SLOVENSKI STANDARD

PSIST EN 301 021:1999

01-september-1999

Prenos in multipleksiranje (TM) - Digitalni radiorelejni sistemi (DRRS) - Ļasovno porazdeljeni sodostop (TDMA) - Digitalni radijski sistem DRRS tipa toļka-do-veļtoļk v frekvenļnih pasovih za frekvenļno porazdeljeni duplex (FDD) v območju od 3 GHz do 11 GHz

Transmission and Multiplexing (TM); Digital Radio Relay Systems (DRRS); Time Division Multiple Access (TDMA); Point-to-multipoint DRRS in Frequency Division Duplex (FDD) bands in the range 3 GHz to 11 GHz

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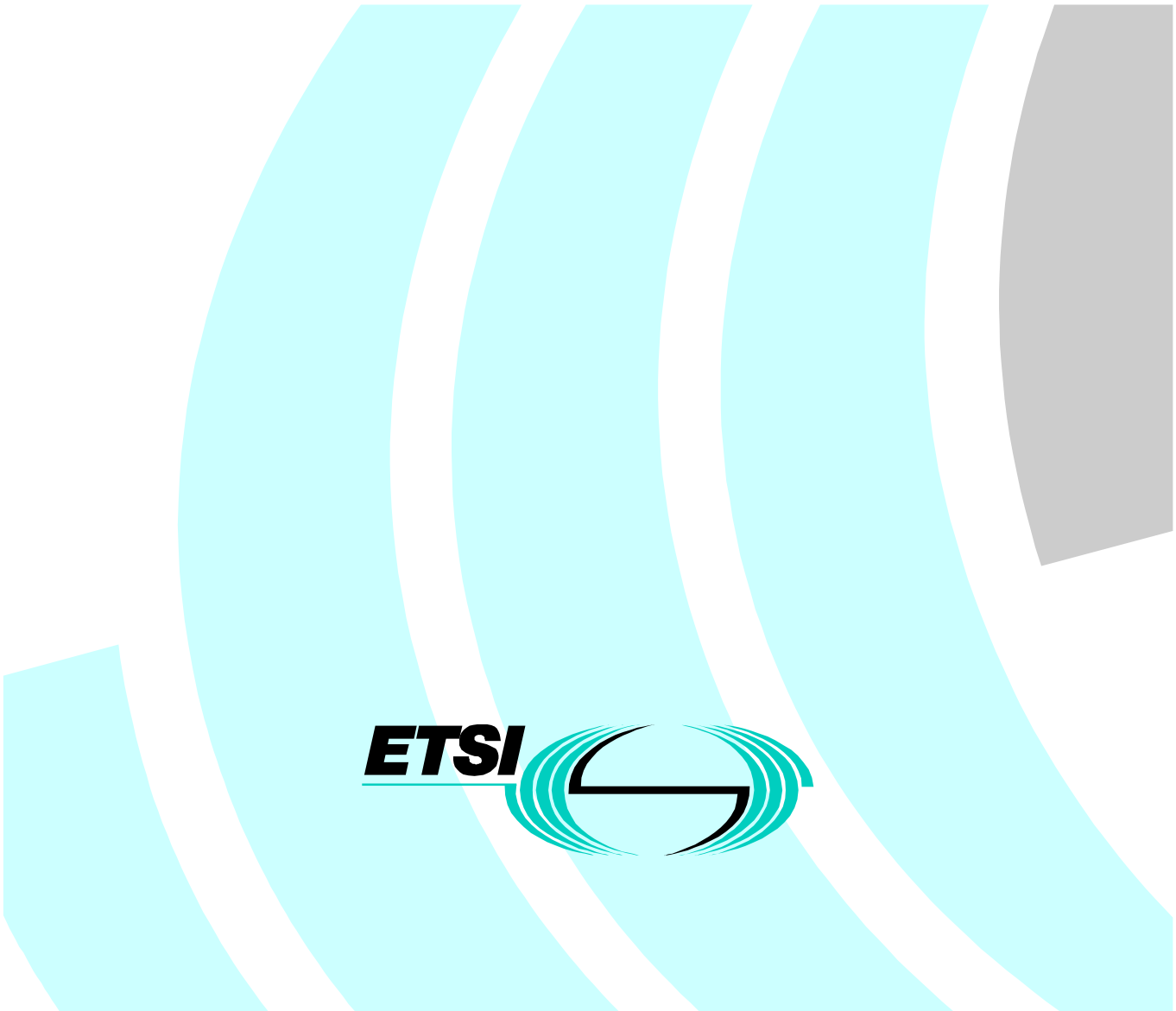
European Standard (Telecommunications series)

Transmission and Multiplexing (TM); Digital Radio Relay Systems (DRRS); Time Division Multiple Access (TDMA); Point-to-multipoint DRRS in Frequency Division Duplex (FDD) bands in the range 3 GHz to 11 GHz



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Contents

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Transmission and Multiplexing (TM).

National transposition dates	
Date of adoption of this EN:	3 July 1998
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Introduction

The main field of application of Point-to-Multipoint (P-MP) systems is to provide access to both public and private networks (Public Switched Telephone Networks (PSTN), Private Data Networks (PDN), ...). By means of P-MP systems the network service area may be extended to cover both distant and scattered user locations; and the systems may be applied to build new access networks covering both urban and rural areas.

Users are offered the full range of services by the particular public or private network. Users have access to these services by means of the various standardized user network interfaces (2 wire loop, new data services and Integrated Services Digital Network (ISDN) ranging from basic rate to n x primary rate)).

P-MP systems provide standard network interfaces and transparently connect users to the appropriate network node. These systems allow a service to be connected to a number of users ranging from a few to several thousands and over a wide range of distances.

P-MP systems are generally configured as Pre-Assigned Multiple Access (PAMA) radio systems or as Demand Assigned Multiple Access (DAMA) radio systems.

The essential features of a typical P-MP radio system are:

- efficient use of the radio spectrum;
- concentration;
- transparency.

Radio is often the ideal way of obtaining communications at low cost and almost independent of distance, and over difficult topography. Moreover, a small number of sites are required for these installations, thus facilitating rapid implementation and minimizing maintenance requirements of the systems.

Concentration means that "m" users can share "n" radio channels (m being larger than n), allowing a better use to be made of the available frequency spectrum and at a lower equipment cost. The term "multi-access" derives from the fact that every user has access to every channel (instead of a fixed assignment as in most multiplex systems). When a demand arises an available channel (or channels) is allocated to it. When the demand is terminated, the channel is released for other use.

Concentration requires the use of distributed intelligent control which in turn allows many other operation and maintenance functions to be added.

Transparency means that the network node and the user terminal communicate with each other without being aware of the radio path.

Efficient use of the radio spectrum is generally achieved by reusing frequency sets at base stations in a cellular pattern.

1 Scope

1.1 Applications

The present document specifies the minimum and optional requirements for system parameters of Time Division Multiple Access (TDMA) Point to Multipoint (P-MP) Radio Systems in the terrrestrial Fixed Service operating in frequency bands in the range 3 GHz to 11 GHz.

The present document covers the following typical Point-to-Multipoint (P-MP) applications:

- voice;
- fax;
- Voice-band data;
- telex, related to analogue interfaces;
- data up to 64 kbit/s or beyond with optional interfaces;
- ISDN;
- digital video;
- digital audio, related to digital interfaces.

Radio terminals from different manufacturers are not intended to inter-work at radio frequency (i.e. no common air interface).

The present document defines the requirements of radio terminal and radio-relay equipment including the interfaces. The requirements for multiplex, network management and antenna / feeder equipment may be addressed elsewhere.

Testing to the present document will be undertaken with the guidance of a generic test methods document EN 301 126 [22], which is under preparation.

1.2 Frequencies

The present document covers fixed P-MP services operating in the 3,5 GHz, 3,7 GHz and 10,5 GHz bands and having the frequency plans as given in ERC Recommendations 14-03 [7], 12-08 [23] and 12-05 [8], respectively.

1.3 Access method

The present document covers Time Division Multiple Access (TDMA) systems.