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Information technology — Open Systems Interconnection — Local area networks — Medium Access Control (MAC) service definition

*Technologies de l'information — Interconnexion de systèmes ouverts —
Réseaux locaux — Définition du service de contrôle d'accès au milieu
(MAC)*



Reference number
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Contents

	Page
Foreword	iii
Introduction	iv
1 Scope	1
2 Normative references	1
3 Definitions	2
3.1 Basic reference model definitions	2
3.2 Service conventions definitions	2
3.3 MAC Service definitions	2
4 Abbreviations	2
5 Conventions	3
5.1 General considerations	3
5.2 Parameters	3
6 Overview of the MAC Service	3
7 Types of MAC Service	3
8 Features of the MAC Service	4
9 Model of the MAC Service	4
9.1 Model of a MAC connectionless-mode transmission	4
9.2 Service provided by the connectionless-mode MAC Service	4
10 Quality of connectionless-mode service	5
10.1 Determination of QoS for connectionless-mode service	5
10.2 Definition of connectionless-mode QoS parameters	5
11 Sequence of primitives at one MSAP	6
12 Data transfer	6
12.1 Function	6
12.2 Types of primitives and parameters	7
12.3 Sequence of primitives	9
Annex	
A Mapping of the MAC Service to/from ISO/IEC 8802-3, ISO/IEC 8802-4, ISO/IEC 8802-5 and ISO/IEC 8802-7 MAC Protocols ...	10

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. 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. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

International Standard ISO/IEC 10039 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

Annex A of this International Standard is for information only.

ISO/IEC 10039:1991 (E)

Introduction

This International Standard is one of a set of International Standards produced to facilitate the interconnection of information processing systems. It is related to other standards in the set as defined by ISO 7498. The reference model described by ISO 7498 subdivides the area of standardization for Open Systems Interconnection (OSI) into a series of layers and allows for each layer to be further divided into sublayers.

This International Standard defines the service provided by the Medium Access Control Sublayer to the Logical Link Control Sublayer at the boundary between the Medium Access Control and Logical Link Control Sublayers. The Medium Access Control and Logical Link Control Sublayers are sublayers of the Data Link Layer of the OSI Basic Reference Model as illustrated in figure 1. The Medium Access Control Sublayer is not described in ISO 7498 but is of value in the specification of ISO/IEC 8802 Local Area Networks.

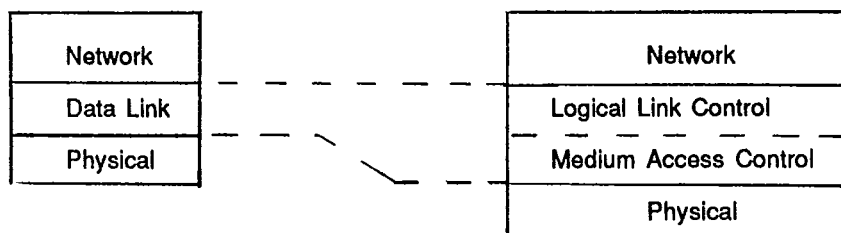


Figure 1 - Relationship of the Medium Access Control and Logical Link Control Sublayer to the OSI Data Link Layer

The International Standard provides a definition of the MAC Service made available to the MAC Service user by the action of a Medium Access Control Protocol over the underlying service. The relationship is illustrated in figure 2.

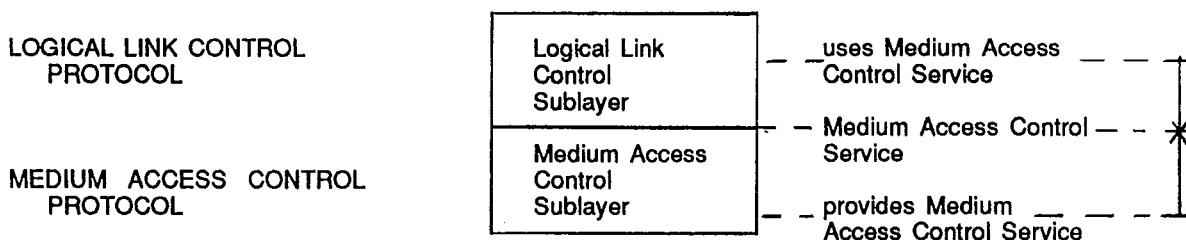


Figure 2 - Relationship of this International Standard to other standards

Throughout the set of International standards, the term "service" refer to the abstract capability provided by one layer of the OSI Basic Reference Model to the layer immediately above. Thus, the MAC Service defined in this document is a conceptual architectural service, independent of administrative divisions.

Information technology — Open Systems Interconnection — Local area networks — Medium Access Control (MAC) service definition

1 Scope

This International Standard defines the Medium Access Control Service found in local area network architecture in abstract terms of

- a) the primitive actions and events of the service;
- b) the parameters associated with each primitive action and event, and the form they take;
- c) the interrelationship between, and the valid sequences of, these actions and events.

The principal objectives of this International Standard are

- a) to specify the characteristics of a conceptual Medium Access Control Service;
- b) guide the development of Medium Access Control Protocols.
- c) guide the development of OSI protocols which make use of the MAC Service.

This International Standard does not specify individual implementation or products, nor does it constrain the implementation of Medium Access Control entities and interfaces within an information processing system.

There is no conformance of equipment to this International Standard. Instead, conformance is achieved through implementation of conforming Medium Access Control Protocols that fulfil the Medium Access Control Service defined in this International Standard.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7498 : 1984, *Information processing systems - Open Systems Interconnection - Basic Reference Model*.

ISO 7498/Add.1 : 1987, *Information processing systems - Open Systems Interconnection - Basic Reference Model - Addendum 1: Connectionless-mode transmission*.

ISO 7498-3 : 1989, *Information processing systems - Open Systems Interconnection - Basic Reference Model - Part 3: Naming and addressing*.

ISO/TR 8509 : 1987, *Information processing systems - Open Systems Interconnection - Service Conventions*.

3 Definitions

3.1 Basic reference model definitions

Although the MAC Service is not identified or defined in the OSI Basic Reference Model, this International Standard is based on the concepts developed in the Basic Reference Model and makes use of the following terms defined in ISO 7498, as they might apply to the Medium Access Control Sublayer:

- a) Entity
- b) Sublayer
- c) Service
- d) Service-access-point
- e) Service-access-point-address
- f) Service-data-unit
- g) Subnetwork address

3.2 Service conventions definitions

Although the MAC Service is not identified or defined in the OSI Basic Reference Model, this International Standard makes use of the following terms defined in ISO/TR 8509, as they might apply to the Medium Access Control Sublayer:

- a) Service user
- b) Service provider
- c) Primitive
- d) Request
- e) Indication

3.3 MAC Service definitions

This International Standard makes use of the following definition:

- a) Group-address (synonyms: group-MSAP-address, group Medium Access Control Service-access-point address): a value, otherwise valid as a Medium Access Control Service-access-point address, identifying a set of Medium Access Control Service-access-points, the set of end systems on which the identified Service-access-points are located being any subset of all stations on a particular local area network.

Note - By contrast, the general definition of an (N)-address restricts the identified Service-access-point to a single open system.

4 Abbreviations

LAN	Local Area Network
MAC	Medium Access Control
MSAP	Medium Access Control Service-access-point
MSDU	Medium Access Control Service-data-unit
OSI	Open Systems Interconnection
QoS	Quality of Service
OUI	Organizationally Unique Identifier