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CONSTRUCTION, INSTALLATION AND PROTECTION OF CABLES AND OTHER ELEMENTS OF OUTSIDE PLANTS

OPTICAL LOCAL DISTRIBUTION NETWORKS – FACTORS TO BE CONSIDERED FOR THEIR CONSTRUCTION

ITU-T Recommendation L.15

(Previously "CCITT Recommendation")

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. The 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 Conference (WTSC), which meets every four years, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

ITU-T Recommendation L.15 was prepared by the ITU-T Study Group VI (1988-1993) and was approved by the WTSC (Helsinki, March 1-12, 1993).

NOTES

1 As a consequence of a reform process within the International Telecommunication Union (ITU), the CCITT ceased to exist as of 28 February 1993. In its place, the ITU Telecommunication Standardization Sector (ITU-T) was created as of 1 March 1993. Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.

In order not to delay publication of this Recommendation, no change has been made in the text to references containing the acronyms "CCITT, CCIR or IFRB" or their associated entities such as Plenary Assembly, Secretariat, etc. Future editions of this Recommendation will contain the proper terminology related to the new ITU structure.

2 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

The existing local distribution network for customer access consists almost entirely of copper pairs for all countries. However, recent progress in the application of optical plant technology to local distribution networks has provided substantial experimental experience in several countries. This has been taken into account to determine some of the factors to be considered for construction of optical local distribution networks.

Firstly, it may not be appropriate simply to replace copper conductor cables by optical fibre cables since the characteristics of optical fibre cables differ very significantly from those of copper conductor cables. Secondly, advances in technology provide potential for a greatly increased range of services that can include wideband direct to the customer. Network architectures therefore require to be determined taking into consideration both operational and maintenance system requirements.

This Recommendation sets out practical advice on choice and use of optical plant for the construction of optical distribution networks. Several different architectures are described in the annex to this Recommendation to assist in understanding the selection of hardware. The advice given is based on the experience gained mainly from early applications and the user should be aware that rapid progress will lead to early revision of this Recommendation.