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

Designations and information exchange

**Principles for maintenance information to be
exchanged at customer contact point (MICC)**

ITU-T Recommendation M.1535

(Previously «CCITT Recommendation»)

ITU-T M-SERIES RECOMMENDATIONS

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

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FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (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 (Helsinki, March 1-12, 1993).

ITU-T Recommendation M.1535 was prepared by ITU-T Study Group 4 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 12th of May 1996.

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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ABSTRACT

A customer contact point is a conceptual point at which a service provider can interact with any customer of the offered service for the purpose of maintaining communication services.

This Recommendation describes principles for the minimum maintenance information to be exchanged at customer contact point (MICC) with the application of a reference model and terms for maintenance information exchange between a customer and a service provider's customer care staff at customer contact point under environment of multiservice providers.

KEYWORDS

Customer, Customer care staff, Customer contact point, Maintenance, Maintenance information to be exchanged at customer contact point (MICC), Management Service (MS), Operations, Administrations and Maintenance (OAM), Service provider (e.g. Administration, ROA, carrier, etc.).

PRINCIPLES FOR MAINTENANCE INFORMATION TO BE EXCHANGED AT CUSTOMER CONTACT POINT (MICC)

(Geneva, 1996)

1 General

A customer contact point is a conceptual point at which a service provider can interact with any customer of the offered service for the purpose of maintaining communication services. This Recommendation proposes principles for the maintenance information to be exchanged at customer contact point (MICC). Nowadays, as shown in Figure 1, customer activities include the use of communication services as well as its management. At customer contact point of service providers, customers require interactions that every service provider offers information in a commonly understandable manner under environment of multiservices and multiservice providers. For example, when a customer uses leased line services provided by multiple service providers, he requires the maintenance information to be supplied in a commonly understandable manner to supervise communication status or to decide whether alternative means must be taken or not in the face of communication failures. Service providers have to share knowledge on what type of maintenance information should be supplied to customers and how it should be exchanged to meet the requirements.

The increasing customer demand for the quality of communication cannot be overlooked and service providers are more and more requested to make an effort to gain customers' satisfaction within a compromise of technological capabilities and operating resources. Currently, there is a strong need to define the above standard maintenance information to be exchanged and it is important to underline that these requirements are to be defined taking into account also other Recommendations (e.g. [11], [12], [13] and [14]).

It is also important to note that in Figure 1 the customer contact point is not implying any implementation such as TMN or ISDN for the means of communication between a customer and the customer care staff of the service provider.

1.1 General terms and definitions

For the purposes of this Recommendation, the following definitions apply:

1.1.1 maintenance: A combination of activities which are carried out (e.g. by customers and/or service providers depending on specific situations) in order to maintain telecommunication services and to recover from failures, faults or problems of communication services. An aspect of service provider's maintenance activity from the viewpoint of the customer is one of the management service [1], [2] and [9].

1.1.2 customer: An entity which has both roles of the telecommunication service user and maintenance service user, who generates revenue for a service provider through payment of charges. This includes the customer directly recognized by the service provider and excludes end users if the users use the value added service provided by a customer [1].

1.1.3 service provider: An organization that operates communication services and offers them to customers.

1.1.4 customer care staff: An entity within service provider organization which directly interacts with customers (front-end function).

1.1.5 customer contact point: A customer contact point is a conceptual point at which a service provider can interact with any customer of the offered service for the purpose of maintaining communication services.

1.1.6 Management Service (MS): An area of management activity which provides for the support of an aspect of Operations, Administrations and Maintenance (OAM) of the network being managed, described from the user perception of the OAM requirements [8].

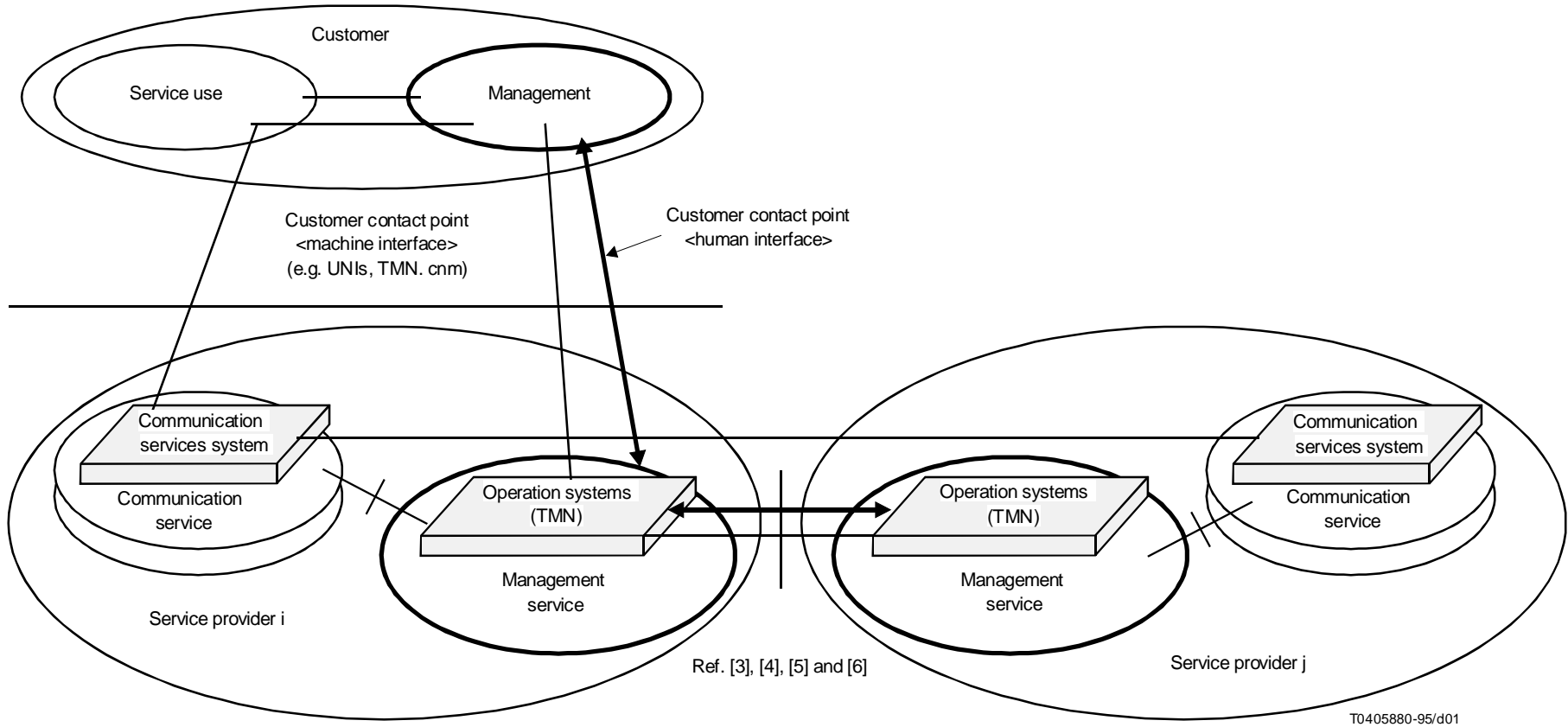


FIGURE 1/M.1535
Customer contact point reference model

1.2 Scope

This Recommendation defines a reference model which includes the description of maintenance processes where both customers and service provider’s care staff are involved, and it also provides the description of maintenance information defined in terms of the processes. The model is focused on the minimum terms which are essential to introduce future machine-to-machine interface [7].

In particular the main purposes of this reference model are:

- i) To share a common reference model for maintenance processes at customer contact point.
- ii) To utilize common definitions of terms for maintenance information for communication services. An example of the relation between managed area and principal information to be exchanged at customer contact point is shown in Figure 2.
- iii) To share the concept and definitions of terms for maintenance procedures and the service level.

However, for the above model the following main considerations apply:

- iv) Its utilization is for the exchange of maintenance information only (i.e. activities of SG 4)¹⁾.
- v) It is not intended to standardize any specific processes of each service provider as well as their internal organization.
- vi) It is not recommending any standard or target value for maintenance/service level.
- vii) It is not intended to standardize any protocol implementation among service providers.

Managed area	Telephone services	Leased circuit services	ISDN services	Data transmission services
Information				
Contract information				
Billing information				
Provisioning information				
Maintenance information	Generic principle and common definitions			
Quality information				

FIGURE 2/M.1535

Relation between managed area and principal information at customer contact point

¹⁾ This Recommendation should be used as a model for exchange of maintenance information between service providers and customers, and in no conflict with other functions or similar contact point which handle other types of services between Administrations or ROAs such as the “Customer Satisfaction Point” which is defined in Recommendation E.440 [10].

2 Reference model

2.1 Customer contact point reference model

A customer contact point is a conceptual point at which a service provider can interact with any customer of the offered service for the purpose of maintaining communication services (as shown in Figure 1). Maintenance information to be exchanged at that point can be realized through either human-to-human interface or future machine-to-machine interface (e.g. UNIs and TMN). Additionally, maintenance information between service providers is provided in Recommendations M.1400 [3], M.1510 [4], M.1520 [5] and M.1530 [6].

2.2 Roles and communication means at customer contact point

2.2.1 Roles

When a customer needs to contact the service provider for the exchanging of the maintenance information, the customer recognizes any service front entity (e.g. a person) as a customer's care staff. Therefore, the management of service will involve a customer and a service provider's customer care staff.

2.2.2 Communication means

Multiple communication means will be utilized under the environment of multi-services and multiservice providers such as a voice medium (telephone communications), a paper medium (facsimile communications), an electronic medium (text communications) and formatted electronic medium (e.g. [11], [12], [13] and [14]). No single medium will be specified as the communication means at customer contact point. For this Recommendation, communication can be described by text format which can easily be translated to any other communication means especially for electronic communication media.

2.3 Maintenance process reference model

Generally, the maintenance process is quite complex since it depends on different situations. In order to extract maintenance information to be exchanged with customers systematically, it is useful to create a reference model that divides maintenance process into some sub-processes, that is, the minimum unit (see Figure 3). Actually, maintenance process is carried out by combining sub-processes corresponding to different situations. Maintenance related sub-processes consist of customer's activity, service provider/customer's care staff activity, and information exchanged between them. Maintenance information exchanged with customers is extracted based on this maintenance process reference model. Maintenance related sub-processes can be categorized from the viewpoint of the customer as illustrated in Figure 3.

3 Benefits of the model

3.1 Customers' benefits

3.1.1 Efficient fault restoration

The model and terminology shared by customer's care staff of several service providers enable more accurate and rapid maintenance information exchanges for fault recovery. This will save time in localizing fault and restoration.

3.1.2 Capability to introduce automation of maintenance information exchanges

Sharing the same model and terms, customer's care staff of different service providers will lead customers to prepare for future machine-to-machine interfaces. Automation of maintenance information exchanges and communication management by customers themselves will be enabled.

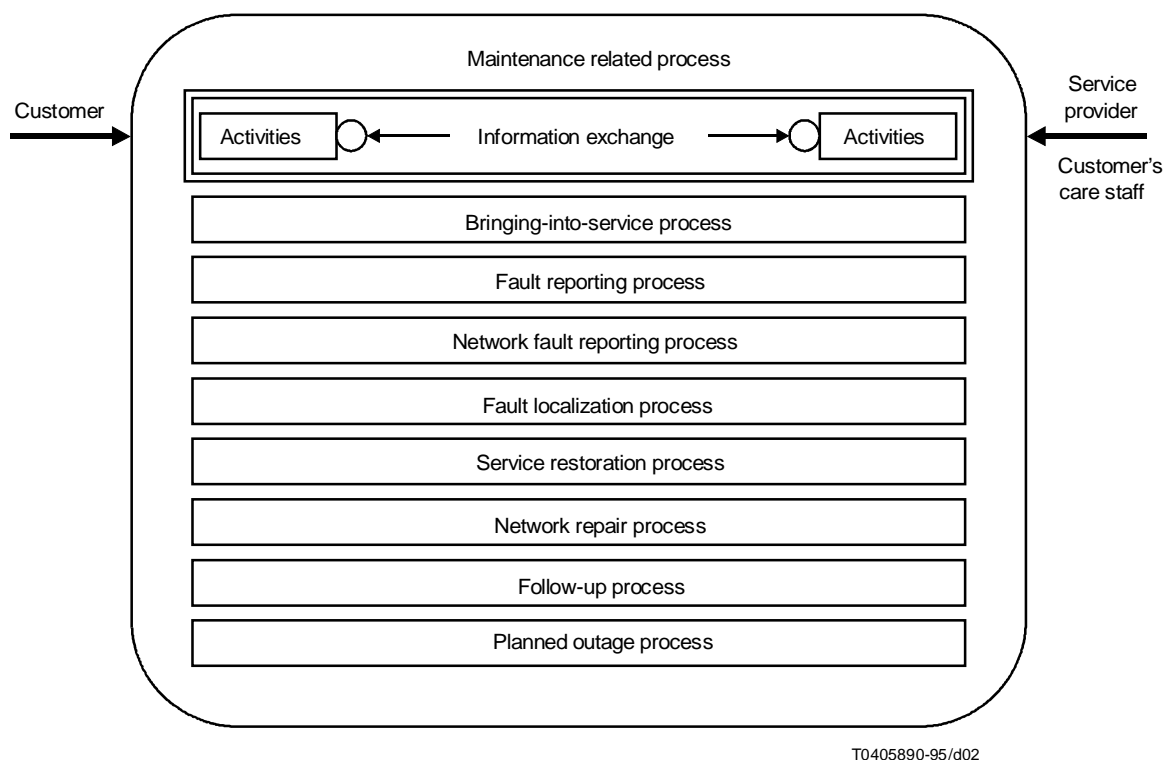


FIGURE 3/M.1535
Maintenance process reference model

3.2 Service provider benefits

3.2.1 Efficient fault repairment

The model and terminology shared by customers enable more accurate and rapid maintenance information exchanges for fault recovery. This will save time in the maintenance processes.

3.2.2 Capability to introduce automation of maintenance service processes

Customers sharing the common model and terms for maintenance information will lead service providers to accelerate introducing machine-to-machine interfaces for maintenance information exchanges. This will enable automation of maintenance service processes.

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