



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

X.460

(04/95)

**DATA NETWORKS AND OPEN SYSTEM
COMMUNICATIONS**

MESSAGE HANDLING SYSTEMS

**INFORMATION TECHNOLOGY –
MESSAGE HANDLING SYSTEMS (MHS)
MANAGEMENT: MODEL AND ARCHITECTURE**

ITU-T Recommendation X.460

(Previously “CCITT Recommendation”)

FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. Some 179 member countries, 84 telecom operating entities, 145 scientific and industrial organizations and 38 international organizations participate in ITU-T which is the body which sets world telecommunications standards (Recommendations).

The approval of Recommendations by the Members of ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, 1993). In addition, the World Telecommunication Standardization Conference (WTSC), which meets every four years, approves Recommendations submitted to it and establishes the study programme for the following period.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC. The text of ITU-T Recommendation X.460 was approved on 10th of April 1995. The identical text is also published as ISO/IEC International Standard 11588-1.

NOTE

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

© ITU 1996

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the ITU.

ITU-T X-SERIES RECOMMENDATIONS
DATA NETWORKS AND OPEN SYSTEM COMMUNICATIONS
 (February 1994)

ORGANIZATION OF X-SERIES RECOMMENDATIONS

Subject area	Recommendation series
PUBLIC DATA NETWORKS	
Services and facilities	X.1-X.19
Interfaces	X.20-X.49
Transmission, signalling and switching	X.50-X.89
Network aspects	X.90-X.149
Maintenance	X.150-X.179
Administrative arrangements	X.180-X.199
OPEN SYSTEMS INTERCONNECTION	
Model and notation	X.200-X.209
Service definitions	X.210-X.219
Connection-mode protocol specifications	X.220-X.229
Connectionless-mode protocol specifications	X.230-X.239
PICS proformas	X.240-X.259
Protocol identification	X.260-X.269
Security protocols	X.270-X.279
Layer managed objects	X.280-X.289
Conformance testing	X.290-X.299
INTERWORKING BETWEEN NETWORKS	
General	X.300-X.349
Mobile data transmission systems	X.350-X.369
Management	X.370-X.399
MESSAGE HANDLING SYSTEMS	X.400-X.499
DIRECTORY	X.500-X.599
OSI NETWORKING AND SYSTEM ASPECTS	
Networking	X.600-X.649
Naming, addressing and registration	X.650-X.679
Abstract Syntax Notation One (ASN.1)	X.680-X.699
OSI MANAGEMENT	X.700-X.799
SECURITY	X.800-X.849
OSI APPLICATIONS	
Commitment, concurrency and recovery	X.850-X.859
Transaction processing	X.860-X.879
Remote operations	X.880-X.899
OPEN DISTRIBUTED PROCESSING	X.900-X.999

CONTENTS

	<i>Page</i>
1 Scope	1
2 Normative references	1
3 Definitions	2
4 Abbreviations	4
5 Conventions	5
6 MHS Management standards overview	5
7 MHS Management model	6
8 Functions	10
9 MHS Management	12
Annex A – Example scenarios and management functions.....	14

Summary

This Recommendation | International Standard establishes an architecture for managing Message Handling Systems and provides an overview to the family of Message Handling Systems Management standards. The scope of this family of Recommendations | International Standards is to provide guide-lines and define tools to be used for the management of Message Handling Systems.

Introduction

This Specification provides, through its four sections plus annex, an overview of the MHS Management functions.

The first section briefly introduces the reader to the terminology, abbreviations, conventions and definitions used throughout the Recommendation | International Standard. Although primarily used as a reference section, both new and experienced Recommendation | International Standard readers should note the additional definitions and conventions.

Section two introduces MHS Management as a member of the family of OSI Systems management standards. It guides readers towards the other Recommendation | International Standards in the MHS Management series which may be of interest.

Section three, the MHS Management Model, addresses the needs of systems management designers to know how to fit their solutions together with the standards. For this purpose the model featured in figures will be a useful aid to visualise the relationships existing amongst the different functional layers and between the functional areas so far identified.

Section four, the MHS Management Architecture, helps the reader to understand how MHS Management fits into and relates to the overall OSI Systems management architecture. This should be of specific interest to implementors who need to know the protocol and service requirements.

INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

INFORMATION TECHNOLOGY – MESSAGE HANDLING SYSTEMS (MHS) MANAGEMENT: MODEL AND ARCHITECTURE

SECTION 1 – INTRODUCTION

1 Scope

This Recommendation | International Standard establishes a model for MHS Management which is consistent with the management layers defined in Telecommunications Management Network. This Recommendation | International Standard establishes an architecture for managing MHS Systems which is consistent with OSI Systems management.

This Recommendation | International Standard provides an overview to the family of MHS Management standards.

The scope of this family of Recommendations | International Standards is to provide guide-lines and define tools to be used for the management of MHS Systems. This includes the management within and between ADMDs and/or PRMDs. Examples of objects to be managed are: MTA, UA, AU, and MS.

This Recommendation | International Standard provides an overview of the MHS Management functions.

2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

2.1 Identical Recommendations | International Standards

- ITU-T Recommendation X.200 (1994) | ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The basic model.*
- ITU-T Recommendation X.462 (1995) | ISO/IEC 11588-3:1995, *Information technology – Message Handling Systems (MHS) management: Logging information.*
- ITU-T Recommendation X.467 (1995) | ISO/IEC 11588-8:1995, *Information technology – Message Handling Systems (MHS) management: Message transfer agent entity.*
- CCITT Recommendation X.701 (1992) | ISO/IEC 10040:1992, *Information technology – Open Systems Interconnection – Systems management overview.*
- CCITT Recommendation X.720 (1992) | ISO/IEC 10165-1:1993, *Information technology – Open Systems Interconnection – Structure of management information: Management information model.*
- CCITT Recommendation X.730 (1992) | ISO/IEC 10164-1:1993, *Information technology – Open Systems Interconnection – Systems management: Object management function.*

2.2 Paired Recommendations | International Standards

- ITU-T Recommendation X.402 (1995), *Message Handling Systems: Overall architecture.*
ISO/IEC 10021-2:1990, *Information technology – Text Communication – Message-Oriented Text Interchange Systems (MOTIS) – Part 2 – Overall Architecture.*

ISO/IEC 11588-1 : 1995 (E)

- CCITT Recommendation X.700 (1992), *Management framework for Open Systems Interconnection (OSI) for CCITT applications.*
ISO/IEC 7498-4:1989, *Information processing systems – Open Systems Interconnection – Basic Reference Model – Part 4: Management framework.*
- CCITT Recommendation X.710 (1991), *Common management information service definition for CCITT applications.*
ISO/IEC 9595:1991, *Information technology – Open Systems Interconnection – Common management information service definition.*

2.3 Additional references

- CCITT Recommendation M.3010 (1992), *Principles for a telecommunications management network.*
- ITU-T Manual X.461 (1995) | ISO/IEC TR 11588-2:1995, *Information technology – Message Handling Systems (MHS) management: Information.*

3 Definitions

For the purposes of this Recommendation | International Standard, the following definitions apply.

3.1. Basic Reference Model definitions

This Recommendation | International Standard is based on the concepts in the Basic Reference Model for Open Systems Interconnection (see ITU-T Rec. X.200 | ISO/IEC 7498-1) and makes use of the following term defined in that model:

- systems management

3.2 Telecommunications Management Network definitions

This Recommendation | International Standard makes use of the following terms defined in Principles for a Telecommunications Management Network (CCITT Recommendation M.3010):

- a) business management layer;
- b) management information model;
- c) network element layer;
- d) network element management layer;
- e) network management layer;
- f) service management layer.

3.3 OSI Systems Management definitions

This Recommendation | International Standard makes use of the following terms defined in the OSI Management Framework (CCITT Rec. X.700 | ISO/IEC 7498-4):

- a) managed object;
- b) management information base.

This Recommendation | International Standard makes use of the following terms defined in OSI Systems Management Overview (CCITT Rec. X.701 | ISO/IEC 10040):

- a) agent;
- b) agent role;
- c) generic definitions;
- d) managed object class;
- e) managed (open) system;
- f) management information;
- g) manager;
- h) manager role;