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ITU-T

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

Designations and information exchange

Definition of maintenance information to be exchanged at customer contact point (MICC)

ITU-T Recommendation M.1537

(Previously 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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ITU-T RECOMMENDATION M.1537

DEFINITION OF MAINTENANCE INFORMATION TO BE EXCHANGED AT CUSTOMER CONTACT POINT (MICC)

Source

ITU-T Recommendation M.1537 was prepared by ITU-T Study Group 4 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 24th of October 1997.

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.

INTELLECTUAL PROPERTY RIGHTS

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As of the date of approval of this Recommendation, the ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

CONTENTS

Recommendation M.1537

DEFINITION OF MAINTENANCE INFORMATION TO BE EXCHANGED AT CUSTOMER CONTACT POINT (MICC)

(Geneva, 1997)

1 Scope

This Recommendation describes the definition for the maintenance information exchange between a customer and a service provider's customer care staff at customer contact point under the environment of multiple service providers.

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.

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; all 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.

– ITU-T Recommendation E.440 (1996), *Customer satisfaction point*.

– ITU-T Recommendation E.800 (1994), *Terms and definition related to quality of service and network performance including dependability*.

– CCITT Recommendation M.21 (1992), *Maintenance philosophy for telecommunication services.*

– ITU-T Recommendation M.60 (1993), *Maintenance terminology and definitions*.

– ITU-T Recommendation M.1400 (1997), *Designations for international networks*.

– CCITT Recommendation M.1510 (1992), *Exchange of contact point information for the maintenance of international services and the international network.*

– CCITT Recommendation M.1520 (1992), *Standardized information exchange between Administrations*.

– CCITT Recommendation M.1530 (1992), *Network maintenance information*.

– ITU-T Recommendation M.1535 (1996), *Principles for Maintenance Information to be exchanged at Customer Contact point (MICC).*

– ITU-T Recommendation M.1540 (1994), *Exchange of information for planned outages of transmission systems*.

– ITU-T Recommendation M.3010 (1996), *Principles for a Telecommunications Management Network.*

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

– ITU-T Recommendation X.160 (1996), *Architecture for customer network management service for public data networks*.

– ITU-T Recommendation X.161 (1995), *Definition of customer network management services for public data networks*.

– ITU-T Recommendation X.162 (1995), *Definition of management information for customer network management service for public data networks to be used with the CNMc Interface.*

– ITU-T Recommendation X.163 (1995), *Definition of management information for customer network management service for public data networks to be used with the CNMe Interface.*

3 Terms and definitions

3.1 Terminology

Recommendation M.1535 provides principles for Maintenance Information to be exchanged at Customer Contact point (MICC).

Terminology and definitions relating to this Recommendation are provided in Recommendation M.60. Further terms and definitions can be found in other ITU-T Recommendations (e.g. M.21, M.1400, M.1510, M.1520, M.1530, M.1540, M.3010, M.3200, E.800, E.440, X.160, X.161, X.162 and X.163).

4 Abbreviations

This Recommendation uses the following abbreviations

ISDN Integrated Services Digital Network

MICC Maintenance Information to be exchanged at Customer Contact point

TMN Telecommunications Management Network

5 Definition of maintenance information

5.1 Information basic structure

Maintenance Information to be exchanged at Customer Contact point (MICC) consists of "Generic information part", "Specific information part" and "Reference information part". All this information contains items and/or sub-items of maintenance information (see Figure 1).

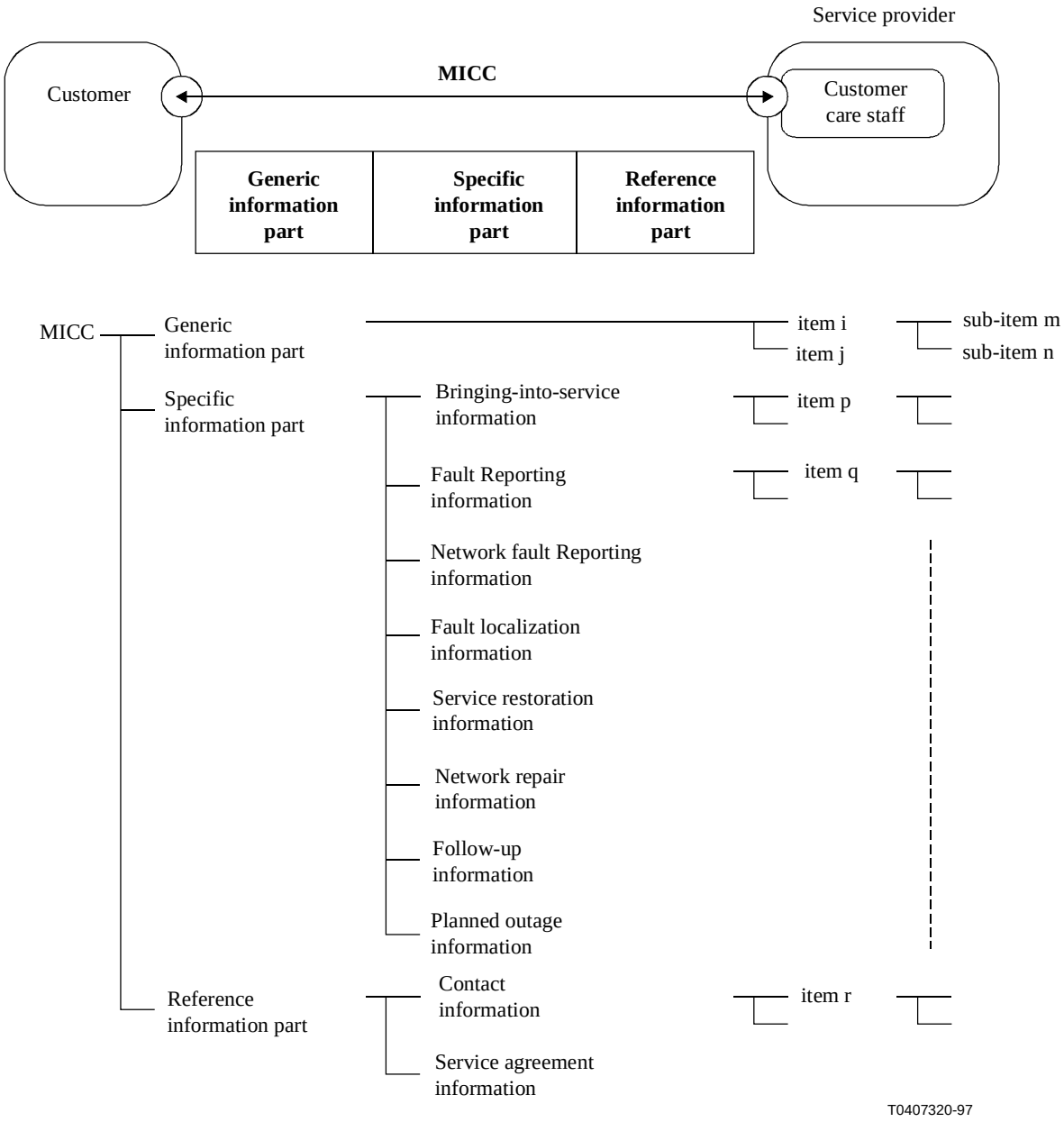


Figure 1/M.1537 – MICC basic structure

5.2 Generic information part

Generic information part is independent from the maintenance sub-process type (see Recommendation M.1535), and it is normally used during a sequence of procedure in order to identify the circuit and event concerned. Generic information items are shown in Table 1.

Table 1/M.1537 – Generic information items

Managed area / Information part	**Telephone services** (Note 1)	**Leased Circuit services**	**ISDN services**	**Data transmission services**
	Information items			
Generic information	– Contact time (Note 2) – Customer identification – Customer care staff identification – Circuit identification (Note 3)			
NOTE 1 – For telephone services, the above information items are used for special telephone services only, for example sound-program transmission on fixed (non-switched) public circuits. NOTE 2 – Contact time identifies the time whenever service provider's care staff is contacted by customer or vice versa, for example: planned outage. NOTE 3 – For circuit identification, Recommendation M.1400 may be used.				

5.3 Specific information part

Specific information part is dependent on individual maintenance sub-process. Therefore, appropriate maintenance information items are used for each of the following eight maintenance sub-processes (see Recommendation M.1535):

– bringing-into-service;
– fault report (customer to service provider);
– network fault report (service provider to customer);
– fault localization;
– service restoration ;
– network repair;
– fault follow-up;
– planned outage.

Specific information items are shown in Table 2.

Table 2/M.1537 – Specific information items

Managed area / Maintenance related process	**Telephone services** (Note)	**Leased Circuit services**	**ISDN services**	**Data transmission services**
	Information items			
Bringing-into-service	– Transmission route – Transmission media – Ready for service date – Testing date – Circuit designation – Reference to the appropriate ITU-T Recommendations			
Fault report	– Fault start time (based on fault occurrence and/or its detection) – Fault status – Permission for testing – Fault related data log			
Network fault report	– Fault detection time – Fault status – Permission for testing – Expected restoration time – Cause(s) – Fault related data log			
Fault localization	– Localization result by customer – Localization result by service provider			
Service restoration	– Requirement/capability for service restoration – Expected service restoration time – Means for service restoration – Confirmation of service restoration			
Network repair	– Expected network repair time – Means for network repair – Confirmation of network repair			
Fault follow-up	– Restoration schedule –- Progress			
Planned outage	– Planned outage schedule (start/end time) – Reason – Affected area – Normality confirmation test result by both customer and service provider			
NOTE – For telephone services, the above information items are used for special telephone services only, for example sound-program transmission on fixed (non-switched) public circuits.				

5.4 Reference information part

Reference information part is used in case of necessity to proceed maintenance efficiently in collaboration with the customer, and it can be mainly classified into contract information (Note 1) and service agreement information (Note 2). Typical maintenance information items which are related to the maintenance service contract or maintenance service agreement are:

– contract identifier (e.g. contract number);
– contact identifier (e.g. authentication identification and password);
– service starting date;
– service hours (for normal and particular days of the year);
– type of contract;
– access network type (e.g. mobile, ISDN, leased circuit);
– network configuration (e.g. transmission routes, transmission media, automatic restoration);
– traffic volume;
– fault status and occurrence;
– testing status;
– call connectivity quality;
– transmission quality;
– congestion status;
– service availability.

NOTE 1 – A contract represents a formal business agreement between service provider and customer for its maintenance service.

NOTE 2 – A maintenance service agreement may not be formal nor has a legal binding as maintenance service contract.

It is to be noted that for this information part the maintenance information items depend on the managed area.

6 Examples of maintenance processes

An example of each maintenance process is described in Annex A to help understanding the "Generic part and the Specific part" of MICC based on maintenance process reference model (see Recommendation M.1535).

6.1 Bringing-into-service process

An example of bringing-into-service process is given in Figure A.1.

6.2 Fault report process (customer to service provider)

A customer detects malfunction in the service by receiving report from end-user or alarm report from its own communication facilities. Then he can confirm the status of this malfunction by notifying the end-user for the detail of test results and type of alarm on the facilities.

The customer tries to specify where the cause of malfunction is located (at his own premises, customer side or at the service provider side). Then he accesses a customer contact point to report the malfunction to the service provider. An example of fault report process is given in Figure A.2.

6.3 Network fault report process (service provider to customer)

An example of network fault report process is given in Figure A.3.

6.4 Fault localization process

An example of fault localization process is given in Figure A.4.

6.5 Service restoration process

An example of service restoration process is given in Figure A.5.

6.6 Network repair process

An example of network repair process is given in Figure A.6.

6.7 Fault follow-up process

An example of fault follow-up process is given in Figure A.7.

6.8 Planned outage process

An example of planned outage process is given in Figure A.8.

7 Information classification

7.1 Utility value of information

Maintenance information between customer and service provider can be classified in the following three types from the viewpoint of the utility value of information:

1) Type A: information supplied to customers by which they can judge what kind of action is necessary for using telecommunications services;
2) Type B: information supplied to customers by which they can use network/services efficiently;
3) Type C: information supplied to customers which is useful for their business.

7.2 Timing of information

Maintenance information between customer and service provider can be classified in the following three types from the viewpoint of the timing:

1) Type 1: information provided to a customer when the customer claims or following specific request according to service and/or network fault;
2) Type 2: information provided to a customer spontaneously when the service provider detects service and/or network fault status;
3) Type 3: information provided to a customer according to the customer's special requirements (e.g. long-term traffic volume data).

7.3 Standardization levels

Standardization levels are classified in the following three levels made up of the matrix of the utility value of information and the timing of information:

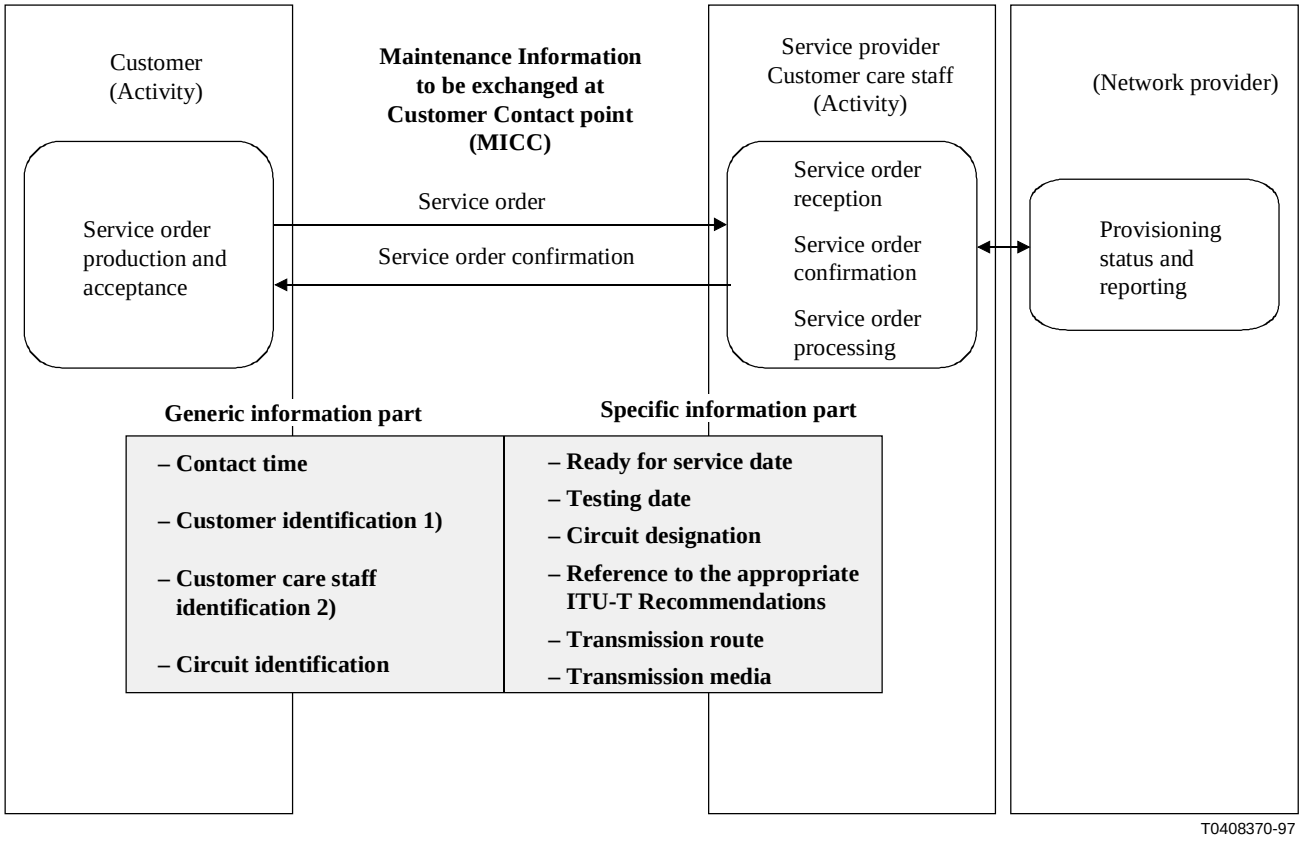
1) Basic (Mandatory): to provide the information is mandatory regardless of customer's demands. This information is included in the maintenance service contract between the service provider and customer;

2) Essential (Option level 1): to provide the information only when a customer demands the information;

3) Optional (Option level 2): whether or not the information is provided for a customer is a negotiated matter between customer and service provider.

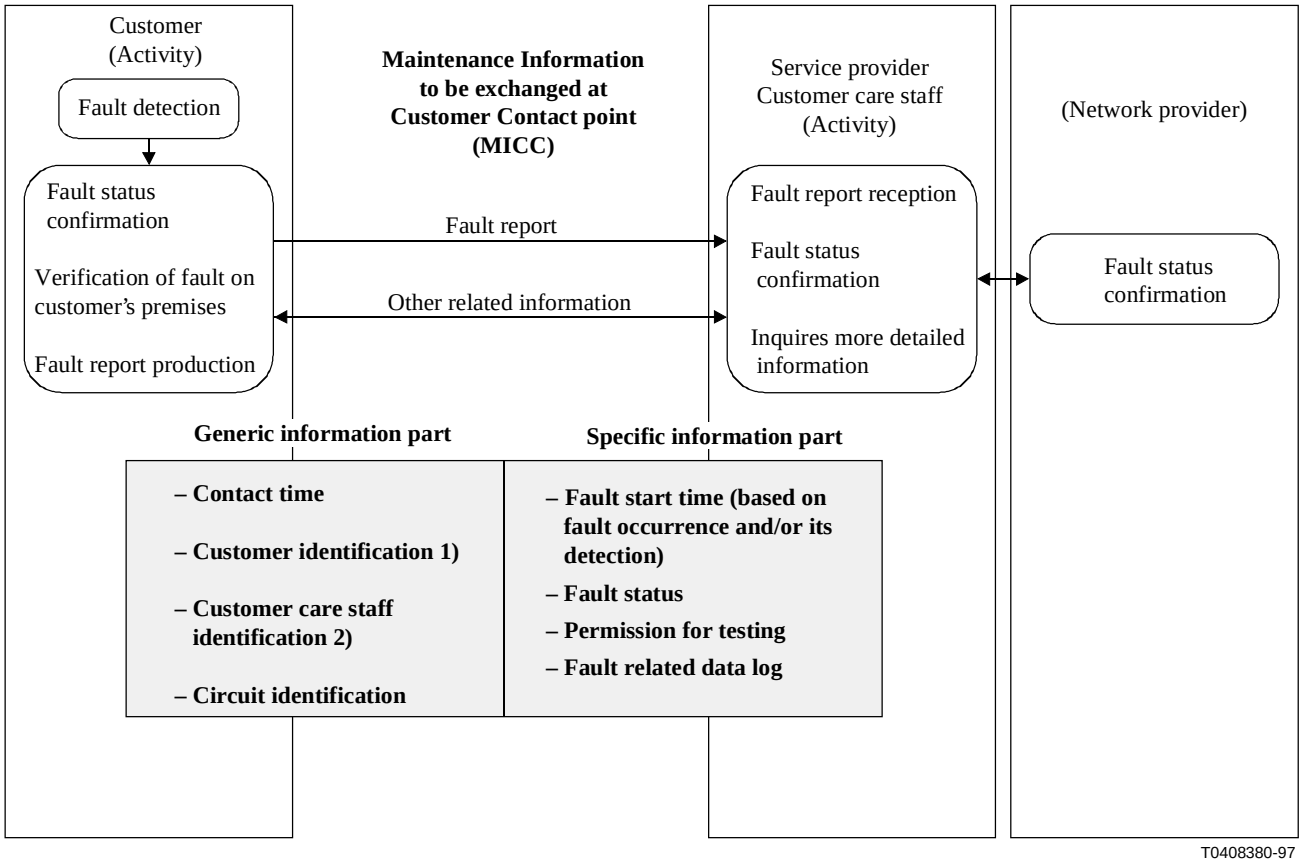
ANNEX A

Examples of maintenance process



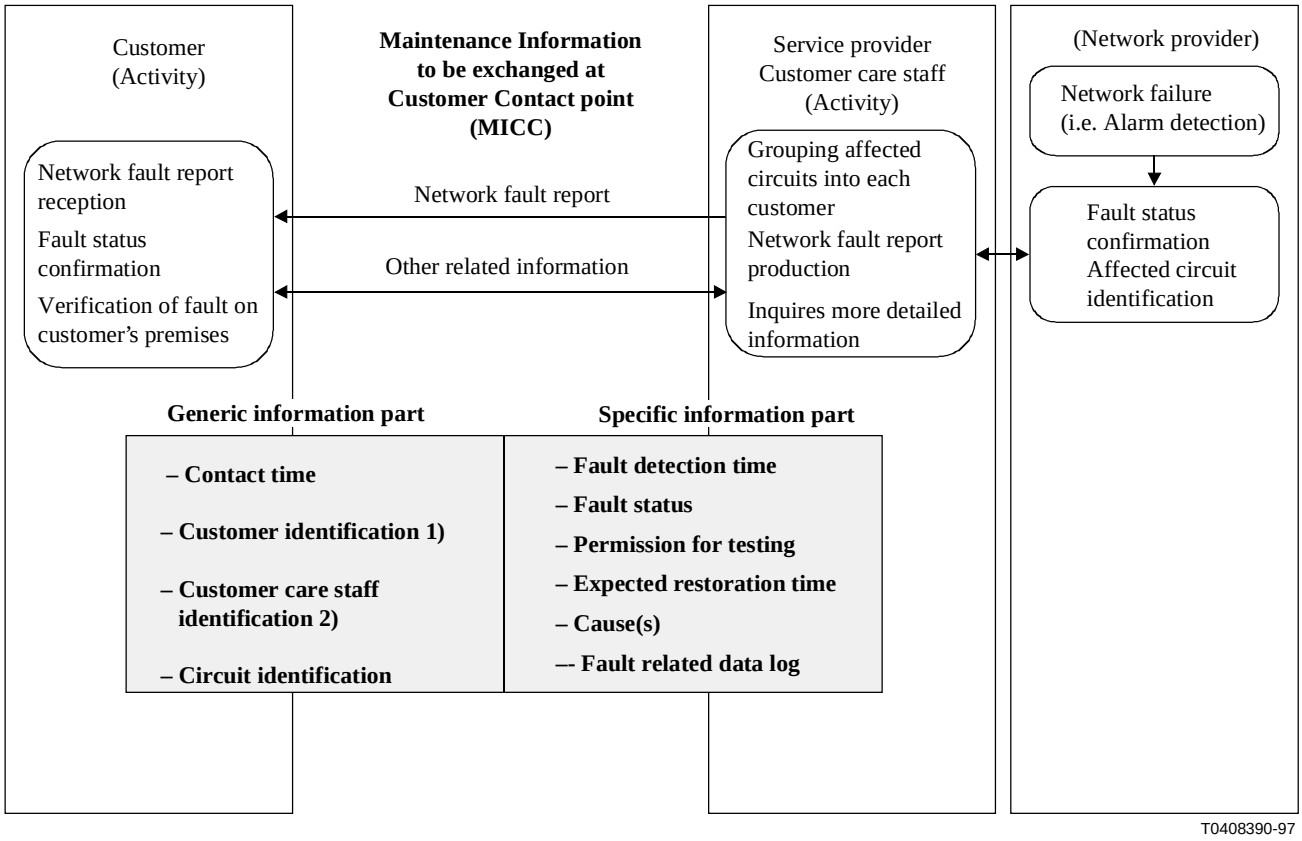
1) e.g. company name, contact person, address, tel., fax, telex, e-mail.
2) e.g. service provider name, contact person, address, tel., fax, telex, e-mail.

Figure A.1/M.1537 – Example of bringing-into-service process



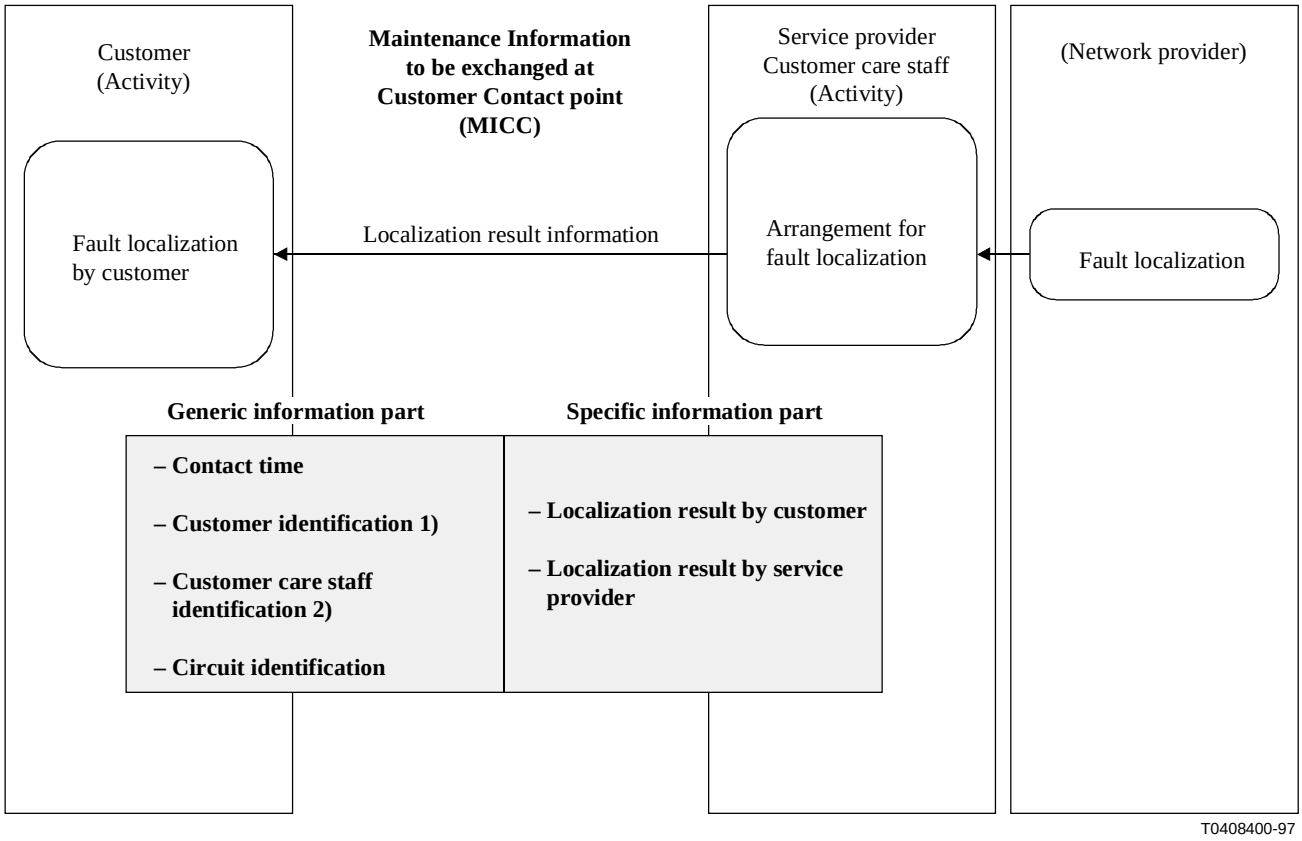
1) e.g. company name, contact person, address, tel., fax, telex, e-mail.
2) e.g. service provider name, contact person, address, tel., fax, telex, e-mail.

Figure A.2/M.1537 – Example of fault report (customer to service provider) process



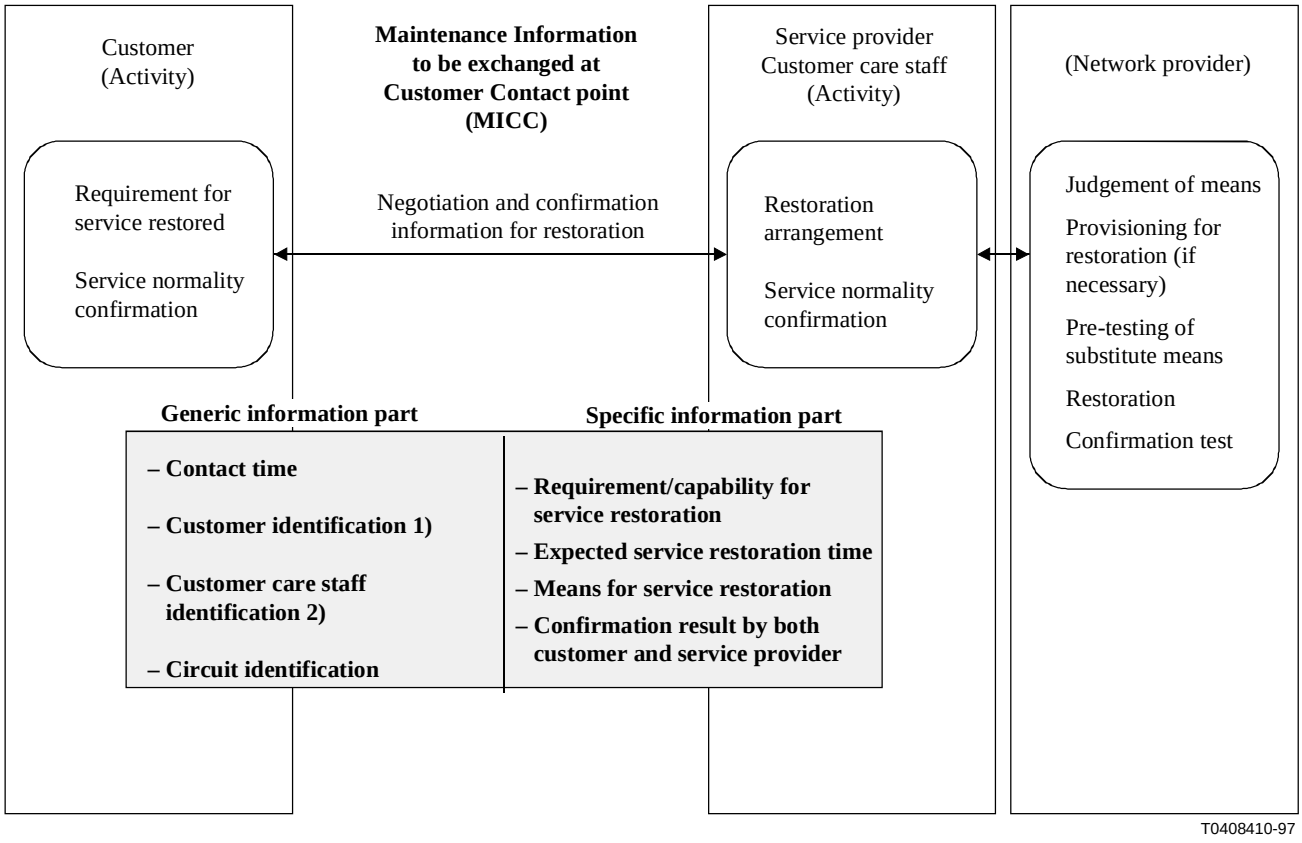
1) e.g. company name, contact person, address, tel., fax, telex, e-mail.
2) e.g. service provider name, contact person, address, tel., fax, telex, e-mail.

Figure A.3/M.1537 – Example of network fault report (service provider to customer) process



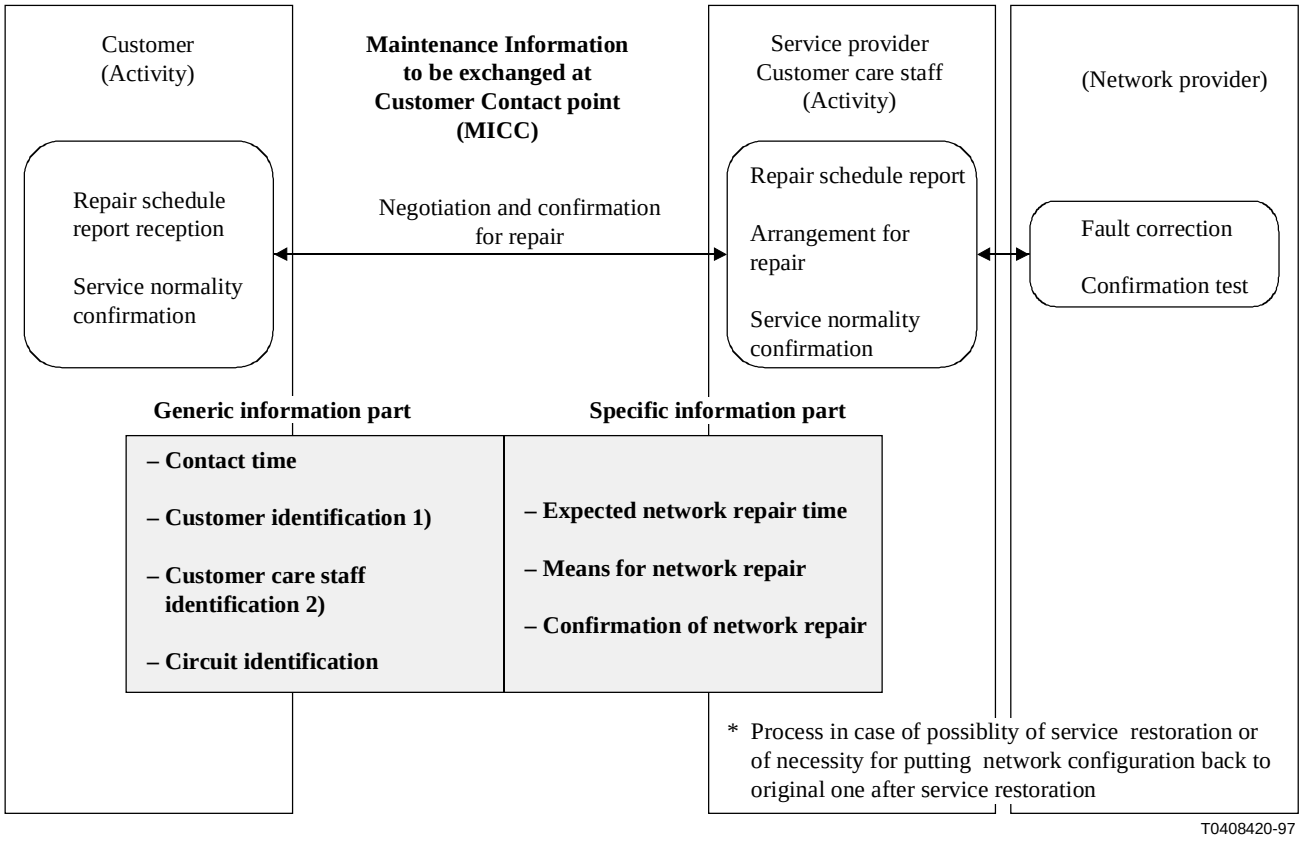
1) e.g. company name, contact person, address, tel., fax, telex, e-mail.
2) e.g. service provider name, contact person, address, tel., fax, telex, e-mail.

Figure A.4/M.1537 – Example of fault localization process



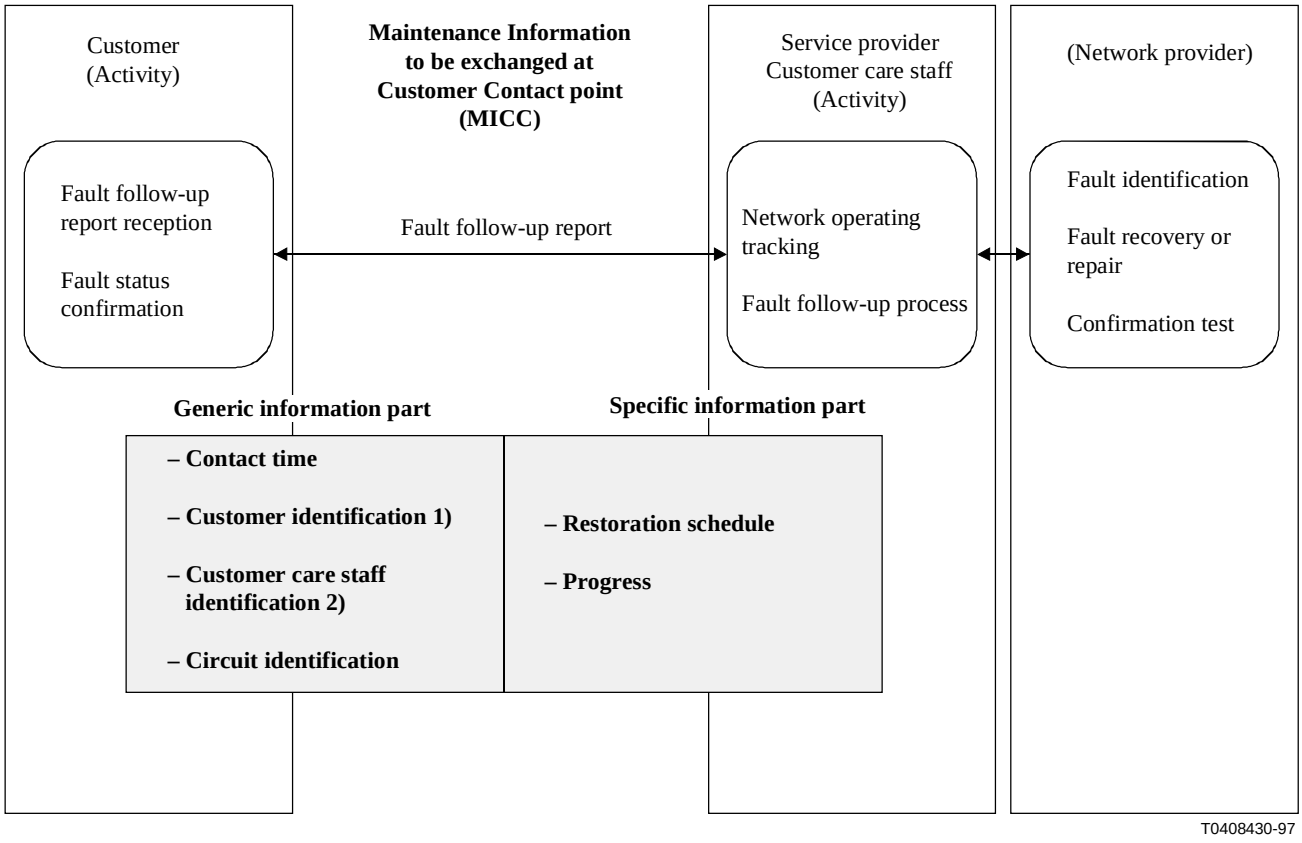
1) e.g. company name, contact person, address, tel., fax, telex, e-mail.
2) e.g. service provider name, contact person, address, tel., fax, telex, e-mail.

Figure A.5/M.1537 – Example of service restoration process



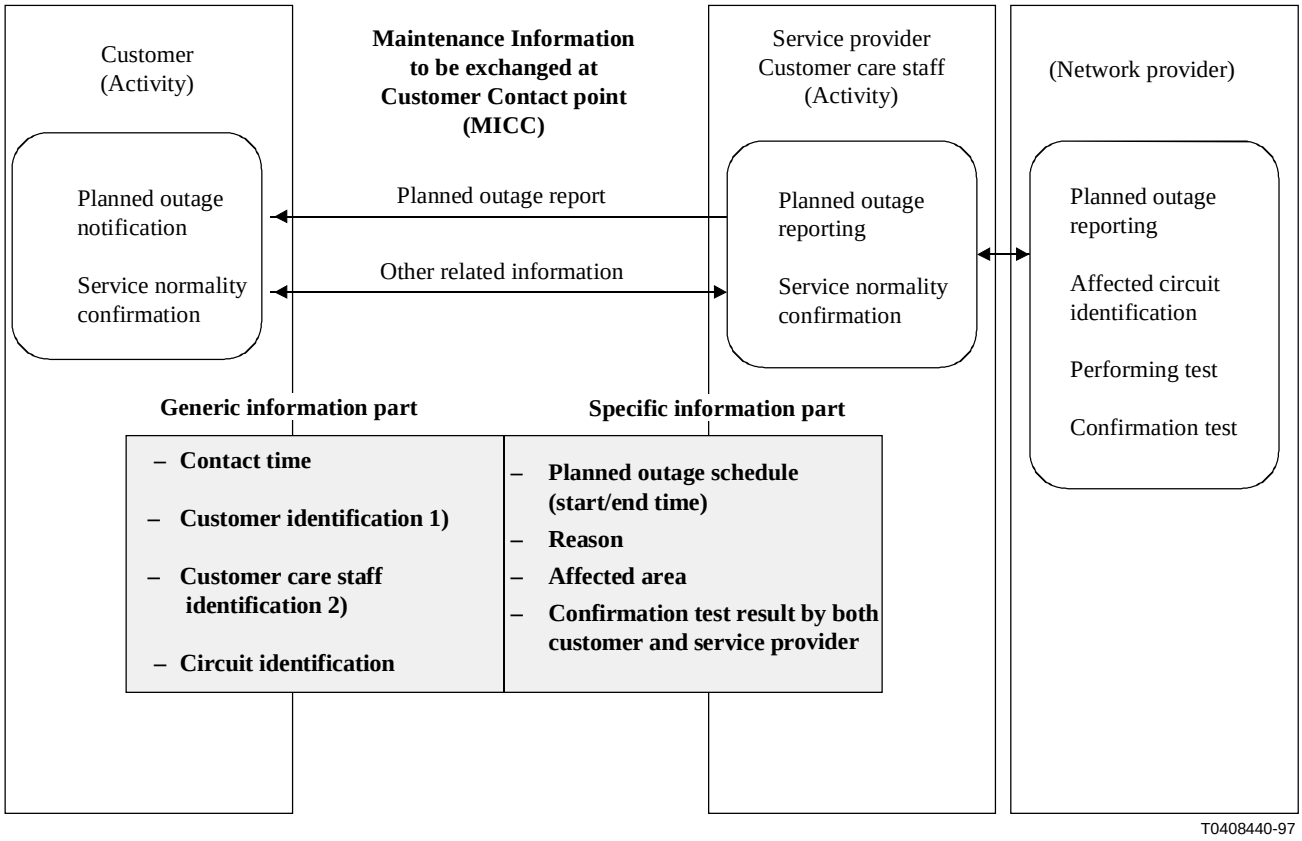
1) e.g. company name, contact person, address, tel., fax, telex, e-mail.
2) e.g. service provider name, contact person, address, tel., fax, telex, e-mail.

Figure A.6/M.1537 – Example of network repair process



1) e.g. company name, contact person, address, tel., fax, telex, e-mail.
2) e.g. service provider name, contact person, address, tel., fax, telex, e-mail.

Figure A.7/M.1537 – Example of fault follow-up process



1) e.g. company name, contact person, address, tel., fax, telex, e-mail.
2) e.g. service provider name, contact person, address, tel., fax, telex, e-mail.

Figure A.8/M.1537 – Example of planned outage process

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