सेवा आवश्यकताओं के लिए मानक

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STANDARD FOR SERVICE REQUIREMENTS

TEC 61064 : 2021

(Supersedes No: SR/VMS-01/03.MAY.2003)

वोइस मेल सर्विस

VOICE MAIL SERVICE

ISO 9001:2015

दूरसंचार अभियांत्रिकी केंद्र

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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 voice mail service, scope of service, its key elements, interface specifications, service description, and quality of service to be provided by a licensed access service provider.

CONTENTS

HISTORY SHEET

Sl. No.	*Standard / Documents No.*	*Title*	*Remarks*
1.	SR/VMS-01/03.MAY.2003	Voice Mail Service	
2.	TEC 61064:2021	Standard for Service Requirements for Voice Mail Service	

REFERENCES

ITU-T Recommendations		
Sl. No.	*Documents 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 Specifications	
[1]	TEC60012:2017	PABX for network connectivity.
[2]	TEC 58072:2014	SWITCHING Node with Network-Network Interface At 2048 Kbit/s
[3]	TEC 79146:2001	Subscribers End Equipment (SEE) Connected To 2- W Cable Plant

Chapter 1

1.0 GENERAL

This document defines the parameters of voice mail service, scope of service, its key elements, interface specifications, service description, and quality of service to be provided by a service provider.

2.0 SERVICE DEFINITION AND SCOPE

In a Voice Mail Service (VMS), the subscriber has a voice mail box with voice mailbox number from authorized telecom service provider. Any subscriber can leave/retrieve his message in/from his Voice mail box via a licensed telecommunication network using a combination of store & retrieve techniques. A VMS subscriber can leave/retrieve this message by dialing voice mail box number at his convenience in accordance with licensing conditions.

3.0 ACCESS ATTRIBUTES

The service shall be provided using networks of licensed service telecom providers with DID (Direct Inward Dialing) facility as per TEC Specification No. TEC 60012:2017.

4.0 NETWORK INTERFACE

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

4.2 The interworking of voice mail system and PSTN/PLMN shall comply with National standard for interworking between PSTN/PLMN and other networks TEC 58072:2014.

4.3 The Voice Mail System if connected, to PSTN on 2 wire physical lines shall conform to limits and tolerances as specified in TEC Standard for "Requirements of Subscriber End Equipment connected to 2-Wire cable Plant', No. TEC 79146:2001.

The main parameters are given below:

a) Power limits of the signal imposed by the VMS equipment.
b) The total idle state noise power level during the information transfer shall not be greater than the specified limits.
c) The VMS equipment shall accept standard DTMF frequencies from the customer for interacting with the information system. The frequencies permitted and their tolerances shall be as specified.
d) The voice signal generated by the VMS equipment at the interface point of network of licensed basic service operator shall be capable of adjustment for power levels as specified.
e) The noise level imposed by the voice information system in various states of an incoming call shall not be more than the limits specified.

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

5.0 TRANSMISSION

5.1 VF bandwidth of 300 Hz shall apply to all Voice information handled by Voice Mail equipment. Encoding for interface with 2048 kbps trunks shall follow PCM A-Law as per ITU-T recommendation G. 711.

5.2 The following encoding may 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

5.3 The quality of transmission from VMS equipment to the trunk interface shall conform to ITU-T recommendations G.712.

5.4 Tones sent to the subscriber during storing of the information shall be distinguishable from those of voice call

6.0 QUALITY OF SERVICE OBJECTIVE

6.1 Availability of Service

Service should preferably be available 24 hours a day. When a service is not available (e.g. scheduled closure or temporary failure), then suitable announcement should be available.

6.2 Dimensioning of Equipment

The service shall be available simultaneously to all callers i.e. the equipment shall provide sufficient hardware and software resources to ensure that all callers receive the same service response irrespective of the services other callers may be accessing.

6.3 Dimensioning of Junctions

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

6.4 Response Time

The Voice Mail System response time should not exceed 5 seconds in 99.5% cases.

6.5 Loss of Message

The stored messages should not be lost or corrupted. The user should be able to retrieve the messages in full without corruption.

6.6 The capacity of voice mail system should be as per traffic/user requirements.

7.0 SERVICE DESCRIPTION

7.1 GENERAL

The fundamental ability of the Voice Mail Service is to provide a public interface between originator and recipients of voice communications, especially where there is no immediate or convenient direct telecommunication service available between subscribers' equipment.

Each VMS subscriber shall be associated with:

a) Name
b) Unrestricted mail box number or restricted mail box number with password.
c) Maximum number of messages that can be stored in mail box.
d) Maximum length of messages.
e) Personal identification number to retrieve messages.

7.2 The access to VMS shall be available from standard telephone instrument. Special features such as password for restricted access, personal identification number (PIN) for message retrieval and other optional features shall be possible through Dual Tone Multi-frequency (DTMF)or other possible techniques using POT/ ISDN/ Mobile instruments.

7.3 Access Facilities

Voice mail system shall be connected to the PSTN/PLMN. The VMS subscriber dials own VMS box number followed by access code to retrieve message. . The system responds with "Identification Number", to which caller responds by dialing a Personal Identification Number for listening to messages or waits for prompt to store messages. Alternatively, if the voice box access is programmed to receive messages from a restricted group of callers then it responds with password. The caller is required to dial a password at the end of which VMS again responds with valid prompts to

accept messages. VMS, if necessary, may respond the user with brief recorded instructions.

7.4 VMS subscriber uses phones with DTMF keypad shall be able to use other user friendly functions viz.

1) Stop recording
2) Continue recording
3) Redirect
4) Suitable provision for programmable group messaging.
5) Check messages
6) Identify time and sender
7) Repeat
8) Pause and continue
9) Skip and forward
10) Save
11) Replay
12) Deletion

7.5 Applications

Voice mail service has got wide range of applications. Typical examples are given below:

i) MESSAGING SERVICE

The messaging service designed for routine use by the person who travels frequently, is difficult to reach, yet needs to stay in touch with numerous people and events.

ii) VOICELINE SERVICE

The Voice line service is designed to provide networking of the voice mail service and to send and receive messages between Voice Mail Centres. The service forms the basis for regional, national or international Voice Mail Service.

iii) TELECOMPLAINT SERVICE

This service envisages use of Voice Mail Service to provide 24 hours automatic complaint service. This service is very helpful for the maintenance agency in addressing complaints.

8.0 BASIC ELEMENTS OF EQUIPMENT

The details given here may be considered as guidelines. The basic components of VMS System include:

i) Voice Mail Server
ii) Administrative Management & control Module (AMC)
iii) Provision for detailed billing

8.1 The Voice Mail System shall continuously monitor its performance and the interfaces. Two levels of alarm conditions shall be possible- 'Prompt or Deferred'. A prompt alarm condition indicates serious failure of Voice Mail System whilst deferred condition means that the grade of service has deteriorated from the optimum.

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

Chapter 2

ABBREVIATIONS

AMC	Administrative & Management Control
CDMA	Code Division Multiple Access
DEL	Direct Exchange Line
DID	Direct Inward Dialling
DTMF	Dual Tone Multi Frequency
ISDN	Integrated Service Digital Network
ITU	International Telecommunication Union
GSM	General Studies on Mobile
POT	Plane ordinary Telephone
PSTN	Public Switch Telephone Network
TEC	Telecommunication Engineering Centre
TPS	Tone Pulse Switch able
VMS	Voice Mail Service

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