सेवा आवश्यकताओं के लिए मानक

टीईसी ६१०५४:२०२१

(सं: एसआर/एटीएस-01/02.मई.2003 को अधिक्रमित करता है)

STANDARD FOR SERVICE REQUIREMENTS

TEC 61054:2021

(Supersedes No: SR/ATS-01/02.MAY.2003)

ऑडियोटेक्स सर्विस

AUDIOTEX SERVICE

ISO 9001:2015

दूरसंचार अभियांत्रिकी केंद्र

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Release_: May, 2021

FOREWORD

Telecommunication Engineering Centre(TEC) is the technical arm of Department of Telecommunications (DOT), Government of India. Its activities include:

- Framing of TEC Standards for Generic Requirements for a Product/Equipment, Standards for Interface Requirements for a Product/Equipment, Standards for Service Requirements & Standard document of TEC for Telecom Products and Services
- Formulation of Essential Requirements (ERs) under Mandatory Testing and Certification of Telecom Equipment (MTCTE)
- Field evaluation of Telecom Products and Systems
- Designation of Conformity Assessment Bodies (CABs)/Testing facilities
- Testing & Certification of Telecom products
- Adoption of Standards
- Support to DoT on technical/technology issues

For the purpose of testing, four Regional Telecom Engineering Centers (RTECs) have been established which are located at New Delhi, Bangalore, Mumbai, and Kolkata.

ABSTRACT

This standard for Service Requirements pertains to Audiotex Service, scope of service, its key elements, service description, and quality of service to be provided by any licensed access service provider.

CONTENTS

HISTORY SHEET

Sl. No.	*Standard / Documents No.*	*Title*	*Remarks*
1.	SR/ATS-01/02.MAY.2003	Audiotex Service	
2.	TEC 61054:2021	Standard for Service Requirements for Audiotex	

REFERENCES

Sl. No.	*ITU-T Recommendation No*	*Title/Documents Name*
[1]	G.711	Pulse Code Modulation of Voice frequencies.
[2]	G.712	Transmission performance characteristics of pulse code modulation channels
[3]	G.722,G.722.1, G722.1c	7 KHz audio codec with 64 kbps
[4]	G.726	Dual Rates speech coder for communications transmitting at 16, 24, 32 and 40 kbps
[5]	G.728	Coding of speech at 16 kbps using low-delay code excited linear prediction
[6]	G.729a, G.729b	Coding of speech at 8 kbps using conjugate-structure algebraic-code-excited linear prediction (CS-ACELP)
[7]	G.732	Characteristics of primary PCM multiplex equipment operating at 2048 Kbps
	TEC Standard	
[1]	TEC60012:2017	PABX for network connectivity.

Chapter 1

1.0 GENERAL

This document defines the parameters of Audiotex Service, scope of service, its key elements, service description, and quality of service to be provided by any service provider.

2.0 AUDIOTEX SERVICE DEFINITION AND SCOPE

It is either an interactive or a non-interactive non real time service which provides through appropriate access by standardised procedure for users of Audiotex service to communicate with database (database system shall be present within national boundaries) via telecom network. A subscriber can retrieve the information at any time by interacting with the Audiotex Service Equipment by using phone and/or the information stored in Audiotex equipment can be disseminated to the subscriber on his phone in accordance with licensing conditions.

The typical examples of Audiotex service are given below:

2.1 Information retrieval

It is a non-interactive function of Audiotex service which serves the basic function. The caller dials in and listens to the information, which is retrieved from the Audiotex database. The examples are medical and health information, weather information, entertainment, sports, financial information etc.

2.2 Interaction with Audiotex

Interactive function of Audiotex service is one in which the caller makes the call and after listening to options, caller is required to input more information for further response. Such interactive input can be through voice recognition or by using phone. This type of service is used for sales promotion, marketing, telemarketing etc.

2.3 Information on Fax

Information can also be obtained as fax print out. It can cater to services like classified advertisements, tour and travels, trading and trade matters etc.

2.4 Audio Playing

It is also possible to retrieve audio information associated with video signal. The examples are non-real time audio of music programme, auctions, advertising etc.

2.5 Outbound Audio play.

It can dial out its subscriber or its client's subscriber number as per mutually agreed terms and conditions and associated non real time audio may be played.

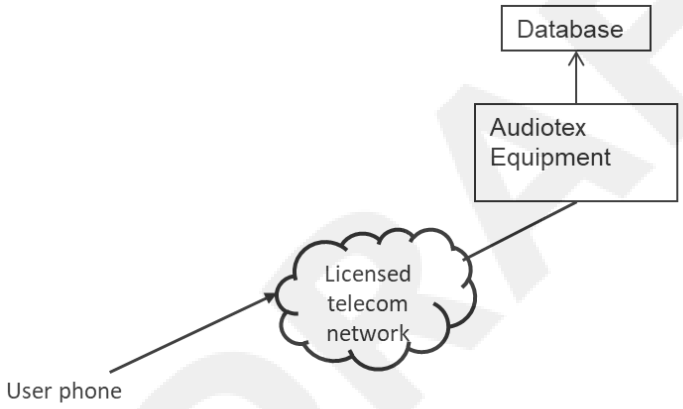

Fig. 1. Audiotex Equipment

3.0 ACCESS ATTRIBUTES

The service shall be provided using networks of any licensed access service provider with DID (Direct Inward Dialing) facility as per relevant interface of Clause 2.1 of TEC Specification No. TEC 60012:2017.

3.1 Signalling access protocols

3.1.1 Direct inward dialing signaling shall be used to provide automatic service selection on the Audiotex equipment. The Audiotex equipment shall be capable of absorbing at least 2 consecutive DID digits for interacting with the service.

3.1.2 The Audiotex Service Equipment shall return Tone/Voice prompt if DID digits received are for a service that does not exist or which has been disabled, with forced release facility after a predetermined time.

4.0 NETWORK INTERFACE

4.1 The Audiotex Service Equipment, connected to networks of any licensed access service provider shall conform to relevant interface of Clause 2.1 of TEC Specification No. TEC 60012:2017.

4.2 The equipment and the service shall be able to work as per National Numbering Plan in force.

5.0 DATA INTERFACES

5.1 The Audiotex Equipment shall have standard data interfaces to enable interconnection with computers or other external devices e.g. fax server.

5.2 In addition, the Audiotex Equipment must have a test port for monitoring the call duration and billing information.

6.0 TRANSMISSION

6.1 VF bandwidth of 300Hz-3400Hz shall apply to all audio information handled by Audiotex equipment. Encoding for interface with 2048 Kbps shall follow PCM A-Law as per ITU-T Recommendation G.711.

6.2 The following audio Codec shall be supported depending upon applicable type of network interface:

(i) G.711 – Pulse code Modulation of voice frequencies

(ii) G.722, G.722.1, G722.1c - 7 KHz audio codec with 64 kbps

(iii) G.726 - Dual Rates speech coder for communications transmitting at 16, 24, 32 and 40 kbps

(iv) G.728 - Coding of speech at 16 kbps

(v) G.729a, G.729b, - Coding of speech at 8 kbps

(vi) Opus, AAC-LD-coding of speech at 64 Kbps or 128 Kbps

(vii) European GSM 06.10 standard for full-rate speech transcoding, at a rat e of 13 kbps

6.3 The quality of transmission from the Audiotex Equipment to the trunk interface shall conform to ITU-T Recommendation G.712.

6.4 Tones sent to the subscriber during the call set up phase and up to invocation of desired service shall be distinguishable from those of voice call.

7.0 QUALITY OF SERVICE OBJECTIVES

7.1 Availability of Service

The Audiotex Service shall be available for all the 24 hours a day. When a service is not available (e.g. scheduled closure or temporary failure), then suitable announcement should be available.

7.2 Dimensioning of Equipment

Any service shall be available simultaneously to callers i.e. the equipment shall provide sufficient hardware and software resources to ensure that callers receive the same service response irrespective of the services being accessed by other callers.

7.3 Dimensioning of junctions

Audiotex equipment should have sufficient number of junctions so that grade of service measured during busy hours should not be less than 0.002Erlangs.

7.4 Under all traffic conditions and with any combination of services being accessed, the Audiotex Equipment shall provide a consistent service to all callers without any significant audio gapping (noticeable delay in playing audio back to the caller), audio clipping, audio distortion or any appreciable delays in responding to callers.

7.5 Response Time

The Audiotex Equipment shall provide a programmable period after a call has been answered and before the caller is connected to the service. The period shall be programmable for each service between zero and three 'rings' (inclusive).

The Audiotex session shall start within one second of the last burst of ring back tone, or within one second of the caller having been answered if zero 'ring' is programmed.

Within a service, a caller may be prompted to interact using voice detection, DTMF detection or some other technique. The service shall respond immediately to a caller's input, irrespective of the Audiotex equipment traffic loading or other services that may be being accessed at that time.

8.0 SERVICE DESCRIPTION

8.1 Audiotex service involves the automatic answering of calls and the subsequent provision of audio information to the callers. Audiotex service can be either passive – where the caller simply listens to a fixed service format or can be interactive where the caller can choose various information by interacting with t he Audiotex equipment via telecom network. A subscriber can retrieve the information at any time by interacting with the Audiotex equipment by using the PSTN/PLMN network. However, for any interaction with the Audiotex equipment , PSTN/PLMN network is required.

8.2 The Audiotex service accessibility shall be provided through IN (Identification No.) or password allotted by the licensee to his subscribers.

8.3 Caller Interaction

The Audiotex equipment shall provide a range of interactive facilities to enable callers to respond to audio prompts within the service. The minimum facilities

shall include. DTMF detection (detecting the DTMF keys on the caller's phone).

8.4 Optional additional facilities shall include :

i) Voice detection (detecting (detecting whether or not the caller is speaking).

ii) Voice Interrupt (detecting that the caller is speaking whilst the service is playing the caller audio).

iii) Fax on demand (enabling a caller to get information from the Audiotex equipment on fax machine).

iv) Access to multiple sessions in the same call should be possible.

8.5 Audio Feed

The Audiotex equipment may provide facilities for multiple near real time audio feeds to be distributed across the system and to be accessible to callers. (e.g. sports commentary).

9.0 EQUIPMENT (GENERAL DESCRIPTION)

The details given here may be considered as guidelines.

The equipment can be general purpose server with large voice processing capacity. It should have interface capability of DID, DTMF & digitalization of the voice signals.

9.1 Management console

The Audiotex equipment shall have a management console to provide the operator with a full range of management facilities including:

- DID numbering
- Audio files
- Audiotex equipment ports
- Management services
- System status and alarms

- Call statistics
- Programme variables
- Caller services

The audio loading and reviewing equipment shall be co-located with the management console and connected to the Audiotex equipment.

9.2 Service Integrity

The Audiotex Equipment shall have redundancy by working in hot standby mode.

9.3 Alarms

The Audiotex Equipment shall continuously monitor its performance and status of Audiotex interfaces including connectivity with licensed access service provider network. Two levels of alarm conditions shall be possible – 'prompt or deferred'. A prompt alarm condition indicates serious failure of the Audio Service Equipment whilst 'deferred' condition means that the grade of service has deteriorated from the optimum.

All alarms should be reported to the system management console which shall provide the operator with a description of each alarm and a means of clearing individual alarm conditions.

The Audiotex Equipment shall provide signaling alarms in conformance with applicable ITU- Recommendations of the network interfaces.

10.0 CODE OF PRACTICE

Code of practice as decided by DOT shall be adhered to.

Chapter 2

ATS	Audiotex
DEL	Direct Exchange Line
DID	Direct Inward Dialling
DoT	Department of Telecommunications
DTMF	Dual Tone Multi Frequency
ITU	International Telecommunication Union
PSTN	Public Switch Telephone Network
TEC	Telecommunication Engineering Centre
VF	Voice Frequency
VMS	Voice Mail Service

ABBREVIATIONS

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