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SERIES L: CONSTRUCTION, INSTALLATION AND
PROTECTION OF CABLES AND OTHER ELEMENTS OF
OUTSIDE PLANT

**As-laid report and maintenance/repair log for
marinized terrestrial cable installation**

ITU-T Recommendation L.29

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As-laid report and maintenance/repair log for marinized terrestrial cable installation

Summary

This Recommendation describes the documentation/information that Companies, involved in the installation, maintenance/repair of Marinized Terrestrial Cables, should provide to the Purchasers.

Source

ITU-T Recommendation L.29 was prepared by ITU-T Study Group 6 (2001-2004) and approved under the WTSA Resolution 1 procedure on 13 January 2002.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. 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 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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As of the date of approval of this Recommendation, 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.

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As-laid report and maintenance/repair log for marinized terrestrial cable installation

1 Introduction

A marinized terrestrial cable is an underwater optical fibre cable construction, based on a conventional multi-fibre terrestrial cable core protected to withstand the marine environment, designed for unrepeated applications, that is, without underwater line amplifiers, hence without the need to carry electrical power and tested for use in non-aggressive shallow waters, with a varying repair capability.

The difference with respect to a repeaterless submarine cable can be found in the definition given, for such a cable, in ITU-T Rec. G.972.

In proximity of the landing points there are often many cables coming from various routes. In the shore-end portions, the cables and related protections such as burials, articulated steel pipes, etc. are closer and closer. Moreover, often the actual route is quite different from that foreseen as the laying reference route, as designed according to the various surveys, and the related documents are not updated. This situation could negatively affect subsequent installations and maintenance operations of cables and other services.

In order to update charts, the national Hydrographic Institute, or any other local Authority, has to be provided with the as-laid and as-built cable route information both after completion of the installation works, and after any repair if significant route changes occur. This will enable the proper design of project routes for future underwater services and cables, and allow safe maintenance activities over existing lines so that overlaying and plants damage can be avoided.

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.

- ITU-T Recommendation G.972 (2000), *Definition of terms relevant to optical fibre submarine cable systems*.
- ITU-T Recommendation G.976 (2000), *Test methods applicable to optical fibre submarine cable systems*.

3 As-Laid Report

The companies in charge of the installation of cables in shallow waters, especially close to the landing points of sea, lake and river shores, should provide the Purchasers with an *As-laid Report* after the completion of the work and a *Maintenance/Repair Log* after any repair or replacement.

The *as-laid report* should contain, at least, the following information:

- detailed As-laid position list (both in geographical and plane coordinates with progressive Kilometer Posts along the route) with all the relevant points such as Turning Points, course alterations, joint positions and crossing points with other services (active and retired). Such a position list should be provided with geodetic references and local datum shift parameters

for example, from WGS-84 (World Geodetic System 84) for the main international geodetic system;

- general layout map with the whole cable route and sections;
- detailed landing point map containing, at minimum, the following information:
 - cable position after burial in the landing and shore approach area up to the beach joint;
 - position of all the relevant structures at shore, if any, such as spare coils, concrete mooring blocks, signal poles;
 - burial depth for all the above-mentioned structures;
 - brief description and depth of the cable protections at sea in the different sections;
 - any useful information to determine the position of the cable and any relevant structures for maintenance or new system installation purposes.

4 Maintenance/Repair Log

Such documentation should also be updated on the basis of a *Maintenance/Repair Log* with the following information:

- operation number and date;
- name of the plant repaired or replaced;
- cable repair ship;
- details of repairs or replacement (cable type(s), quantity of original cable removed, quantity of spare cable installed, repair joint(s) locations and burial as applicable);
- position of failure (longitude, latitude and water depth). These coordinates have to be provided in the same geodetic references showed in the As-laid Report of the plant;
- as-laid map (i.e. for the deviation (e.g. "omega") or course alteration resulting on sea bed after replacement);
- measurements.

The *As-laid Report* and the *Maintenance/Repair Log* should be required in the installation or repair supply contracts, as well as the delivery time, and should be provided after the completion of the works.

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