

TECHNICAL REPORT

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Information technology — Telecommunications and information exchange between systems — Protocol identification in the network layer

*Technologies de l'information — Télécommunications et échange d'informations
entre systèmes — Identification de protocoles dans la Couche Réseau*



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Contents

	Page
Foreword	iii
Introduction	iv
1 Scope	1
2 References	1
3 Abbreviations	2
4 Protocol identifiers	2
5 Initial protocol identifier	2
5.1 General	2
5.2 Assignment structure	2
5.3 Values assigned to the IPI	2
6 Subsequent protocol identifier	2
6.1 General	2
6.2 Assignment structure	3
6.3 Values assigned to the SPI	3
Annexes	
A The location and use of protocol identifiers in X.25	7
B Guidelines on the processing of protocol identifiers	9
C Identification of a Non-ISO, Non-CCITT Protocol	10
D Identification of Protocols that are Discriminated According to the IEE-Defined "SNAP" Convention	11

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) together form a system for world wide standardization as a whole. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The main task of a technical committee is to prepare International Standards but in exceptional circumstances, the publication of a technical report of one of the following types may be proposed:

- type 1, when the necessary support within the technical committee cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development requiring wider exposure;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ('state of the art', for example).

Technical reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/IEC TR 9577, which is a technical report of type 3, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

Introduction

Identifying protocols by information in a uniform part of the protocol control information fulfils two requirements:

- i. It enables an entity to verify that the protocol received is of the type and kind expected; and
- ii. It permits an entity to discriminate among a number of different protocols (both OSI and non-OSI) that might co-exist in a common environment.

This Technical Report contains a description of the means used to identify protocols and where that information is located in a protocol, together with a record of those values of protocol identifiers which have been used by ISO and by other authorities. This document does not attempt to provide any general architectural principles for the functions of the protocol identification, nor does it attempt to provide judgements as to whether a protocol might have more than one value of protocol identifier.

By reference to this Technical Report, future protocols can be developed to include a protocol identifier and the value(s) of the protocol identifier can be chosen on a knowledgeable basis.

This Technical Report notes that CCITT Recommendation X.244 provides the basis for clause 6.2.

Information technology - Telecommunications and information exchange between systems - Protocol identification in the network layer

1 Scope

This Technical Report provides

- a) the description of a means to permit a protocol to be identified;
- b) a record of the structure and allowable ranges of protocol identifier(s) which can be assigned by ISO and other authorities;
- c) a record of the values of protocol identifiers used by OSI Network Layer protocols and non-OSI protocols occupying a similar position, in particular, only protocols with protocol control information commencing in octet 1 of the protocol data unit are covered; and
- d) a record of the values that are in use as protocol control information in non-Network Layer protocols where they impact on Network Layer protocol identification.

The application of this Technical Report is:

- a) in the identification of internationally standardized Network Layer protocols operating directly above the Data Link Service;
- b) in the identification of protocols used in conjunction with internationally standardized Network Layer protocols that operate directly above the Data Link Service; and
- c) to distinguish between Internationally standardized Network Layer protocols, and other internationally standardized protocols used in conjunction with internationally standardized Network Layer protocols.

This Technical Report is for use by ISO/IEC Technical Committees and other authorities in applying the principles contained in clause 4, and in selecting an unused value or values from the range of values permitted in clause 5 or clause 6, as appropriate. When a new value is selected, that value and its usage should be brought to the attention of ISO/IEC JTC 1 SC6 so that this Technical Report can be amended.

2 References

ISO/IEC 8073 : 1988, *Information Processing Systems - Open Systems Interconnection - Connection oriented transport protocol specification*.

NOTE - See also CCITT Recommendation X.224.

ISO/IEC 8073/Add.1 : 1988, *Information Processing Systems - Open Systems Interconnection - Connection oriented transport protocol specification - Addendum 1: Network connection management subprotocol*.

ISO 8208 : 1987, *Information processing systems - Data communications - X.25 Packet Level Protocol for Data Terminal Equipment*.

NOTE - See also CCITT Recommendation X.25

ISO/IEC 8473 : 1988, *Information Processing Systems - Data Communications - Protocol for providing the connectionless mode network service*.

ISO 8878 : 1987, *Information processing systems - Data communications - Use of X.25 to provide the OSI connection-mode network service*.

NOTE - See also CCITT Recommendation X.223

ISO/IEC 8880-2:-¹⁾, *Information Processing Systems - Telecommunications and information exchange between systems - Protocol combinations to provide and support the OSI Network Service - Part 2: Provision and support of the connection-mode Network Service*.

ISO/IEC 8880-3:-¹⁾, *Information Processing Systems - Telecommunications and information exchange between systems - Protocol combinations to provide and support the OSI Network Service - Part 3: Provision and support of the connectionless-mode Network Service*.

ISO/IEC 9542 : 1988, *Information Processing Systems - Telecommunications and information exchange between systems - End system to Intermediate system routing protocol for use in conjunction with the Protocol for providing the connectionless-mode network service (ISO 8473)*.

1) To be published.