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**INTEGRATED SERVICES DIGITAL
NETWORK (ISDN)**

**OVERALL NETWORK ASPECTS
AND FUNCTIONS**

**PRINCIPALS RELATING ISDN
NUMBERS/SUBADDRESSES TO
THE OSI REFERENCE MODEL NETWORK
LAYER ADDRESSES**

ITU-T Recommendation I.334

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation I.334 was published in Fascicle III.8 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2 In this Recommendation, the expression “Administration” is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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Recommendation I.334

PRINCIPLES RELATING ISDN NUMBERS/SUBADDRESSES TO THE OSI REFERENCE MODEL NETWORK LAYER ADDRESSES

(Melbourne, 1988)

1. Introduction

Recommendation X.200, covering the open systems reference model, applies the term "address" to identify service access points at each layer. With respect to the network layer, a service access point may be identified by an ISDN number/subaddress. This Recommendation is provided to clarify the concepts and terminology which relate ISDN numbers and subaddresses to one another and to OSI reference model network layer addresses.

1.1 Basic relationships

The essential purpose of the network layer is to achieve routing of information within the Open Systems Interconnection (OSI) environment. To that purpose it may be useful to establish a correspondence between an ISDN address (ISDN number, possibly with subaddress) and an X.200 network layer service access point. However, an ISDN address may in some instances identify an end-system not conforming to the OSI model. In such cases the format and syntax of the subaddress are available for user-specific purposes. Section 2 summarizes the coding agreements which allow this flexibility. (The publication of the summary in this Recommendation is for information only and does not indicate administrative responsibility for contents nor assure current status of the material presented.)

1.2 NSAPs and ISDN addresses

The ISDN address (ISDN number, possibly with subaddress) may include the OSI network layer address and thereby offer means to identify Network Service Access Points (NSAPs). Figure 1/I.334 shows the three cases, a), b) and c) below, relating an ISDN address to a particular OSI NSAP address.

For completeness, references to protocol elements are included in the three cases which follow. For circuit mode access, the calling/called subaddress information elements associated with the Q.931 SET-UP message are used to transmit subaddress information, while the X.25 address extension field serves this purpose for packet mode access. For interoffice circuit mode calls, the Q.931 subaddress information elements may be transmitted within the access transport parameter of the Signalling System No. 7 (S.S. No. 7) initial address message. On packet mode internetwork calls, the X.75 address extension field is available to carry subaddress information.

The components of the OSI NSAP address are the AFI (Authority and Format Identifier), the IDI (Initial Domain Identifier) and possibly the DSP (Domain Specific Part) (see also § 3).

- a) The OSI NSAP address is comprised only of an AFI IDI, in which the IDI is semantically identical to the ISDN number. There is no DSP. A terminal can do one of the following:
 - a1) The entire NSAP is carried in the subaddress field; or
 - a2) If the conditions in § 1.3.1 are satisfied, the NSAP address can be inferred from the E.164 number.

Note - For circuit mode calls, the semantic content of the AFI may be contained in the numbering and addressing plan identification in the Q.931 or S.S. No. 7 calling/called address protocol elements. For packet mode calls, similar information may be found in the X.25/X.75 protocol. Until such time as a protocol mechanism for identifying the numbering plan and the type of number is implemented in X.25/X.75, analogous to that which exists in Q.931/S.S. No. 7, such information may be derivable from the X.25/X.75 address fields which may include a numbering plan escape code. It may also be possible for the semantic content of the AFI to be implied by network arrangements.