INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

M.3050.0

(07/2004)

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

Telecommunications management network

Enhanced Telecom Operations Map (eTOM) – Introduction

ITU-T Recommendation M.3050.0

ITU-T M-SERIES RECOMMENDATIONS

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

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ITU-T Recommendation M.3050.0

Enhanced Telecom Operations Map (eTOM) – Introduction

Summary

ITU-T Recs M.3050.x series contain a reference framework for categorizing the business activities that a service provider will use. The Enhanced Telecom Operations Map® (or eTOM for short), which has been developed by the TeleManagement Forum, describes the enterprise processes required by a service provider and analyses them to different levels of detail according to their significance and priority for the business. This business process approach has built on the concepts of Management Services and Functions in order to develop a framework for categorizing all the business activities.

This Recommendation (Introduction) gives the background to the development of the management services/functions approach and describes how the business processes approach relates to other Telecommunications Management Recommendations.

Source

ITU-T Recommendation M.3050.0 was approved on 22 July 2004 by ITU-T Study Group 4 (2001-2004) under the ITU-T Recommendation A.8 procedure.

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FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. 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 Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 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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ITU-T Recommendation M.3050.0

Enhanced Telecom Operations Map (eTOM) – Introduction

1 Scope

The Enhanced Telecom Operations Map® (eTOM) [GB921] has been developed by the TeleManagement Forum (TMF) as a reference framework for categorizing all the business activities that a service provider will use. It should be noted that the TMF retains ownership of the eTOM and copyright of the underlying IPR. The ITU-T will own the copyright on the M.3050.x-series ITU-T Recommendations themselves.

This Recommendation is a part of a series of ITU-T texts dealing with eTOM, and which have the following structure:

– M.3050.0: eTOM – Introduction.

– M.3050.1: eTOM – The business process framework. (TMF GB921 v4.0.)

– M.3050.2: eTOM – Process decompositions and descriptions. (TMF GB921 v4.0 Addendum D.)

– M.3050.3: eTOM – Representative process flows. (TMF GB921 v4.0 Addendum F.)

– M.3050.4: eTOM – B2B integration: Using B2B inter-enterprise integration with the eTOM. (TMF GB921 v4.0 Addendum B.)

– M.3050 Supplement 1: eTOM – ITIL application note. (TMF GB921 v4.0 Addendum L.)

– M.3050 Supplement 2: eTOM – Public B2B Business Operations Map (BOM). (TMF GB921 v4.0 Addendum C.)

– M.3050 Supplement 3: eTOM to M.3400 mapping.

Additional parts will be published as material becomes available.

This series of ITU-T Recs M.3050.x build on the Management Services and Managed Areas approach described in ITU-T Recs M.3010 and M.3200 by developing a Business Process Framework.

This Recommendation (Introduction) gives the background to the development of the management services approach and describes how the business processes approach relates to other Telecommunications Management Recommendations.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

– ITU-T Recommendation M.3010 (2000), *Principles for a telecommunications management network*.

– ITU-T Recommendation M.3020 (2000), *TMN interface specification methodology*.

– ITU-T Recommendation M.3200 (1997), *TMN management services and telecommunications managed areas: overview*.

– ITU-T Recommendation M.3400 (2000), *TMN management functions*.

3 Definitions

This Recommendation defines the following term:

3.1 eTOM: The Enhanced Telecom Operations Map (or eTOM for short) is a business process model or framework for use by service providers and their suppliers and partners within the telecommunications industry. It describes all the enterprise processes required by a service provider and analyses them to different levels of detail according to their significance and priority for the business.

Definitions of the following terms may be found in ITU-T Rec. M.3020:

a) TMN management function;

b) TMN management function set;

c) TMN management function set group.

4 Abbreviations

This Recommendation uses the following abbreviations:

BML	Business Management Layer
EML	Element Management Layer
eTOM	enhanced Telecom Operations Map
FCAPS	Fault, Configuration, Accounting, Performance, and Security
NEL	Network Element Layer
NML	Network Management Layer
SML	Service Management Layer
TMF	TeleManagement Forum (see http://www.tmforum.org/)
TMN	Telecommunications Management Network

5 Background (ITU-T's management service/function approach)

In developing Recommendations for Telecommunications Management interfaces, the ITU-T has developed a number of concepts to assist in the decomposition of the management requirements into manageable subsets and to encourage the reuse of solutions.

ITU-T Recommendation M.3010 provides an overall architectural framework and, in particular, includes a logical layered architecture (LLA) that separates levels of abstraction in managing Network Elements, Networks, Services, etc., and relates them to the management service/function approach. ITU-T Rec. M.3010 organizes TMN functions into horizontal groupings called logical layers and describes the relationships between them to deal with TMN complexity. The LLA consists of five layers (BML, SML, NML, EML, NEL) with business management at the top, service management the second layer, network management the third layer, element management the fourth layer, and the network elements at the bottom.

In the first TMN Recommendation on the management service/function approach a set of TMN application functions were identified, building upon the Fault, Configuration, Accounting, Performance and Security (FCAPS) Management categories that are described in ITU-T Rec. M.3400.

In order to support the wide variety of management activities including planning, installation, operations, administration, maintenance, and provisioning of telecommunications networks and services, the concepts of Telecommunications Managed Areas and TMN Management Services were developed and are described in ITU-T Rec. M.3200.

The Telecommunications Managed Areas relate to the grouping of telecommunications resources being managed and the Management Services relate to the set of processes needed to achieve business objectives (i.e., Management Goals). It has been accepted that flexibility is required in the definition of TMN Management Services to enable additional requirements to be accommodated as they are identified (see ITU-T Rec. M.3200).

The TMN Management Services are described from the TMN users' perspective and are independent of the protocols, messages, and information models chosen.

The management services are comprised of management functions and specify offerings fulfilling specific Telecommunications Management needs.

Management Functions are grouped together and referred to as a Management Function Set. The library of general Management Function Sets and their Management Functions members can be found in ITU-T Rec. M.3400, categorized according to their FCAPS application and specified together with generic end-to-end flow scenarios that relate them to management services and managed areas according to ITU-T Rec. M.3200 and TMN logical layers according to ITU-T Rec. M.3010. The resulting scheme consists of horizontal groupings into layers and vertical groupings into functional flow-through areas.

In the interface specification methodology (ITU-T Rec. M.3020), each interface specification addresses one or more management service(s) defined in ITU-T Rec. M.3200. A specification may support part of or one or more management services.

In describing the requirements for an interface, the functions identified may reference those defined in ITU-T Rec. M.3400 or specialize one or more of them to suit a specific managed area, or new functions may be identified as appropriate.

6 The business process approach

The business process approach has built on the concepts of management services and functions in order to develop a reference framework for categorizing all the business activities that a service provider will use. This is done through a business-oriented definition of each area of business activity, in the form of a process view that describes the service provider's enterprise in a top-down, structured way with progressive decomposition to expose increasing detail. The individual process elements that are identified can then be positioned within a model for analysis of organizational, functional and other relationships, and can be combined within process flows that trace activity paths through the business.

This process-oriented perspective can be related to the functional view provided elsewhere in TMN, to allow the relevant management and resource/network capabilities to be linked with the business needs that they support. This is further discussed in clause 7 below.

The vehicle for expressing this process view of the service provider is the Enhanced Telecom Operations Map (eTOM) Business Process Framework, developed by the TeleManagement Forum. The eTOM framework can serve as the blueprint for standardizing and categorizing business activities

(i.e., process elements) that will help set direction and the starting point for development and integration of Business and Operations Support Systems (BSS and OSS respectively). In the context of TMN, the eTOM framework provides the business-oriented view of service provider requirements that management services and functions need to support, and the mapping from individual eTOM processes to management functions, and vice versa, is documented to assist and support the application of both these processes and functions within management solutions.

By including the eTOM framework within TMN, it is intended that the telecommunications industry will have clear information and guidance on linking the eTOM process view with other areas of TMN, and will be able to leverage the eTOM framework as a consensus tool for discussion and agreement among service providers and network operators, and with their suppliers and partners. It will encourage convergence and general support for a broad common view on business processes within the industry that will facilitate agreements in other areas of business linkage between organizations. Use of eTOM will also provide a background against which detailed agreements on implementation can be established which can also draw on other areas of TMN, and so will relate business needs to available or required standards and Recommendations. It will also assist the telecommunications industry through a common process view that acts as a requirements framework for equipment suppliers, applications builders, and systems integrators to build management systems by combining third party and in-house developments. The eTOM work also provides the definition of common terms concerning enterprise processes, sub-processes, and the activities performed within each. Common terminology makes it easier for service providers to negotiate with customers, third party suppliers, and other service providers.

7 Relationship between the management service/function and business process approaches

As previously noted, the TMN management services/functions can be related to the eTOM business processes, but they provide a different perspective on the management environment. The main differentiator between the two approaches is that the M.3200 approach has been built on the requirements to manage network equipment and networks (bottom up) while the eTOM has been built on the need to support processes of the entire service provider enterprise (top down).

Figure 1 shows the relationship between the Management Service/Function approach from ITU-T Rec. M.3200/M.3400 and the Business Process approach documented in ITU-T Recs M.3050.x.

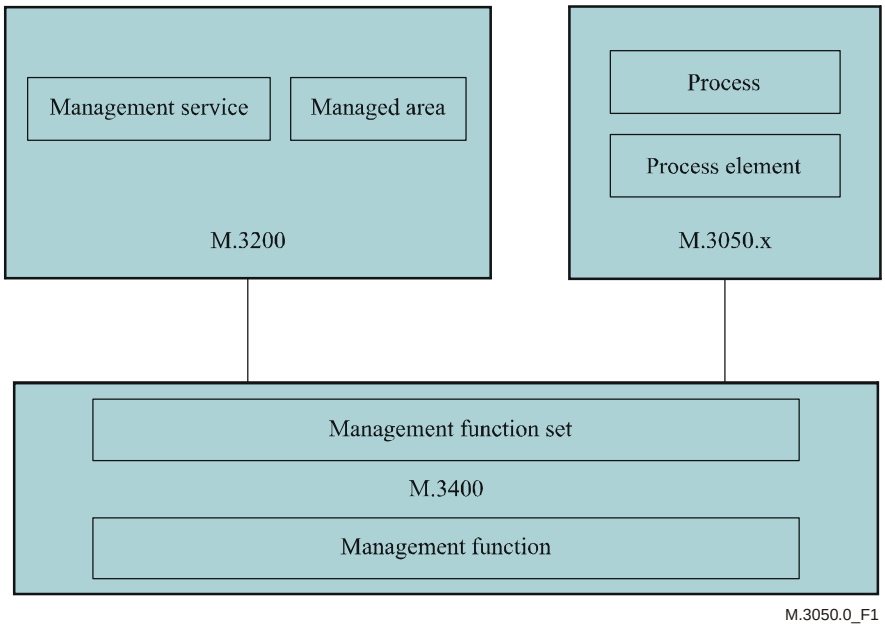

Figure 1/M.3050.0 – Relationship between the management service/function and business process approaches

Both approaches can be used to identify generic and specialized management function sets to support management activities, as defined in ITU-T Rec. M.3400. Together ITU-T Recs M.3200 and M.3400 capture a technology and resource oriented view of the management domain, and this is often valuable and relevant when considering the structure and organization of a management solution. The eTOM framework provides an additional business-oriented viewpoint that is important in considering the business requirements of the service provider, as the user of a management solution, and in ensuring that the arrangement of management functions is meaningful and useful for the way that the service provider does business. In the end, the management functions must be grouped and supported within applications that address specific business needs, so the linkage between the eTOM processes and the M.3400 management function sets and management functions is important to assist in making this linkage clear and effective.

With this linkage defined, each area can assist and support the other. The eTOM framework links with the M.3400 management function sets and management functions so that these provide a more detailed view of individual management aspects than is visible only at the process level. The M.3400 functions gain additional context and a clear relationship with business goals and needs from their association with defined eTOM processes.

Where ITU-T Rec. M.3400 provides a detailed, functional view on the element, network and service management layers, ITU-T Recs M.3050.x series provide the business view for those layers. They reveal the business requirements that ensure those layers fit within the overall service provider enterprise in support of its business objectives. Details of this relation are described in the M.3050 eTOM to M.3400 mapping supplement (see Supplement 3 to M.3050).

A further area of relationship with existing TMN Recommendations concerns ITU-T Rec. M.3010 and its Logical Layered Architecture (LLA). The eTOM level 1 horizontal functional process groupings correspond to the layering in M.3010 LLA. For example, the eTOM Service Management & Operations (SM&O) grouping corresponds to the M.3010 Service Management Layer (SML), and the

eTOM Resource Management & Operations (RM&O) grouping corresponds to both the M.3010 Network Management Layer (NML) and the Element Management Layer (EML).

8 Impact on other Recommendations

It is intended that the process decompositions contained in these Recommendations be used as an input to the Requirements phase of the Interface Specification Methodology (ITU-T Rec. M.3020).

ITU-T Rec. M.3400 will be reviewed and updated, if required, to include any new or changed functions or function sets identified.

BIBLIOGRAPHY

[GB921] TMF, GB921 Version 4.0 – Enhanced Telecom Operations Map® (eTOM) – The Business Process Framework for the Information and Communications Services Industry.

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Printed in Switzerland
Geneva, 2005

Printed in Switzerland
Geneva,