION (CPHS)

See annex A for the full technical specification.

Note that there are the following deviations from the technical specification.

4.1.1 Specific T-Mobile requirements

T-Mobile doesn't offer the Alternate Line Service.

In Section B.3.1, the support for Information Numbers is mandatory.

4.2 WAP HANDSET REQUIREMENTS

T-Mobile network supports Circuit Switched WAP and WAP over GPRS [53]. A full specification suite can be found at the following Internet address:

<http://www1.wapforum.org/tech/>.

4.3 J2ME-MIDP HANDSET REQUIREMENT

4.3.1 Configuration and profiles

MID (Mobile Information Device) shall be fully compliant to CLDC 1.0.2 or at least CLDC 1.0 according the JSR30 [CLDC] and shall be fully compliant to MIDP 1.0 according to JSR37[MIDP].

4.3.2 Download mechanisms

OTA following Over The Air User Initiated Provisioning [JSR118] shall be supported..

4.3.3 Proprietary API

Any proprietary or extended APIs have to be submit to one2one, better in JavaDoc format, especial those potentially raise security issues like MT SMS, Data Call, and etc

5. SUGGESTED TESTS

This section contains a list of suggested tests that the manufacturer of apparatus can carry out to comply with the essential requirements applicable to the telecommunications terminal equipment. The essential requirements are listed in article 3 of the R&TTE Directive.

Without prejudice to the generality of the requirement of the above, specifically the Terminal Unit must;

never subject the user, or any other person, to radiated field strengths which exceed the basic restriction for general public exposure as described by ICNIRP (International Commission on non-ionizing radiation protection – 'Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to

300 Ghz)' Health Physics, April 1998, Vol 74, Number 4 table 4. This applies to all operating conditions (e.g. multi-timeslot operation).

T-Mobile recommends the test suites outlined in the European Community Directives [37] (safety requirements, but with no low voltage limits), [38] (electromagnetic compatibility), [34], [35] and [36] (conformance specifications). In order to ensure the correct performance of the terminal with the network, T-Mobile also recommends the tests specified in [39].

6. ADDITIONAL REGULATORY REQUIREMENTS

It is required by the Wireless Telegraphy Act 1949 that no radio equipment is installed or used in the UK except under the authority of a licence granted by or otherwise exempted by regulations made by the Secretary of State. It is a condition of such a licence or exemption regulations as appropriate that the equipment must meet the minimum requirements specified in the UK Interface Requirement [54] for stated equipment types and for the stated frequency bands.

ANNEX A: COMMON PCN HANDSET SPECIFICATION



COMMON PCN HANDSET SPECIFICATION

CPHS Phase 2

Version Number: 4.2
 Date of Issue: 27 February 1997
 Document Reference: CPHS4_2.WW6

The information contained in this specification is subject to the terms and conditions of the letter of agreement under which the specification is supplied to the Recipient's organisation.

None of the information contained in this specification shall be disclosed outside the Recipient's own organisation without the prior written permission of a duly authorised representative of the Association of European PCN Operators ("The Association"), unless the terms of the letter of agreement permit such disclosure.

No part of the specification may be reproduced, or transmitted in any way, or stored in any retrieval system, without the prior written approval of a duly authorised representative of The Association.

Save as described above, none of the information contained in this document shall be used by the Recipient's organisation, nor disclosed to any third party without the prior written permission of a duly authorised representative of The Association.

The Association or any of its members shall not be liable for any form of indirect consequential or special loss of profit, data, business or business opportunity howsoever occurring.

The Recipient of this specification shall be responsible for ensuring that any item of work arising from the use of the specification shall not infringe any third party intellectual or industrial property rights. The Recipient shall indemnify The Association and each member of The Association against all costs, expenses and or liability arising in respect of any infringement or alleged infringement of a third party's intellectual or industrial property rights.

Copyright (c) PCN Association {1997}
 All Rights Reserved

Authors		
Name	Organisation	Fax
Tim Haysom	Orange PCS Ltd.	+44 1454 618501
Richard Williams	One 2 OnePersonal Communications Ltd.	+44 181 214 2898
Current Editor:	Orange PCS Ltd.	

Copies of this specification are available in .PDF format (requires Adobe Acrobat reader) or on paper.
 For additional copies, please contact either author.

