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SERIES M: TMN AND NETWORK MAINTENANCE:
INTERNATIONAL TRANSMISSION SYSTEMS,
TELEPHONE CIRCUITS, TELEGRAPHY, FACSIMILE
AND LEASED CIRCUITS

Telecommunications management network

Overview of TMN Recommendations

ITU-T Recommendation M.3000

(Formerly CCITT Recommendation)

ITU-T M-SERIES RECOMMENDATIONS

TMN AND NETWORK MAINTENANCE: INTERNATIONAL TRANSMISSION SYSTEMS, TELEPHONE CIRCUITS, TELEGRAPHY, FACSIMILE AND LEASED CIRCUITS

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For further details, please refer to ITU-T List of Recommendations.

OVERVIEW OF TMN RECOMMENDATIONS

Summary

This overview of TMN Recommendations describes the aim, subject areas and the range of TMN-related Recommendations developed or to be developed within the ITU-T. Annexes A and B contain the current lists of TMN-related Recommendations.

Source

ITU-T Recommendation M.3000 was revised by ITU-T Study Group 4 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on 4 February 2000.

Keywords

List of TMN Recommendations, overview of TMN Recommendations, subject areas of TMN Recommendations, Telecommunications Management Network (TMN), TMN-referenced Recommendations.

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. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1.

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.

NOTE

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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Introduction

The study of TMN requires various expertise and TMN-related Recommendations are being developed in various Study Groups within ITU-T. This Recommendation has been developed to present a stable framework in the form of an umbrella Recommendation as a guide to all relevant development activities.

ITU-T M.3000 2000

OVERVIEW OF TMN RECOMMENDATIONS

1 Scope

The purpose of this Recommendation is to serve as an umbrella Recommendation for the development and use of TMN Recommendations within ITU-T. TMN Recommendations describe principles, architecture, definitions and specifications necessary to implement all types of TMNs.

The contents of this Recommendation are the fields of application of TMN, areas to be studied (subject areas) in TMN Recommendations and areas of Recommendations that are referenced by TMN Recommendations (TMN-referenced Recommendations).

Annexes A and B list the current TMN-related Recommendations.

The users of this Recommendation are expected to be the experts who develop individual TMN-related Recommendations, those who utilize TMNs to manage telecommunication networks, and vendors and suppliers who implement TMNs.

2 Fields of application

TMNs provide the means used to transport, store and process information used to support the management of telecommunication networks and services.

TMNs can be used for the management of telecommunication networks operated by Administrations, ROAs, customers, or other organizations and individuals. When these telecommunication networks are connected with each other, their TMNs provide the means of exchanging information required to manage end-to-end telecommunication services.

All types of telecommunication networks and network elements – such as analogue networks, digital networks, public networks, private networks, switching systems, transmission systems, telecommunication software, and logical resources of the network (such as a circuit, path, or telecommunication services supported by these resources) are candidates for management by a TMN.

There is in principle no limit to the fields of application. Since TMN Recommendations are still being developed, however, there is currently a practical limit to the variety of application fields that can be implemented.

3 Abbreviations

This Recommendation uses the following abbreviations:

ACSE	Association Control Service Element
AN	Access Network
AOM	Application OSI Management (profile)
ASN.1	Abstract Syntax Notation One
ATM	Asynchronous Transfer Mode
B-ISDN	Broadband Integrated Services Digital Network
CMIP	Common Management Information Protocol

CMISE	Common Management Information Service Element
CNM	Customer Network Management
CORBA	Common Object Request Broker Architecture
DCN	Data Communication Network
EDI	Electronic Data Interchange
ET	Exchange Termination
FTAM	File Transfer, Access and Management
GIOP	General Inter-ORB Protocol
ICS	Implementation Conformance Statement
IIOP	Internet Inter-ORB Protocol
IN	Intelligent Network
IP	Internet Protocol
ISDN	Integrated Services Digital Network
ISO	International Organization for Standardization
ISP	International Standardized Profile
LE	Local Exchange
MCS	Management Conformance Statement
MOCS	Managed Object Conformance Statement
MRCS	Management Relationship Conformance Statement
MS	Management Service
NE	Network Element
NSAP	Network Service Access Point
OAM&P	Operations, Administration, Maintenance & Provisioning
ODMA	Open Distributed Management Architecture
OS	Operations System
OSI	Open Systems Interconnection
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
RM-ODP	Reference Model for Open Distributed Processing
ROA	Recognized Operating Agency
ROSE	Remote Operation Service Element
SDH	Synchronous Digital Hierarchy
SG/WP	Study Group/Working Party
SN	Service Node
STASE	Security Transformations Application Service Element
TCP/IP	Transmission Control Protocol/Internet Protocol
TIB	Task Information Base

TMN	Telecommunications Management Network
UML	Unified Modelling Language

4 Definitions

TMN-specific technical terms are defined in each TMN Recommendation as well as clause 2/M.60 or in Recommendations dedicated to specific areas of technology.

5 Subject areas of TMN Recommendations

5.1 Evolution of TMN

The study of TMN within ITU-T originated in the definition of interfaces and the specification of interface protocols between OSs and transmission terminals. The concept of TMN was soon established to include the development of Recommendations for the information network operating in support of the management of all telecommunication networks and services.

TMN Recommendations are thus expected to be developed over a long period, to suit the growing demands resulting from continuously evolving telecommunication networks and services.

To avoid inconsistency and duplication in different telecommunication domains, TMN Recommendations are developed in a planned order and with an organized structure. The subject areas of TMN Recommendations are introduced to help understand the purpose of individual Recommendations and to make the assessment of Recommendations easier from the viewpoint of avoiding inconsistencies and duplications.

Identified TMN subject areas are:

- Architecture;
- Interface specification methodology;
- Management services;
- Management functions (protocol independent);
- Management information models and catalogue;
- Management information registration;
- Communication protocols;
- Systems management services and management messages (protocol specific);
- Conformance requirements;
- International standard profiles;
- Terminology;
- Security.

To derive TMN requirements or introduce specifications as a tool to develop a TMN, TMN Recommendations reference other Recommendations and/or Standards. The areas of TMN-referenced Recommendations/Standards are:

Referenced areas:

- Telecommunication services;
- Telecommunication network architecture;
- Telecommunication network management for traffic;
- Telecommunication network maintenance;