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PROTECTION OF CABLES AND OTHER ELEMENTS OF
OUTSIDE PLANT

Optical fibre cable network maintenance

Recommendation ITU-T L.25

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Summary

Recommendation ITU-T L.25 deals with general features in relation to the maintenance and operation of optical fibre cable networks. This is the latest revision of a Recommendation that was first published in 1996. This revision is intended to be appropriate for the current situation with respect to optical fibre cable network maintenance and related Recommendations.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T L.25	1996-10-18	6	11.1002/1000/3889
2.0	ITU-T L.25	2015-01-13	15	11.1002/1000/12411

* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

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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.

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Optical fibre cable network maintenance

1 Scope

This Recommendation describes the general features and definitions for the maintenance and operation of optical fibre cable networks for use in telecommunication services.

The objective of this Recommendation is to identify the general functions of optical fibre cable network maintenance, and to provide information on relevant Recommendations in the field of maintenance and operation of optical fibre cable networks.

This Recommendation deals with non-gas pressurized cable networks. The maintenance and operation of the transmission equipment and facility management are not dealt with in this Recommendation. Submerged optical fibre cable such as that used in submarine systems is also not dealt with in this Recommendation, which is described in, for example, [ITU-T G.979].

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 G.979] Recommendation ITU-T G.979 (2012), *Characteristics of monitoring systems for optical submarine cable systems*.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation does not use terms defined elsewhere.

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms relevant to optical fibre cable network maintenance:

3.2.1 control: Activities to make arrangements on NEs for the purpose of maintenance.

3.2.2 customer service operation: A service operation designed to handle requests and complaints from customers.

3.2.3 fault: An undesirable event occurring in NEs, fibres or cables that provide telecommunication services. It includes events that interrupt services and their causes.

3.2.4 fibre identification: To identify a target optical fibre in an optical fibre cable network.

3.2.5 fibre transfer: To splice one fibre to an alternate fibre during cable repair work, re-routing or network reconfiguration.

3.2.6 maintenance support, testing and monitoring system: Systemized functions for optical fibre cable network maintenance.

3.2.7 optical fibre cable network: A network between transmission equipment that is composed of network elements (NEs): optical fibres and cables; optical components such as optical splitters; and test access devices.

3.2.8 optical fibre identification: A technique for fibre identification by measuring certain optical characteristics to avoid incorrect cutting and/or connection of an optical fibre at a worksite.

3.2.9 optical fibre line: The optical path between terminal equipment.

3.2.10 outside plant database: A facility database of optical fibre distribution that contains information on all physical cables and supporting infrastructures.

3.2.11 post-fault maintenance: Tasks performed after fault recognition. It includes tasks for identifying fault locations and restoring the network to an operational condition such that it is capable of providing telecommunication services.

3.2.12 preventative maintenance: (Also known as preventive maintenance) Tasks performed to ensure that NEs are fully operational and capable of providing telecommunication services. It includes tasks for detecting faults that affect (or have the potential to affect) telecommunication services.

3.2.13 surveillance: Activities to monitor NEs for the purpose of observing the operational condition.

3.2.14 test access device: A coupler for launching a test light into an optical fibre line.

3.2.15 testing: Activities for evaluating faults and the condition of NEs after installation, and for identifying fault locations.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

B-OTDA	Brillouin Optical fibre Time Domain Analysis
NE	Network Element
NEC	Network Element Control
OLT	Optical Line Terminal
OTDR	Optical Time Domain Reflectometry
PDS	Passive Double Star
PON	Passive Optical Network
SEM	System Element Manager
WDM	Wavelength Division Multiplexing

5 Conventions

None.

6 General features of optical fibre cable network maintenance

6.1 Maintenance category

Tasks performed by telecommunication operators with respect to the maintenance of optical fibre cable networks fall into two categories: preventative maintenance and post-fault maintenance.