
PNO-ISC Information Document Number 007 UK Interconnect use of SCCP

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National foreword

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This Published Document contains ISC references to other documents, which are planned to be published as Published Documents. The following list cross-references these against current and future PD publications:

PD 6625	PNO-ISC/SER/001
PD 6626	PNO-ISC/SER/003
PD 6638	PNO-ISC/SPEC/003
PD 6650	PNO-ISC/SPEC/004
PD 6647	PNO-ISC/INFO/001

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Summary of pages

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UK INTERCONNECT USE OF SCCP

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0.2 NORMATIVE INFORMATION

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0.4 HISTORY

Revision	Date of Issue	Updated By	Description
Issue 1	January 1998	PNO-ISC Editors	First Issue
Issue 2	July 1998	Mike Luntz, Vodafone	Editorials & changes to 4.2.2.1 and 5.4.4 re NAI value 126. Update to BSI format.

0.5 ISSUE CONTROL

SECTION	ISSUE	DATE
All	Issue 2	July 1998

0.6 REFERENCES

- /1/ PNO-ISC/SER/001 Issue 1, Draft A UK Completion of Calls to Busy Subscriber (CCBS) Supplementary Service. Combined Service Description and Functional Description
- /2/ PNO-ISC/SER/003 UK Geographic Number Portability (GNP) Supplementary Service
- /3/ PNO-ISC/SPEC/003 Issue 1, Draft F.1 C7 INTERCONNECT SIGNALLING CONNECTION CONTROL PART (SCCP)
- /4/ PNO-ISC/SPEC/004 Issue 1, Draft D. C7 INTERCONNECT TRANSACTION CAPABILITIES
- /5/ PNO-ISC/INFO/001 Issue 1, Draft A POINT CODES - MANAGEMENT AND ALLOCATION BETWEEN UK PTOS
- /6/ ETS 300 134: December 1992 Transaction Capabilities (TC) signalling requirements in and between networks, for non circuit related services which use the CCITT Signalling System No.7, for inter-network dialogues
- /7/ ETS 300 356-18: February 1995 Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 18: Completion of Calls to Busy Subscriber (CCBS) supplementary service
- /8/ ITU-T Q.713 (07/96) SCCP Formats and Codes
- /9/ ITU-T Q.714 (3/93) SCCP Procedures
- /10/ ITU-T Q.715 (07/96) SCCP User Guide
- /11/ Geographic Number Portability Process Manual Issue 4.0 authored by the Geographic Number Portability Working Group as Ref CMC0155-1201-3-00004
- /12/ ITU-T Q.711 (07/96) SCCP Functional Description
- /13/ PNO-IG/MNPTG UK Mobile Number Portability Draft Specification Issue 1

0.7 GLOSSARY OF TERMS

0.7.1 Abbreviations

BSSAP	Base Station Subsystem Application Part
C7	CCITT Signalling System Number 7
CC	Country Code
CCBS	Completion of Calls to Busy Subscriber (Service)
CLI	Calling Line Identification
CPN	Called Party Number

DPC	Destination Point Code
CR	Circuit Related
ETSI	European Telecommunications Standards Institute
ETS	European Telecommunications Standard
GN	Generic Number
GSM	Global System for Mobile communications
GT	Global Title
GTAI	Global Title Address Information
GTI	Global Title Indicator
ISC	Interconnect Standards Committee
ISDN	Integrated Services Digital Network
ISUP	Integrated Services User Part (of C7)
INAP	Intelligent Network Application Protocol (of C7)
ITCC	International Telecommunications Charge Card (Service)
ITU	International Telecommunications Union
ITU-T	ITU Telecommunications Standardization Sector
MNP	Mobile Number Portability
MPOI	MTP Points Of Interconnect
MTP	Message Transfer Part (of C7)
NCR	Non Circuit Related
NDC	National Dialling Code
NICC	Network Interoperability Consultative Committee
NNG	National Number Group
NSN	National Significant Number
NTP	Network Termination Point
O&M(BSS)	Operations and Maintenance (Base Station Subsystem)
OMAP	Operations, Maintenance and Administration Part (of C7)
PC	Point Code
PCI	Point Code Indicator
PNO	Public Network Operators
PPOI	Physical Point Of Interconnect
PTO	Public Telecommunications Operator(s)
RI	Routing Indicator
SCCP	Signalling Connection Control Part (of C7)
SP	Signalling Point
SPOI	SCCP Point Of Interconnect
SSN	Subsystem Number
SSNI	Subsystem Number Indicator
TC	Transaction Capabilities (of C7) (was TCAP)
TCAP	TC Application Part (of C7) (now just TC)
UDT	Unitdata (message)
UDTS	Unitdata service (message)
UK	United Kingdom of Great Britain and Northern Ireland

0.7.2 Terminology

The following definitions apply;

Called Party - The SCCP user to which the SCCP message is directed.

Calling Party - The SCCP user initiating the SCCP message.

Cross-border network - that part of the UK network where point codes are allocated from the common (interworking) range defined by ISC /5/.

Global Title - an element of called and calling party addresses having its inclusion and content signalled by the coding of the global title indicator.

Incoming Network - The network to which an SCCP message is passed from a point of interconnection between two networks.

Originating Network - The network in which the Calling Party resides.

Outgoing Network - The network from which an SCCP message is passed to a point of interconnection between two networks.

Terminating Network - The network in which the Called Party resides.

White Book - The ITU-T(03/93) Recommendations.

0.8 SCOPE

The information provided in this document covers provision and use of the interconnect SCCP specified in /3/; this being a subset of the ITU-T(03/93) SCCP recommendations which satisfies the SCCP requirements of the CCBS service specified in /1/. The subset is in essence for the connectionless service class of SCCP using Global Title Indicator GTI=4. The subset has no requirement for segmenting and re-assembly, or subsystem status management procedures associated with point code plus subsystem number addressing.

There are known difficulties in future enhancement of the SCCP specified in /3/ to provide a more complete White Book capability. Such development will have to take account of:

- continuing international requirements for Blue Book compatibility
- the need for the hop counter to be set at a value suitable for all applications
- the inability of applications using SCCP to know what network capabilities are available towards destinations.

These are the subject of current studies within the PNO-ISC (MTP/SCCP WP).

1. INTRODUCTION

This document provides specific information supplemental to that specified in /3/ for interconnect use of SCCP signalling between public networks operated in the UK. Also included is a section describing the architectural options for provisioning such interconnect,

The information is intended for use by designers of applications which require use of SCCP as well as by network operators needing to engineer SCCP networks and configure those applications for network interconnect.

The information provided states the definitive requirements relating to those services which are standardised in the UK for national interconnect and dependent upon the application of SCCP for their operation. In particular the address codes standardised for use in the UK are listed. The International and UK network operator addressing assignments are also included in order to minimise the possibility of conflict when the capability of the UK national interconnect is extended.

Definitive requirements are specified for the interconnect use of SCCP as needed for the UK CCBS service to perform and function as intended in /1/. Advisory information is documented for other aspects of SCCP use made known to the ISC.

The document will be revised when necessary and in accordance with the NICC/PNO-ISC workplan to include information appropriate to enhancements to SCCP and additional services having a requirement to use SCCP.

2. REQUIREMENTS ON APPLICATIONS MAKING USE OF SCCP

This section identifies and gives information on the parameters to be provided to SCCP and options to be set by the application for correct operation of the underlying SCCP layer.

Use of SCCP service and management primitives is described in line with their use in /12/ where this may be helpful to aiding the understanding. This document has no requirement for implementation of such primitives.

2.1 SCCP Return message on error procedure

The SCCP connectionless class of service specified in /3/ provides the application using SCCP with the ability to transfer signalling messages via the signalling network without setup of a signalling connection. Under certain conditions of network congestion, and unavailability of subsystems supporting the application and/or signalling points, SCCP connectionless messages could be discarded instead of being delivered. SCCP provides a return on error procedure as a means for the application to be informed about messages that SCCP cannot route to the end destination. If the application using SCCP wishes to use the SCCP Return message on error procedure, the Return Option parameter must be provided to SCCP. If the Return Option parameter is not provided to SCCP by the application then no error information will be provided by SCCP to the application.

When routing on Global Title, the return message on error procedure is the only way for the application using SCCP to be informed of messages encountering routing problems, and is a valuable means of receiving information quickly about routing problems in the network.

Applications shall always provide the Return Option parameter to SCCP. Wherever possible, applications shall take appropriate action on the Reason for Return parameter provided from SCCP.