

Recommendation

ITU-T M.3370 (03/2025)

SERIES M: Telecommunication management, including
TMN and network maintenance

Telecommunications management network

Telecommunication preventive maintenance task – Overview

ITU-T M-SERIES RECOMMENDATIONS

Telecommunication management, including TMN and network maintenance

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Recommendation ITU-T M.3370

Telecommunication preventive maintenance task – Overview

Summary

Recommendation ITU-T M.3370 describes the procedure, requirements and classification for entities of preventive maintenance task. Traditional operation and maintenance are mainly based on passive response and lack the ability to predict and prevent failures in advance. By introducing preventive maintenance, potential service quality degradation can be avoided, ensuring a good user experience.

History*

Edition	Recommendation	Approval	Study Group	Unique ID
1.0	ITU-T M.3370	2025-03-29	2	11.1002/1000/16281

Keywords

Entity of preventive maintenance, preventive maintenance task, procedure of preventive maintenance task.

* To access the Recommendation, type the URL <https://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID.

FOREWORD

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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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Recommendation ITU-T M.3370

Telecommunication preventive maintenance task – Overview

1 Scope

This Recommendation provides the overview of telecommunication preventive maintenance task. It describes procedure of preventive maintenance task, requirements of preventive maintenance task and classification for entities of preventive maintenance task.

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 M.20](#)] Recommendation ITU-T M.20 (1992), *Maintenance philosophy for telecommunication networks*.
- [[ITU-T M.3040](#)] Recommendation ITU-T M.3040 (2019), *Principles for on-site telecommunication smart maintenance*.
- [[ITU-T M.3364](#)] Recommendation ITU-T M.3364 (2020), *Requirements for on-site telecommunication smart maintenance management function*.
- [[ITU-T M.3382](#)] Recommendation ITU-T M.3382 (2022), *Requirements for work order processing in telecom management with artificial intelligence*.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 anomalies [ITU-T M.20]: An anomaly is a discrepancy between the actual and desired characteristics of an item. The desired characteristic may be expressed in the form of a specification. An anomaly may or may not affect the ability of an item to perform a required function.

3.1.2 artificial intelligence model [b-ITU-T M.3080]: The model created by applying artificial intelligence (AI) technology to data to learn from.

3.1.3 defects [ITU-T M.20]: A defect is a limited interruption in the ability of an item to perform a required function. It may or may not lead to maintenance action depending on the results of additional analysis.

3.1.4 failures [ITU-T M.20]: A failure is the termination of the ability of an item to perform a required function.

NOTE – After failure, the item has a fault.

3.1.5 fault [ITU-T M.20]: A fault is the inability of an item to perform a required function, excluding that inability due to preventive maintenance, lack of external resources or planned actions.

NOTE – A fault is often the result of a failure of the item itself, but may exist without prior failure.

3.1.6 item [b-ITU-T E.800]: Any part, device, subsystem, functional unit, equipment or system that can be individually considered.

NOTE – An item may consist of hardware, software or both, and may also include people, e.g., operators in a telephone operator system.

3.1.7 maintenance executor [ITU-T M.3364]: A drone, or an intelligent maintenance robot, or a maintenance personnel equipped with a wearable device, to carry out maintenance tasks.

3.1.8 model [b-ITU-T F.748.16]: An output created by an algorithm running on training data that can generate an inference or prediction, based on input data.

3.1.9 network element [b-ITU-T M.3010]: An architectural concept that represents telecommunication equipment (or groups/parts of telecommunication equipment) and supports equipments or any item or groups of items considered belonging to the telecommunications environment that performs network element functions (NEFs).

3.1.10 on-site overhaul [ITU-T M.3040]: A kind of on-demand preventive maintenance performed at facility site in the condition of natural disasters or major events.

3.1.11 on-site patrol [ITU-T M.3040]: A kind of routine preventive maintenance periodically performed at a facility site.

3.1.12 preventive maintenance [ITU-T M.20]: The maintenance carried out at predetermined intervals or according to prescribed criteria and intended to reduce the probability of failure or the degradation of the functioning of an item.

3.1.13 work order [ITU-T M.3382]: A ticket through which the superior department assigns a network management, operation and maintenance task to the subordinate department.

3.2 Terms defined in this Recommendation

This Recommendation defines the following term:

3.2.1 preventive maintenance task: A set of actions performed under maintenance, carried out according to prescribed criteria and intended to reduce the probability of failure or the degradation of an item's functioning.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

AC	Alternating Current
AI	Artificial Intelligence
BS	Base Station
BSS	Base Station System
CFP	Centum Form-factor Pluggable
DC	Direct Current
ICT	Information and Communication Technology
IP	Internet Protocol
NE	Network Element
OAM	Operations, Administration and Maintenance
OSI	Open System Interconnection
QSFP	Quad Small Form-factor Pluggable