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Research Article

ANALYZES THE MEANING OF THE APPLICATION TESTING SOFTWARE OF THE FIBRE OPTICAL SYSTEMS

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ABSTRACT

In this article, we analyze the testing processes of optical communication systems and their fibre test aspects. There is considered the meaning and functions of the software applications. Optical communication systems have their equipment, fibres, and software applications. They have to work, in coordination. Therefore testing of equipment and other parts is completed by software applications.

KEYWORDS

Solar energy, geothermal energy, sources, converter, energy capacity, life condition, society relation.

INTRODUCTION

This article analyzes the testing conditions and processes of optical communication systems. Considered their aspects of the meaning of programmed tests of optical fibre communication systems. The application software will be installed on personal computers at the Operation and Maintenance Centre and central office. The

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main functions of the application software are described. Functions of application software:

1. Test Operations Function

Fibre identification; Section Loss test; OTDR test; Continuous OTDR(Optical Time Domain Reflection meter) test; Preventive Maintenance; Result reception.

2. Test Data and Result Management Function

Central office information management; Test equipment module information management; selector information management; Cable information management

Fibre information management; Test result management.

3. Security Function

Operations terminal information management; Operator information management

Password management.

4. System Reports Management Function

Alarm history inquiry; Failure history inquiry.

The growing importance of transmission systems using optical as a physical carrier is resulting in an increase in economic resources that telecommunication providers are dedicating to the corrective and preventive maintenance of those systems and carriers. The essential objective of such maintenance is to achieve the highest quality and best economic output from the said systems and carriers. Automatic and centralized monitoring systems, unlike manual operators, provide rational and exhaustive control of the plant or designated elements thereof. Existing automatic monitoring systems, dedicated to optical fibre monitoring, are based on the development of specific elements and the availability of optical switches with a large number of channels that, in conjunction with the gradual reduction in the price of auxiliary passive elements, make for flexible systems at very competitive prices, with a high degree of modularity. In addition, the possibility of the system working in the fourth transmission window extends monitoring not only to fibres working in the second window but also to those working in the third and even in both [6,8,10]. The optical fibre monitoring system used by TelefUnica de Espana (for example) meets its demands and specifications. This makes for a system that is totally focused on monitoring and management of the optical fibre plant, with maximum output and efficiency in all its functions. The system manages the reception of alarms in the fibres when these are generated by breaks or degradations. The system also conducts a series of measurements aimed at identifying the state of the fibres at any time. The system is composed of all the optical fibre plant terminals (OFPT) strategically distributed over the plant to be monitored. These terminals collect information on the state of the fibres and, by comparing the actual state with a determined threshold, generate an alarm situation when the state optical fibre monitoring system (OFMS) & General description, referred to requires it. The

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information collected by the plant terminals assigned to a specified monitoring area is sent to the control centre responsible for the maintenance and conservation of the area in question. Referred to requires it. The information collected by the plant terminals assigned to a specified monitoring area is sent to the control centre responsible for the maintenance and conservation of the area in question [7,9,11].

System performance. Analyzed from the operational point of view, the optical fibres monitoring system described in this appendix has the following functions:

- Monitoring of vacant fibres as well as fibres in service by means of reflecting o metric techniques in the second, third and fourth transmission windows.
- Detection and location (using the corresponding mathematical algorithm) of degradations and breaks in the fibres.
- Automatic execution of measurements in the event of alarms in the line transmission equipment (LTE).
- Execution of measurements on request from a higher hierarchy (remote control centre, operation site).
- Recording of singular points (splices, manhole, etc.) that allow the events of the trace to be associated with their geographical location.
- Assignment of vacant fibres to various transmission systems with the purpose of executing measurements in these fibres when any alarm occurs in the LTE and in regenerators that are not connected to the fibres.
- Recording of historical and reference measurements enabling a provisional evolution analysis.

CONCLUSION

In conclusion given that, points:

- Measure program part is one of the main parts of the system;
- Measure program part must be answered to standard;
- the application testing software of the fibre optical systems is the complicated part of the system;
- the application testing software works on the top level of the OSI;
- the application testing software controls of level one of the OSI;
- it demands periodic update and upgrades.
- and others.

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