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

International transport network

Operational procedures for the maintenance of the transport network

ITU-T Recommendation M.2130

(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 the list of ITU-T Recommendations.

Operational procedures for the maintenance of the transport network

Summary

This ITU-T Recommendation specifies the operational procedures that two international maintenance organizations have to follow in case of failure or degradation of the transport network: paths, section or synchronization. These procedures are required in order to: localize and clear the fault, permit protection/reversibility and facilitate restoration and return to the original configuration. The maintenance procedures in this ITU-T Recommendation defines reference points requiring information to be exchanged between maintenance organizations of involved Network Operators/Service Providers.

Source

ITU-T Recommendation M.2130 was revised by ITU-T Study Group 4 (1997-2000) and approved under the WTSC Resolution 1 procedure on 4 February 2000.

Keywords

Degradation, failure, fault, maintenance, path, procedure, protection, restoration, reversibility, section.

FOREWORD

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The World Telecommunication Standardization Conference (WTSC), 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 WTSC 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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Introduction

This ITU-T Recommendation specifies the operational procedures to manage faults occurring without recovery mechanisms, with automatic protection (revertive and non-revertive) or manual protection. It also covers the operational procedure for restoration plan.

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ITU-T Recommendation M.2130

Operational procedures for the maintenance of the transport network

1 Scope

This ITU-T Recommendation covers PDH and SDH international paths, sections and synchronization.

A brief description of maintenance procedures is provided. These maintenance procedures follow the approach expressed in ITU-T Recommendations M.20 [2] and M.21 [3], the PDH and SDH paths and sections maintenance procedures expressed in ITU-T Recommendations M.2100 and M.2101 [7], the SDH paths and sections recovery procedures expressed in ITU-T Recommendation M.2102 [8], PDH and SDH maintenance procedures expressed in ITU-T Recommendation M.2120 [9].

Synchronization faults usually result in degradation rather than unavailability of the supported trails. The relevant maintenance procedure is detailed in Annex A.

The following six cases are addressed:

- 1) no recovery mechanisms;
- 2) automatic protection (revertive);
- 3) automatic protection (non revertive);
- 4) manual protection;
- 5) restoration plans (automatic restoration revertive, automatic restoration non revertive, manual restoration);
- 6) extraneous events.

The relevant flow charts are provided.

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.

- [1] ITU-T Recommendation G.810 (1996), *Definitions and terminology for synchronization networks*.
- [2] CCITT Recommendation M.20 (1992), *Maintenance philosophy for telecommunication networks*.
- [3] CCITT Recommendation M.21 (1992), *Maintenance philosophy for telecommunication services*.
- [4] ITU-T Recommendation M.60 (1993), *Maintenance terminology and definitions*.
- [5] ITU-T Recommendation M.1400 (1997), *Designations for international networks*.
- [6] ITU-T Recommendation M.2100 (1995), *Performance limits for bringing-into-service and maintenance of international PDH paths, sections and transmission systems*.