SLOVENSKI STANDARD
SIST ETS 300 326-1 E1:2003

01-december-2003

Radijska oprema in sistemi (RES) – Prizemni letalski telefonski sistem (TFTS) – 1. del: Govorne storitve, zmogljivosti in zahteve

Radio Equipment and Systems (RES); Terrestrial Flight Telecommunications System (TFTS); Part 1: Speech services, facilities and requirements

Ta slovenski standard je istoveten z: ETS 300 326-1 Edition 1

ICS:

33.060.01	Radijske komunikacije na splošno	Radiocommunications in general
49.090	Oprema in instrumenti v zraļ nih in vesoljskih plovilih	On-board equipment and instruments

SIST ETS 300 326-1 E1:2003 **en**

EUROPEAN TELECOMMUNICATION STANDARD

ETS 300 326-1

January 1996

Source: ETSI TC-RES

Reference: DE/RES-5-01/11

ICS: 33.060.50

Key words: TFTS,facilities and requirements

Radio Equipment and Systems (RES); Terrestrial Flight Telephone System (TFTS); Part 1: Speech services, facilities and requirements

ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE
Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE
X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

Tel.: +33 92 94 42 00 - Fax: +33 93 65 47 16

Contents

Foreword

This European Telecommunication Standard (ETS) has been produced by the Radio Equipment and Systems (RES) Technical Committee of the European Telecommunications Standards Institute (ETSI).

The Terrestrial Flight Telecommunication System (TFTS) aircraft station was specified by the European Airlines Electronic Committee (EAEC) and has subsequently been adopted as Aeronautical Radio Incorporated (ARINC) Characteristic 752 [2] by the Airlines Electronic Engineering Committee (AEEC).

ARINC Characteristic 752 [2] makes reference to this ETS for the specification of certain radio and telecommunication matters to avoid ambiguity. The TFTS aircraft station is one of a set of facilities within an overall architecture being defined for aircraft on-board telecommunications by the AEEC.

This ETS has been split into three parts as follows:

Part 1: **"Speech services, facilities and requirements";**

Part 2: "Speech services, radio interface";

Part 3: "Speech services, network aspects".

An ETSI Technical Report (ETR) is in preparation for those manufacturers and/or system operators who require a defined interface between the TFTS Ground Station (GS) and TFTS Ground Switching Centre (GSC).

Proposed transposition dates	
Date of adoption of this ETS:	26 May 1995
Date of latest announcement of this ETS (doa):	30 April 1996
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 October 1996
Date of withdrawal of any conflicting National Standard (dow):	31 October 1996

Blank page

1 Scope

This European Telecommunication Standard (ETS) specifies the minimum technical requirements of the services, facilities and functions that the Terrestrial Flight Telecommunication System (TFTS) supports to provide a pan-European terrestrial aeronautical public correspondence service.

This ETS contains the specification of equipment for the provision of a terrestrial aeronautical public correspondence service working in the frequency spectrum bands allocated at WARC 92 (1 670 to 1 675 MHz and 1 800 to 1 805 MHz).

This ETS fully specifies aspects of the radio interface and Terrestrial Flight Telecommunication System (TFTS) ground network required to maintain inter-operability of equipment. ERC Decision ERC/DEC/(92)01 [1] is applicable to the TFTS frequency spectrum within Europe.

This ETS includes a general description of the TFTS which is intended to be an informative reference for readers of the ETS.

The specification for data application and facsimile will be the subject of a further I-ETS.

The commercial aspects of service definition are outside the scope of this ETS except where it is necessary for this information to be considered due to its impact on technical specification matters.

The scope of this part of the ETS has been confined to the set of services to be provided by the phase 1 standard. An informative subclause 5.4 has been included describing the service definitions that may subsequently be specified for facsimile, data services and low rate speech services.

2 Normative references

This ETS incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] ERC Decision ERC/DEC/(92)01 (1991): "Definition of frequency bands for the Pan European terrestrial flight telecommunication system (TFTS)".

[2] ARINC Characteristic 752 (1993): "Terrestrial Flight Telecommunication System (TFTS) Airborne Radio Subsystem".

[3] ARINC Characteristic 746: "Cabin Communications System".

[4] ETS 300 085 (1990): "Integrated Services Digital Network (ISDN) - 3,1 kHz telephony teleservice Attachment requirements for handset terminals".

[5] ETS 300 326-2: "Radio Equipment and Systems (RES) - Terrestrial Flight Telecommunication System (TFTS) Part 2: Speech services, radio interface".

[6] ETS 300 326-3: "Radio Equipment and Systems (RES) - Terrestrial Flight Telecommunication System (TFTS) Part 3: Speech services, network aspects".

[7] CCITT Recommendation G.165 (1988): "Echo cancellers".

[8] CCITT Recommendation E.164 (1988, 1991): "Numbering plan for the ISDN era".

[9] Inmarsat Aeronautical Satellite System Definition Manual Module 5 (March 1993): "Circuit mode service voice codec algorithm and terminal interface function specification for facsimile and data services, Version 3 and corrigenda".

[10] ARINC Characteristic 741: "Aviation satellite Communication System, Parts 1 to 4".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the following definitions apply:

bearer service: A type of telecommunication service that provides the capability for the transmission of signals between user - network interfaces.

teleservice: A type of telecommunication service that provides the complete capability, including terminal equipment functions, for communication between users according to protocols established by agreement between administrations and/or Recognised Private Operating Agencies (RPOAs).

3.2 Abbreviations

For the purposes of this ETS, the following abbreviations apply:

AEC	Aircraft Equipment Code
AEEC	Airlines Electronic Engineering Committee
AEN	Aircraft Equipment Number
ARINC	Aeronautical Radio INCorporated
AS	Aircraft Station
ASI	Aircraft Station Identity
AT	Avionics Termination
ATE	Aircraft Telecommunications Equipment
ATEI	Aircraft Termination Equipment Identifier
ATISDN	Aircraft Termination ISDN
CC	Country Code
CCITT	Consultative Committee on International Telegraphy and Telephony
CDS	Cabin Distribution System
CS	Cabin Systems
CTU	Cabin Telecommunications Unit
DTMF	Dual Tone Multi Frequency
EAEC	European Airlines Electronics Committee
EC	Echo Controller
FAC	Final Assembly Code
GCC	Ground switching Centre Code
GCT	Ground station Cell Type
GEN	Ground station Equipment Number
GS	Ground Station
GSC	Ground Switching Centre
GSIC	Ground Station Identity Code
GSLAT	Ground Station Latitude
GSLONG	Ground Station Longitude
GSN	Ground station Serial Number
GSS	Ground Station System
ICAO	International Civil Aviation Organisation
ISDN	Integrated Services Digital Network
LSB	Least Significant Bit
MM	Mobility Management
MSB	Most Significant Bit
NDC	National Destination Code
NM	Network Management
PAD	Packet Assembler-Disassembler
PWRCTL	PoWeR ConTroL level adjustment
RMIN	Receiver MINimum acceptable signal level

RPOA	Recognised Private Operating Agency
SNR	Serial NumbeR
TAC	Type Approval Code
TDMA	Time Division Multiple Access
TFTS	Terrestrial Flight Telecommunication System
TIM	network TIMe
UN	User Number
UTC	Coordinated Universal Time
WARC 92	World Administrative Radio Conference 1992

4 General description of the TFTS

This clause contains an informative description of the TFTS. The basic TFTS architecture is described together with a brief explanation of the various functional entities of the system. When appropriate, reference is made to other parts of this ETS where more detailed descriptions of functional entities are provided. Reference has also been made to possible connections to external systems which are beyond the scope of this ETS. These references are not intended to imply any technical or commercial implementation for the service provided by TFTS.

4.1 Purpose of the TFTS

The TFTS provides a radio communication link between aircraft and ground stations which have access to public fixed telecommunications networks. This enables aircraft passengers or users to access public telecommunications services from the air. The principal services supported by the TFTS are as follows:

a) telephony;

b) facsimile group 3;

c) paging services;

d) data services.

The services provided by TFTS are primarily aimed at commercial airliners but this does not preclude use of the system by smaller commercial regional aircraft operators or the general aviation sector.

4.2 Service coverage

The radio system of the TFTS is similar in nature to the cellular systems of the land mobile service. There are some important differences, especially the cell radii (typically 240 km) and the height coverage (in excess of 43 000 feet). The mobiles of the service are aircraft in flight or on the ground in the starting or finishing phases of flight.

Three cell types are specified:

en-route: providing a large area coverage at altitude;

intermediate: providing coverage at lower altitude where required, especially in the vicinity of airports; and

airport stations: for use on or immediately above the ground.

4.3 TFTS architecture

Figure 1 provides an illustrative overview of the telecommunications services to be provided to aircraft. Figure 2 provides a schematic block diagram of a terrestrial aeronautical telecommunication system showing the position of the TFTS elements.

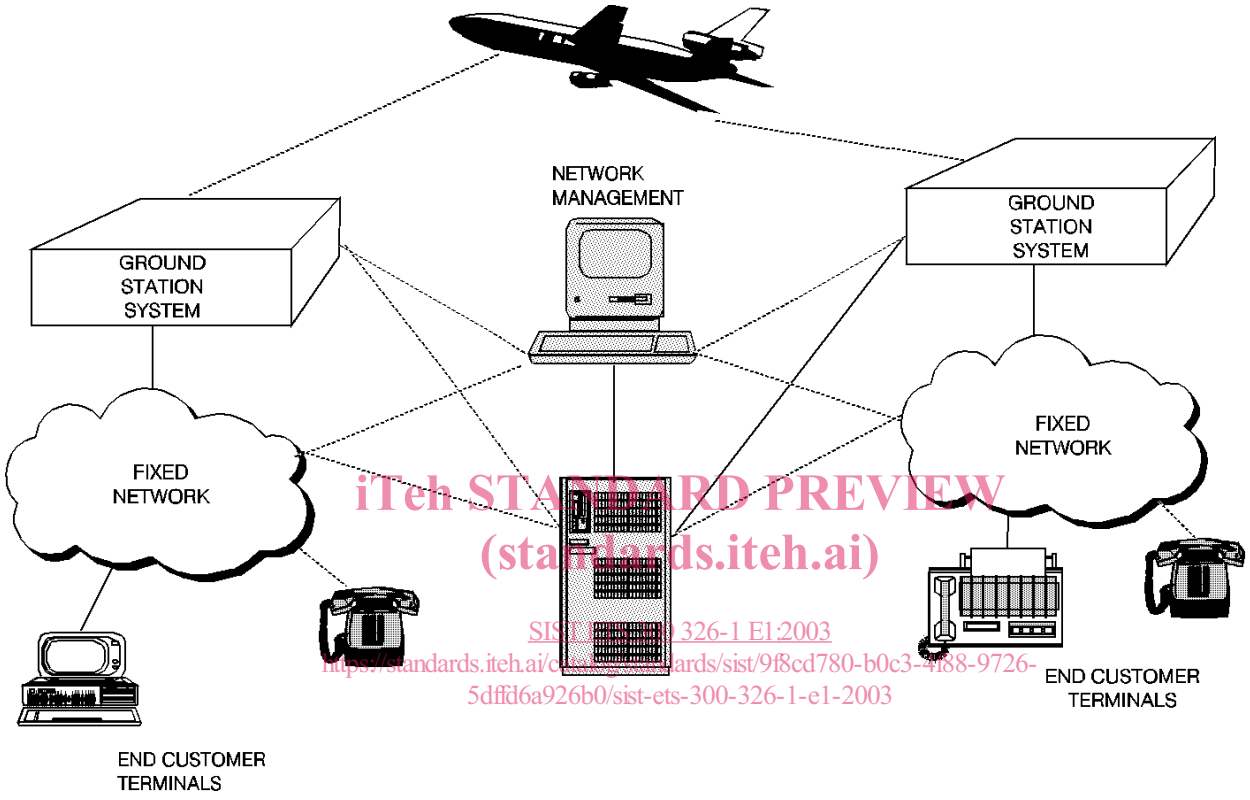

Figure 1: Aeronautical telecommunication services overview