भारत का राजपत्र
The Gazette of India

असाधारण

EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (i)

PART II—Section 3—Sub-section (i)

प्राधिकार से प्रकाशित

PUBLISHED BY AUTHORITY

सामाजिक न्याय और अधिकारिता मंत्रालय

(दिव्यांगजन सशक्तिकरण विभाग)

अधिसूचना

नई दिल्ली, 10 मई, 2023

　　　　सा.का.नि. 359(अ).—जबकि सामाजिक न्याय और अधिकारिता मंत्रालय, दिव्यांगजन सशक्तिकरण विभाग में भारत सरकार के दिव्यांगजन अधिकार अधिनियम, 2016 (2016 का 49) की धारा 100 की उप-धारा (1) द्वारा यथा अपेक्षित, दिनांक 26 जुलाई, 2022 की अधिसूचना संख्या. **सा.का.नि** 608(असा.) के माध्यम से दिव्यांगजन अधिकार नियम, 2017 के नियम 15 के उप-नियम (1) के खंड (ग) में संशोधन के लिए भारत के राजपत्र, असाधारण, भाग-II, खंड 3, उप-खंड (i) में कतिपय नियमों का एक मसौदा प्रकाशित किया गया था जिसमें आधिकारिक राजपत्र की उक्त अधिसूचना वाली प्रतियां जनता को जिस तारीख से उपलब्ध कराई गई थी, उस तारीख से तीस दिनों की समाप्ति से पहले, इससे प्रभावित होने की संभावना वाले सभी व्यक्तियों से आपत्तियां और सुझाव आमंत्रित किए गए थे ।

　　　　और जबकि उक्त अधिसूचना की प्रतियां 01 अगस्त, 2022 को जनता के लिए उपलब्ध कराई गई थीं;

　　　　और जबकि उक्त अधिसूचना के संबंध में जनता से प्राप्त आपत्तियों और सुझावों पर केंद्र सरकार द्वारा विचार किया गया था;

　　　　अब, इसलिए, दिव्यांगजन अधिकार अधिनियम, 2016 (2016 का 49) की धारा 100 की उप-धाराओं (1) और (2) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, केंद्र सरकार दिव्यांगजन अधिकार नियम, 2017 में संशोधन करने के लिए एतद्द्वारा आगे और निम्नलिखित नियम बनाती है, अर्थात्:-

(1) इन नियमों को दिव्यांगजन अधिकार (संशोधन) नियम, 2023 कहा जाएगा।

(2) ये आधिकारिक राजपत्र में उनके प्रकाशन की तारीख से लागू होंगे।

2. दिव्यांगजन अधिकार नियम, 2017 में, नियम (15) में, उप-नियम (1) में, खंड (ग) में, मद (ii) के पश्चात् निम्नलिखित मद को अंत: स्थापित किया जाएगा, अर्थात्:-

"(iii)   वेबसाइट, ऐप्स, सूचना और संचार प्रौद्योगिकी आधारित जन सुविधाएं और सेवाएं, इलेक्ट्रॉनिक वस्तुएं और उपकरण जो रोजमर्रा के उपयोग के लिए हैं, दिव्यांगजनों के लिए आम उपयोग के लिए सूचना और संचार प्रौद्योगिकी आधारित उपभोक्ता उत्पादों और अतिरिक्त उपकरण (एक्सेसरी) जो सूचना और संचार प्रौद्योगिकी आधारित हैं, भारतीय मानक ब्यूरो द्वारा क्रमश: दिनांक 24 दिसंबर, 2021 की अधिसूचना संख्याओं एचक्यू-पीयूबी013/1/2020-पीयूबी -बीआईएस (278) और दिनांक 4 मई, 2022 की अधिसूचना सं. एचक्यू-पीयूबी013/1/2020-पीयूबी-बीआईएस (358) के जरिए प्रकाशित भारतीय मानक आईएस 17802 (भाग I), 2021 और आईएस 17802 (भाग 2), 2022 जैसा कि समय-समय पर संशोधित किया जाता है, का अनुपालन करेंगे : "

[फा. सं. 38-02/2022-डीडी-III]

राजेश कुमार यादव, संयुक्त सचिव

नोट : दिव्यांगजन अधिकार नियम, 2017 को दिनांक 15 जून, 2017 की अधिसूचना संख्या. सा.का.नि. 591(असा.) के माध्यम से भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (i) में प्रकाशित किया गया था और दिनांक 17 मार्च, 2020 की सा.का.नि. 181(असा.) के माध्यम से अंतिम बार संशोधित किया गया था।

MINISTRY OF SOCIAL JUSTICE AND EMPOWERMENT

(Department of Empowerment of Persons with Disabilities (Divyangjan))

NOTIFICATION

New Delhi, the 10th May, 2023

G.S.R. 359(E).—Whereas a draft of certain rules to amend clause (c) of sub-rule (1) of rule 15 of the Rights of Persons with Disabilities Rules, 2017 was published, as required by sub-section (1) of section 100 of the Rights of Persons with Disabilities Act, 2016 (49 of 2016), *vide* notification number G.S.R. 608(E), dated the 26th July, 2022 of the Government of India in the Ministry of Social Justice and Empowerment, Department of Empowerment of Persons with Disabilities published in the Gazette of India, Extraordinary, Part II, section 3, sub-section (i), inviting objections and suggestions from all persons likely to be affected thereby before the expiry of thirty days from the date on which the copies of the Official Gazette containing the said notification were made available to the public;

And whereas copies of the said notification were made available to the public on the 1st August, 2022;

And whereas the objections and suggestions received from the public in respect of the said notification were considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sub-sections (1) and (2) of section 100 of the Rights of Persons with Disabilities Act, 2016 (49 of 2016), the Central Government hereby makes the following rules further to amend the Rights of Persons with Disabilities Rules, 2017, namely:-

1.   (1) These rules may be called the Rights of Persons with Disabilities (Amendment) Rules, 2023.

(2) They shall come into force on the date of their publication in the Official Gazette.

2.   In the Rights of Persons with Disabilities Rules, 2017, in rule (15), in sub-rule (1), in clause (c), after item (ii), the following item shall be inserted, namely:-

"(iii) Websites, apps, information and communication technology based public facilities and services, electronic goods and equipment which are meant for everyday use, information and communication technology based consumer products and accessories for general use with persons with disabilities, and other products and services which are based on information and communication technology, shall comply with the Indian standards IS 17802 (Part 1), 2021 and IS 17802 (Part 2), 2022, published by the Bureau of Indian Standards *vide* notification numbers HQ-PUB013/1/2020-PUB-BIS(278), dated the 24th December, 2021 and HQ-PUB013/1/2020-PUB-BIS(358), dated the 4th May, 2022, respectively as amended from time to time: "

[F. No. 38-02/2022-DD-III]

RAJESH KUMAR YADAV, Jt. Secy.

Note : The Rights of Persons with Disabilities Rules, 2017 were published in the Gazette of India, Extraordinary, Part II, section 3, sub-section (i) *vide* notification number G.S.R. 591 (E), dated the 15th June, 2017 and was last amended *vide* G.S.R. 181 (E), dated the 17th March, 2020.

388/899
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File No. I-14002/17/2021-QIC (Computer No. 19869)
38/02/2022-DD-III
Receipt No. 2033/4/2021/AIC
12/Jan/2022/Scholarship Section

रजिस्ट्री सं. डी.एल.- 33004/99   REGD. No. D. L.-33004/99

सी.जी.-डी.एल.-अ.-27122021-232124
CG-DL-E-27122021-232124

असाधारण
EXTRAORDINARY

भाग III—खण्ड 4
PART III—Section 4

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 677]	नई दिल्ली, सोमवार, दिसम्बर 27, 2021/पौष 6, 1943
No. 677]	NEW DELHI, MONDAY, DECEMBER 27, 2021/PAUSA 6, 1943

भारतीय मानक ब्यूरो

(उपभोक्ता मामले विभाग)

अधिसूचना

नई दिल्ली, 24 दिसम्बर, 2021

संदर्भ: **HQ-PUB013/1/2020-PUB-BIS (278)**.— भारतीय मानक ब्यूरो नियम, 2018 के नियम 15 के उपनियम (1) के अनुसरण में भारतीय मानक ब्यूरो एतद्द्वारा अधिसूचित करता है की जिन भारतीय मानकों के विवरण इसमें संलग्न अनुसूची के द्वितीय स्तंभ में दिये गये हैं, तीसरे स्तंभ में इंगित तिथि को स्थापित हो गये हैं। चौथे स्तंभ में दिये गये मानकों के विवरण, यदि कोई हो तो वे भी साथ-साथ लागू रहेंगे जब तक वे पाँचवें स्तंभ में इंगित तिथि को वापस लिए जाने हैं ।

अनुसूची

क्रम सं.	स्थापित भारतीय मानकों की संख्या, वर्ष तथा शीर्षक	प्रतिस्थापन तिथि	भारतीय मानकों, यदि वापस लिए जाने हैं, की संख्या, वर्ष तथा शीर्षक	वापस होनें की तिथि
(1)	(2)	(3)	(4)	(5)
1	आई एस 17802 (भाग 1) : 2021 आइसीटी उत्पादों और सेवाओं के लिए अभिगम्यता भाग 1 अपेक्षाएं	24 दिसम्बर 2021	लागू नहीं	लागू नहीं

7568 GI/2021   (1)

2   THE GAZETTE OF INDIA : EXTRAORDINARY   [PART III—SEC.4]

इन मानकों की प्रतियाँ भारतीय मानक ब्यूरो, मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली 110002, क्षेत्रीय कार्यालयों:कोलकाता, चंडीगढ़, चेन्नई, मुम्बई तथा शाखा कार्यालयों : अहमदाबाद, बेंगलुरु, भोपाल, भुबनेश्वर, कोयम्बटूर, देहरादून, फरीदाबाद, गाज़ियाबाद, गुवाहाटी, हैदराबाद, जयपुर, जम्मु, जमशेदपुर, लखनऊ, नागपुर, परवानू, पटना, पुणे, रायपुर, राजकोट, कोच्चि, विशाखापटनम   में बिक्री हेतु उप्लब्ध हैं. भारतीय मानकों को http://www.standardsbis.in पर आनलाईन खरीदा/ डाउनलोड किया जा सकता है।

जे राय चौधरी, वैज्ञानिक जी एवं उपमहानिदेशक (मानकीकरण – I)

[विज्ञापन-III/4/असा./540/2021-22]

BUREAU OF INDIAN STANDARDS

(Department of Consumer Affairs)

NOTIFICATION

New Delhi, the 24th December, 2021

Ref: HQ-PUB013/1/2020-PUB-BIS (278).—In pursuance of Sub-rule (1) of Rule (15) of the Bureau of Indian Standards Rules, 2018, the Bureau of Indian Standards hereby notifies that Indian standards, particulars of which are given in the second column of the schedule hereto annexed have been established on the date indicated against it in third column. The particulars of the standards, if any which are given in the fourth column shall also remain in force concurrently till they are withdrawn on the date indicated against them in the fifth column.

SCHEDULE

Sl No.	No., Year & Title of the Indian Standards Established	Date of Establishment	No. , Year & Title of the Indian Standards to be withdrawn, if any	Date of withdrawal
(1)	(2)	(3)	(4)	(5)
1	IS 17802 (Part 1) : 2021 Accessibility for the ICT Products and Services Part 1 Requirements	24 Dec 2021	NA	NA

Copies of these standards are available for sale with Bureau of Indian Standards, Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi – 110 002; Regional Offices: Kolkata, Chandigarh, Chennai, Mumbai and Branch Offices: Ahmedabad, Bengaluru, Bhopal, Bhubaneshwar, Coimbatore, Dehradun, Faridabad, Ghaziabad, Guwahati, Hyderabad, Jaipur, Jammu, Jamshedpur, Lucknow, Nagpur, Parwanoo, Patna, Pune, Raipur, Rajkot, Kochi, Vishakhapatanam. Online purchase/downloading of Indian Standards can be made at http://www.standardsbis.in.

J. ROY CHOWDHURY, Scientist G & DDG (Standardization − I)

[ADVT.-III/4/Exty./540/2021-22]

अनुसूची

क्रम सं.	स्थापित भारतीय मानकों की संख्या, वर्ष तथा शीर्षक	प्रतिस्थापन तिथि	भारतीय मानकों, यदि वापस लिए जाने हैं, की संख्या, वर्ष तथा शीर्षक	वापस होंने की तिथि
(1)	(2)	(3)	(4)	(5)
1	आई एस 17802 (भाग 2) : 2022 आइसीटी उत्पादों और सेवाओं के लिए अभिगम्यता भाग 2 अनुरूपता का निर्धारण	29 अप्रैल 2022	लागू नहीं	लागू नहीं
2	आई एस/आई एस ओ 37002 : 2021 ध्यानाकर्षण प्रबंधन प्रणाली – दिशानिर्देश	29 अप्रैल 2022	लागू नहीं	लागू नहीं

इन मानकों की प्रतियाँ भारतीय मानक ब्यूरो, मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली 110002, क्षेत्रीय कार्यालयों:कोलकाता, चंडीगढ़, चेन्नई, मुम्बई तथा शाखा कार्यालयों : अहमदाबाद, बेंगलुरु, भोपाल, भुबनेश्वर, कोयम्बटूर, देहरादून, फरीदाबाद, गाज़ियाबाद, गुवाहाटी, हैदराबाद, जयपुर, जम्मू, जमशेदपुर, लखनऊ, नागपुर, परवानू, पटना, पुणे, रायपुर, राजकोट, कोच्चि, विशाखापटनम में बिक्री हेतु उप्लब्ध हैं. भारतीय मानकों को http://www.standardsbis.in पर आनलाईन खरीदा/ डाउनलोड कि या जा सकता है।

जे. राय चौधरी, वैज्ञानिक जी एवं उपमहानिदेशक (मानकीकरण–I)

[विज्ञापन III/4/असा./69/2022-23]

NOTIFICATION

New Delhi, the 4th May, 2022

Ref: HQ-PUB013/1/2020-PUB-BIS (358).—In pursuance of Sub-rule (1) of Rule (15) of the Bureau of Indian Standards Rules, 2018, the Bureau of Indian Standards hereby notifies that Indian standards, particulars of which are given in the second column of the schedule hereto annexed have been established on the date indicated against it in third column. The particulars of the standards, if any which are given in the fourth column shall also remain in force concurrently till they are withdrawn on the date indicated against them in the fifth column.

SCHEDULE

Sl. No.	No., Year & Title of the Indian Standards Established	Date of Establishment	No. , Year & Title of the Indian Standards to be withdrawn, if any	Date of withdrawal
(1)	(2)	(3)	(4)	(5)
1	IS 17802 (Part 2) : 2022 Accessibility for the ICT Products and Services Part 2 Determination of Conformance	29 Apr 2022	NA	NA
2	IS/ISO 37002 : 2021 Whistleblowing Management Systems ─ Guidelines	29 Apr 2022	NA	NA

Copies of these standards are available for sale with Bureau of Indian Standards, Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi – 110 002; Regional Offices: Kolkata, Chandigarh, Chennai, Mumbai and Branch Offices: Ahmedabad, Bengaluru, Bhopal, Bhubaneshwar, Coimbatore, Dehradun, Faridabad, Ghaziabad, Guwahati, Hyderabad, Jaipur, Jammu, Jamshedpur, Lucknow, Nagpur, Parwanoo, Patna, Pune, Raipur, Rajkot, Kochi, Vishakhapatanam. Online purchase/downloading of Indian Standards can be made at http://www.standardsbis.in.

J. ROY CHOWDHURY, Scientist G & DDG (Standardization−I)

[ADVT.-III/4/Exty./69/2022-23]

120346/2021/AIC

I-14002/17/2021-AIC

भारतीय मानक
Indian Standard

IS 17802 (Part 1) : 2021

आइसीटी उत्पादों और सेवाओं
के लिए अभिगम्यता

भाग 1 अपेक्षाऐं

Accessibility for the ICT Products and Services

Part 1 Requirements

ICS 35.240.80, 11.180

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुरशाह ज़फर मार्ग, नई दिल्ली – 110002
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NEW DELHI-110002
www.bis.gov.in   www.standardsbis.in

December 2021   **Price Group 16**

Active Assisted Living Sectional Committee, LITD 35

FOREWORD

This Indian Standard(Part 1) was adopted by the Bureau of Indian Standards, after the draft is finalized by the Active Assisted Living Sectional Committee, had been approved by the Electronics and Information Technology Division Council.

This Indian Standard is published in two parts. The other part in this series is:

Part 2 Determination of conformance

The development of the Indian standard on Accessibility for ICT Products and Services was initiated by the Ministry of Electronics and Information Technology (MeitY) under the 'Knowledge and Resource Centre for Accessibility in ICT (KAI) Project' led by the Centre for Development of Advanced Computing (CDAC). During the preparation of this standard, several consultation meetings and discussions were held with a wide cross section of stakeholders including Ministry of Electronics and Information Technology (MeitY), Department of Empowerment of Persons with Disabilities (DEPwD), Ministry of Housing and Urban Affairs (MoHUA) and Department of Telecommunications (DoT). This Indian Standard is developed to provide a set of accessibility requirements that specify how to make content accessible, primarily for people with disabilities and also for all the end users.

The present Indian Standard (Part 1) is the technical adoption of the European Standard EN 301 549 v 3.2.1 "Accessibility requirements for ICT products and services" developed by CEN, CENELEC and ETSI. Modifications have been made to adapt it to India and are limited to referencing the relevant regulatory context (Rights of Persons with Disabilities Act, 2016) and the official languages of India. The technical coverage is otherwise identical.

The requirements mentioned in this standard (Part 1) relating to the other departments under Government of India (GOI) are given in Annex A (*informative*).

The idea on the further resources for cognitive accessibility is given in Annex D (*Informative*).

Guidance to the users of this standard in providing the overview and also specifying the usage of this standard is given in Annex E (*informative*).

The Composition of the panel, LITD 35/P1 and the sectional committee, LITD 35 responsible for the formulation of this standard is given at Annex F.

IS 17802 (Part 1) : 2021

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0 INTRODUCTION

0.1 Background

Driven by progress in technology and its increasing adoption in all walks of life, twenty-first century has been witnessing unparalleled opportunities for Information and Communication Technology (ICT) to create impact on the lives of citizens, economies and society. One dimension of the challenge for a country like India is its size and diversity, demanding scale and scope of technology interventions. Connecting and empowering over one hundred and thirty crore citizens through the growing use of ICT, with underlying innovation is progressively leading to transformation of India as a knowledge-based economy. ICT provides opportunities for faster economic growth, a better quality of life and greater inclusion and access.

By building the digital edifice (infrastructure, services and digitalization) through a number of measures, a huge opportunity has been opened up for ICT to play a significant role in India's economy and society. These range from provision of digital identity - Aadhaar; Digital payments supported by National Payment Corporation of India (NPCI); Financial inclusion through JAM (Jan Dhan, Aadhar and Mobile) trinity; Increase in penetration of Broadband, Mobile and Internet (the number of mobile users and internet users in India are second in the world); setting up of lakhs of Common Service Centres (CSCs) to ensure citizen services delivery at the last mile; Health insurance services to 50 crore needy people through 'Ayushman Bharat (PMJAY)'; Ayushman Bharat Digital Mission (ABDM); Telemedicine services through e-Sanjeevani; and delivery of digital e-Governance services – under an overall bouquet of policy, programs and promotional measures of 'Digital India' of the Government of India. In turn, the above measures are supported by initiatives of state governments and a domestic IT software products and services industry that is servicing the world, a fast-growing start-up ecosystem that is demonstrating vibrancy and a mobile manufacturing and electronics industry that is growing steadily.

ICT is becoming an all-encompassing aspect for common people enabling them to perform duties effectively and productively on a daily basis. Driven by the rapid pace of technology and innovation, ICT based solutions are increasingly becoming digital and are rapidly being adopted by all key sectors-from banking and finance and e-commerce to education, health, agriculture, travel and more. Other national initiatives such as Smart Cities and Skill India are creating the momentum for wide sections of the population to adopt ICT solutions for greater efficiency, effectiveness, ease of life, and business velocity. It is in this context that it is very important that accessibility aspects are enabled by such a powerful ICT medium towards inclusive development.

Accessibility in ICT is a measure of the extent to which a product or a service can be used by the Persons with Disabilities (PwDs) as effectively as it can be used by others. The concept of accessibility relates to the needs and abilities of diverse sections of PwDs and is expressed in degrees to which such needs are satisfied through ICT-from fully accessible to partially accessible or completely inaccessible for a specified user group. The more the number of people who can use an ICT product or service and the more tasks they can carry out effectively with it, the more is the ICT product or the service considered accessible.

Increased accessibility brings benefits for users, producers, service providers, governments and society at large. Users benefit from being able to use the product or service more effectively and independently, enjoy inclusion in society and benefit from better employment prospects. Producers and service providers benefit from additional business, legal compliance, and customer diversity. It is in this context that certain legal rights have been provided for PwDs. Governments are able to ensure compliance with the Indian legal obligations along with the obligations undertaken by it in international conventions and treaties.

Accessibility is being inclusive. By focusing on the needs and abilities of all users in all situations, it aims to include more of the users more of the time. Other terms for accessibility are Inclusive Design, Universal Design and Design for All. In times of increasing digitalization of economies and societies, Accessibility in ICT is a compelling need for pursuit of all daily activities by PwDs-from ability to conduct e-commerce and on-line banking to on-line education, on-line work, e-health, e-payment for utilities and daily needs, availing public facilities and services and more. ICT accessibility also serves the needs of senior citizens, temporarily disabled members and pregnant women.

0.2 *Rights of Persons with Disabilities Act,* 2016

India ratified the United Nations Convention on the Rights of Persons with Disabilities (CRPD) in 2007 and passed Rights of Persons with Disabilities act (RPwD act) in December 2016 which came into effect from 19th April 2017. As per the *RPwD Act* 2016, twenty-one (21) types of disabilities have been recognized and listed under physical disabilities (locomotor disability, visual impairment, hearing impairment, speech and language disability), intellectual disabilities, mental behaviour, chronic neurological conditions, blood disorders and multiple disabilities. In terms of 'International classification of Functioning, Disability and Health (ICF)', the above disabilities can, in turn, be classified into nine.

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In terms of duties and responsibilities of appropriate Governments, the Act clearly states that 'The Central Government shall, in consultation with the Chief Commissioner, formulate rules for persons with disabilities laying down the standards of accessibility for the physical environment, transportation, information and communications, including appropriate technologies and systems, and other facilities and services provided to the public in urban and rural areas.

The RPwD Act further states under "Access to information and communication technology" — "the appropriate Government shall take measures to ensure that:

   a) all contents available in audio, print and electronic media are in accessible format;

   b) persons with disabilities have access to electronic media by providing audio description, sign language interpretation and close captioning; and

   c) electronic goods and equipment which are meant for everyday use are available in universal design."

RPwD Act, 2016 also presents a strategy for public procurement of Electronics and ICT services and solutions.

Many initiatives, such as "Sugamya Bharat Abhiyan" (Accessible India Campaign), are being taken up by different Ministries and Departments of Government of India, State Governments, and other organizations for the PwDs.

0.3 Accessibility Standard in Global Perspective

While assistive devices based on ICT had come into being even in the twentieth century, the concept of "universal design" – mainstreaming of the concept in products and services to support better usability and accessibility for all have been gaining greater traction in the twenty-first century. Post emergence of Internet and World Wide Web (W3C) in early nineties, Web Accessibility Initiative (WAI) came into being by the dawn of the twenty-first century. With broad-based and global participation of experts, it has been looking at the technical means to address the needs of Web accessibility as also requirements in the form of Web Content Accessibility Guidelines (WCAG).

Thus, WCAG 1.0 came in 1999 and WCAG 2.0 came in 2008 in response to further evolution of Web technology, access devices and multi-media content. WCAG 2.0 series has been updated in 2018 with WCAG 2.1. While the focus of WAI has been on Web, W3C/WAI had produced a Working Group Note by setting up WCAG2ICT Task Force to extend its accessibility guidelines beyond Web, to non-web areas of ICT. Accessibility guidelines and techniques are based on four core principles, namely, Perceivable, Operable, Understandable and Robust (POUR). These core principles address the accessibility requirements arising out of ageing, limited learning and temporary disabilities as well.

Europe began to prepare its requirements standard on ICT accessibility from 2012 onwards through ETSI/CEN/CENELEC under EN 301 549 series and their thrust has also been similar with extended scope, but fully harmonized with WAI/WCAG. The EN 301 549 series represent a comprehensive and cohesive requirements standard, applicable for all categories of ICT, updated from time to time.

USA has also updated its standard through latest release of Section 508 of *Rehabilitation Act,* 2019 and it is harmonized with both W3C/WAI/WCAG and EN 301 549 Standards as applicable at the time of approval of the revision.

0.4 Objective of this Standard

The *RPwD Act,* 2016 envisages laying down of the standards for accessibility for information and communications, including appropriate technologies and systems, and other facilities and services provided to the public in urban and rural areas.

India has been laying down guidelines for accessibility of websites – and mobile apps, through inclusion of mandatory accessibility guidelines by National Informatics Centre (NIC) and Department of Administrative Reforms and Public Grievances (DARPG) for government sites by adoption of Guidelines for Indian Government Apps and Websites 1.0 (GIGW 1.0) in 2009 and GIGW 2.0 in 2019, in conformity with WAI/WCAG guidelines 1.0 and 2.0 respectively.

In response to *RPwD Act*, 2016, many sectors such as telecom, broadcasting, urban development, education, banking and other concerned ministries have also been undertaking stakeholder consultations for formulation afresh or updating of their accessibility requirements in respect of their sectoral applications of ICT. As a result, some of them have announced updated policies, standards and guidelines as in the case of Department of Telecommunications (DoT)/Telecom Regulatory Authority of India (TRAI), Ministry of Information and Broadcasting (MoI&B) (including in respect of Contents), Ministry of Urban Development and Ministry of Education.

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In line with global trends on the development of a cohesive, consistent and cross-cutting standard on accessibility requirement for ICT products and services used in all sectors – as mentioned earlier, this standard consolidates and harmonizes current global and Indian standards and Indian user needs. In particular, it covers accessibility requirements for all web (covering text, audio, images and video) and mobile apps; closed and open system needs to operate without or with assistive technology devices; software; hardware-from desktops, laptops, mobiles and all else and including facilities; online (non-web) documents, contents and e-books; two-way voice including real-time text (RTT); ICT with video communications including TV with set-top box and remote control; support document and help-desk for ICT; and ICT providing emergency and relay services.

Indian language users of computers, internet and mobiles have dramatically grown in the recent years and one study report has indicated that they have already exceeded English language users in India. The Government of India supports the delivery of e-Governance services in Indian languages as well. Hence, this standard has catered to the accessibility requirements of Indian language users of ICT products and services in all categories.

This standard captures functional performance requirements from the set of functional disability categories and covers the technical requirements for each category of use situations in detail. These have been stated in a verifiable way to ensure testing and compliance of ICT products and services to requirements for the benefit of developers and users.

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Indian Standard

ACCESSIBILITY FOR THE ICT PRODUCTS AND SERVICES

PART 1 REQUIREMENTS

1 SCOPE

This standard (Part 1) specifies the needs of people with visual, auditory, speech, physical and neurological disabilities and those with limited cognition, language, and learning applicable to ICT products and services in terms of functional performance statements. It then covers the generic technical requirements for various kinds of ICT to meet functional performance statements.

In line with the *RPwD Act* 2016, this standard covers a wide range of ICT products and services relating to information and communication, including telecom services, web-based services, electronic and print services, digital and virtual services.

This standard (Part 1) is intended to be used in the context of web based technologies, non-web technologies and those that use both. It covers software, hardware and content as well as services. The conformance criteria on test descriptions and evaluation methodology are covered in Part 2 of this standard.

2 REFERENCES

The standards or other publications given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards or other publications are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards or other publications.

ANSI/IEEE C63.19 (2011)	American National Standard Method of Measurement of Compatibility between Wireless Communication Devices and Hearing Aids
ANSI/TIA-4965	Receive volume control requirements for digital and analogue wireline terminals
Character Encoding: 01: 2009	Character encoding standard for Indian languages, Document No: — Character Encoding: 01, Version: 1.0, November, 2009, Government of India, Department of Information Technology, Ministry of Communications and Information Technology
ETSI ETS 300 381 (Edition 1) (December 1994)	Telephony for hearing impaired people; Inductive coupling of telephone earphones to hearing aids
ETSI ES 200 381-1 (V1.2.1) (October 2012)	Telephony for hearing impaired people; Inductive coupling of telephone earphones to hearing aids; Part 1: Fixed-line speech terminals
ETSI ES 200 381-2 (V1.1.1) (October 2012)	Telephony for hearing impaired people
ETSI EG 201 013	Human Factors (HF); Definitions, abbreviations and symbols
ETSI ES 202 975	Human Factors (HF); Requirements for relay services
ETSI ETS 300 767	Human Factors (HF); Telephone Prepayment Cards; Tactile Identifier
ETSI TS 126 114	Universal Mobile Telecommunications System (UMTS); LTE; IP Multimedia Subsystem (IMS); Multimedia telephony; Media handling and interaction (3GPP TS 26.114)

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ETSI TS 122 173	Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; IP Multimedia Core Network Subsystem (IMS) Multimedia Telephony Service and supplementary services; Stage 1 (3GPP TS 22.173)	ISO/IEC 13066-1 : 2011	Information technology — Interoperability with assistive technology (AT) — Part 1: Requirements and recommendations for interoperability
ETSI TS 134 229	Universal Mobile Telecommunications System (UMTS); LTE; Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification (3GPP TS 34.229)	ISO/IEC TS 20071-25 : 2017	Information technology — User interface component accessibility — Part 25: Guidance on the audio presentation of text in videos, including captions, subtitles and other on-screen text
		ISO 21542 : 2011	Building construction — Accessibility and usability of the built environment
ETSI/CEN/ CENELEC EN 301 549 (V2.1.2) (August 2018)	Accessibility requirements for ICT products and services	ISO/IEC Guide 71 : 2014	Guide for addressing accessibility in standards
GIGW v2.0	Guidelines for Indian Government Apps and Websites, v2.0, Feb, 2019, NIC, MeitY, GOI;	IS 16333 (Part 3) : 2017	Mobile phone handsets: Part 3 Indian language support for mobile phone handsets — Specific requirements (*first revision*)
		IS 16350: 2016	Enhanced Inscript Keyboard Layouts
Harmonized Guidelines and Space Standards for Barrier-Free Built Environment for persons with Disability and Elderly Persons, Feb-2016,		IS/ISO/IEC 14496-22 : 2019	Information technology — Coding of audio-visual objects: Part 22: Open font format
IETF RFC 4103 (2005):	"RTP Payload for Text Conversation	MoI&B Accessibility Standard	Accessibility Standards for Persons with Disabilities in TV Programs, 11-Sep-19, MoI&B
ISO/IEC 40500 : 2012	Information technology — W3C Web Content Accessibility Guidelines (WCAG) 2.0	Recommendation ITU-T E.161 (2001)	Arrangement of digits, letters and symbols on telephones and other devices that can be used for gaining access to a telephone network
ISO/IEC 10646 : 2012	Information technology — Universal Coded Character Set (UCS)	Recommendation ITU-T G.722 (1988)	7 kHz audio-coding within 64 kbit/s
ISO 9241-11 : 2018	Ergonomics of human-system interaction — Part 11: Usability: Definitions and concepts	Recommendation ITU-T G.722.2 (2003)	Wideband coding of speech at around 16 kbit/s using Adaptive Multi-Rate Wideband (AMR-WB)
ISO 9241-110 : 2006	Ergonomics of human-system interaction — Part 110: Dialogue principles	Recommendation ITU-T V.18 (2000)	Operational and interworking requirements for DCEs operating in the text telephone mode
ISO 9241-171 : 2008	Ergonomics of human-system interaction — Part 171: Guidance on software accessibility	Recommendation ITU-T T.140 (1988):	Protocol for multimedia application text conversation

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Recommendation ITU-T F.703 (2000)	Multimedia conversational services
TIA-1083-A (2010)	Telecommunications; Telephone Terminal equipment; Handset magnetic measurement procedures and performance requirements
W3C Web Schemas/ Accessibility 2.0.	NOTE: Available at https://www.w3.org/wiki/WebSchemas/Accessibility
WCAG2ICT	W3C Working Group Note 5 September 2013, Guidance on Applying WCAG 2.0 to Non-Web Information and Communications Technologies
WCAG 2.1 : 2018	Web Content Accessibility Guidelines (WCAG) 2.1 NOTE: Available at WCAG 2.1.

3 TERMINOLOGY AND ABBREVIATIONS

3.1 Terminology

For the purposes of this standard, the terms given in ETSI EG 201 013 and the following shall apply:

3.1.1 *Accessibility* — Extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of user needs, characteristics and capabilities, to achieve identified goals in identified contexts of use (*source* ISO 9241-11 : 2018) .

> NOTES
> **1** Context of use includes direct use or use supported by assistive technologies.
> **2** The context in which the ICT is used may affect its overall accessibility. This context could include other products and services with which the ICT may interact.

3.1.2 *Access Space* — Space intended to be occupied by the person, including their Assistive Technology, while they are using the product.

3.1.3 *Assistive Listening Devices (ALDs)* — Devices that help separate the sounds, particularly speech, that a person wants to hear from background noise by bringing sound directly into the ear

> NOTE — These are often found in meetings and public venues such as plays, concerts and places of worship. They can also be used at home with televisions and other products with auditory output.

3.1.4 *Assistive Technology (AT)* — Equipment, product system, hardware, software or service that is used to increase, maintain or improve capabilities of individuals (*source* ISO/IEC Guide 71 : 2014) .

> NOTES
> **1** Assistive technology is an umbrella term that is broader than assistive products.
> **2** Assistive technology can include assistive services, and professional services needed for assessment, recommendation and provision.
> **3** Where ICT does not support directly connected assistive technology, but which can be operated by a system connected over a network or other remote connection, such a separate system (with any included assistive technology) can also be considered assistive technology. This is an additional note, not included in ISO/IEC Guide 71 : 2014.

3.1.5 *Audio Description* — additional audible narrative, interleaved with the dialogue, which describes the significant aspects of the visual content of audio-visual media that cannot be understood from the main soundtrack alone.

> NOTE — This is also variously described using terms such as "video description" or variants, such as "descriptive narration".

3.1.6 *Authoring Tool* — software that can be used to create or modify content

> NOTES
> **1** An authoring tool may be used by a single user or multiple users working collaboratively.
> **2** An authoring tool may be a single stand-alone application or be comprised of collections of applications.
> **3** An authoring tool may produce content that is intended for further modification or for use by end-users.

3.1.7 *Caption* — Synchronized visual and/or text alternative for both speech and non-speech audio information needed to understand the media content (*source :* WCAG 2.1).

> NOTES
> **1** This is also variously described using terms, such as "subtitles" or variants, such as "subtitles for the deaf and hard-of-hearing".
> **2** *Open Captioning* : The captioning whereby the user does not have to do anything in order to see captions for the hearing impaired' as these are an integral part of the picture and cannot be turned off [*source:* MoI&B Accessibility Standard]
> **3** C*losed Captioning* : The means by which both the audio dialogue and sound representations of audio-video content are made visible *via* onscreen text that is synchronized with the audio content on demand by the user [*source :* MoI&B Accessibility Standard].
> **4** *Sub-titling* : The captioning of dialogues whereby the user does not have to do anything in order to see such sub-titles for the hearing impaired, as these are an integral part of the picture and cannot be turned off [source: MoI&B Accessibility Standard].

3.1.8 *Closed Functionality* — Functionality that is limited by characteristics that prevent a user from attaching, installing or using assistive technology.

3.1.9 *Content* — Information and sensory experience to be communicated to the user by means of software, including code or mark-up that defines the content's structure, presentation, and interactions (*source*: WCAG2ICT).

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NOTE — Content occurs in three places: web pages, documents and software. When content occurs in a web page or a document, a user agent is needed in order to communicate the content's information and sensory experience to the user. When content occurs in software, a separate user agent is not needed in order to communicate the content's information and sensory experience to the user - the software itself performs that function.

3.1.10 *Context of Use* — Combination of users, goals and tasks, resources, and environment (*source*: ISO 9241-11 : 2018).

NOTE — The "environment" in a context of use includes the technical, physical, social, cultural and organizational environments.

3.1.11 *Document* — Logically distinct assembly of content (such as a file, set of files, or streamed media) that functions as a single entity rather than a collection, that is not part of software and that does not include its own user-agent (*source*: WCAG2ICT).

NOTES

1 A document always requires a user agent to present its content to the user.

2 Letters, e-mail messages, spreadsheets, books, pictures, presentations, and movies are examples of documents.

3 Software configuration and storage files, such as databases and virus definitions, as well as computer instruction files, such as source code, batch/script files, and firmware, are examples of files that function as part of the software and thus are not examples of documents. If and where software retrieves "information and sensory experience to be communicated to the user" from such files, it is just another part of the content that occurs in software and is covered by WCAG2ICT like any other parts of the software. Where such files contain one or more embedded documents, the embedded documents remain documents under this definition.

4 A collection of files zipped together into an archive, stored within a single virtual hard drive file, or stored in a single encrypted file system file, do not constitute a single document when so collected together. The software that archives/encrypts those files or manages the contents of the virtual hard drive does not function as a user agent for the individually collected files in that collection because that software is not providing a fully functioning presentation of that content.

5 Anything that can present its own content without involving a user agent, such as a self-playing book, is not a document but is software.

6 A single document may be composed of multiple files, such as the video content and closed caption text. This fact is not usually apparent to the end-user consuming the document/ content.

7 An assembly of files that represented the video, audio, captions and timing files for a movie is an example of a document.

8 A binder file used to bind together the various exhibits for a legal case would not be a document.

9 Documents may contain sub-documents.

3.1.12 *Embedded* — Directly included in the content that is downloaded to the user agent and its extension, and is intended to be used in rendering the web page.

NOTE — Something that is downloaded using a mechanism on the web page but is not used in rendering the page is not "embedded" in the page.

3.1.13 *ICT Network* — Technology and resources supporting the connection and operation of interconnected ICT.

3.1.14 *Information and Communication Technology (ICT)* — Technology, equipment, or interconnected system or subsystem of equipment for which the principal function is the creation, conversion, duplication, automatic acquisition, storage, analysis, evaluation, manipulation, management, movement, control, display, switching, interchange, transmission, reception, or broadcast of data or information.

NOTES

1 Examples of ICT are web pages, electronic content, telecommunications products, computers and ancillary equipment, software including mobile applications, information kiosks and transaction machines, videos, IT services, and multifunction office machines that copy, scan, and fax documents.

2 *RPwD* Act, 2016 defines, "ICT includes all services and innovations relating to information and communication, including telecom services, web-based services, electronic and print services, digital and virtual services."

3.1.15 *Mechanically Operable Part* — Operable part that has a mechanical interface to activate, deactivate, or adjust the ICT.

NOTE — Examples of mechanically operable parts include scanner covers, notebook docking stations and lids as well as physical switches and latches.

3.1.16 *Mechanism for Private Listening* — Auditory output designed so that only the current user can receive the sound.

NOTE — Personal headsets, directional speakers and audio hoods are examples of mechanisms for private listening.

3.1.17 *Non-text Content* — Content that is not a sequence of characters that can be programmatically determined or where the sequence is not expressing something in human language (*see* WCAG 2.1).

3.1.18 *Non-web Document* — Document that is not a web page, not embedded in web pages nor used in the rendering or functioning of the page.

3.1.19 *Non-web Software* — Software that is not a web page, not embedded in web pages nor used in the rendering or functioning of the page.

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3.1.20 *Open Functionality* — Functionality that supports access by assistive technology.

NOTE — This is the opposite of closed functionality.

3.1.21 *Operable Part* — Component of ICT used to activate, deactivate, or adjust the ICT.

NOTES

1 Operable parts can be provided in either hardware (*see* mechanically operable parts, above) or software. An on-screen button is an example of an operable part provided by software.

2 Operable parts do not include parts involved only in maintenance or repair or other actions that are not expected of a typical user if the product is not malfunctioning. These actions include: clearing paper jams internal to the machine, replacing items or parts internal to the machine that may expose the end user to sharp or hot surfaces, replacing or repairing items designated by manufacturers as service or maintenance items in user documentation.

3.1.22 *Person with Disability (PwD)* — A person with long term physical, mental, intellectual or sensory impairment which, in interaction with barriers, hinders his full and effective participation in society equally with others [*source*: *RPwD Act,* 2016].

3.1.23 *Platform Software (Platform)* — Collection of software components that runs on an underlying software or hardware layer, and that provides a set of software services to other software components that allows those applications to be isolated from the underlying software or hardware layer (*source*: ISO/IEC 13066-1).

NOTE — A particular software component might play the role of a platform in some situations and a client in others.

3.1.24 *Programmatically Determinable* — Able to be read by software from developer-supplied data in a way that other software, including assistive technologies, can extract and present this information to users in different modalities.

NOTE — WCAG 2.1 uses "determined" where this definition uses "able to be read" (to avoid ambiguity with the word "determined").

3.1.25 *Real-Time Text (RTT)* — Form of a text conversation in point-to-point situations or in multipoint conferencing where the text being entered is sent in such a way that the communication is perceived by the user as being continuous.

NOTES

1 Users will perceive communication as continuous if the delay between text being created by the sender and received by the recipient is less than 500ms. However, the actual delay will be dependent on the communication network.

2 The creation of text will differ between systems where text is entered on a word-by-word basis (for example, speech-to-text and predictive-text based systems) and systems where each character is separately generated (for example, typing on a physical keyboard).

3.1.26 *Reasonable Accommodation* — Necessary and appropriate modification and adjustments, without imposing a disproportionate or undue burden in a particular case, to ensure to persons with disabilities the enjoyment or exercise of rights equally with others [source: *RPwD Act,* 2016].

3.1.27 *Satisfies a Success Criterion* — Success criterion does not evaluate to "false" when applied to the ICT (*source*: WCAG 2.1 : 2018).

3.1.28 *Single User Connection* — Connection that consists of sound, RTT or video (or a combination of two or three of those media) that is established by a single user action.

NOTE — Even though the different media may travel over different channels, and more than one piece of hardware may be involved, it appears to the user like a single connection, and is treated by any intermediate technologies (for example, network, auto-reception) as a single connection for purposes such as transfer.

3.1.29 *Sign Language (or Signing Language)* — A language, instead of acoustically conveyed sound patterns, uses visually transmitted sign patterns (manual communication, body language) to convey meaning simultaneously combining hand shapes, orientation and movement of the hands, arms or body, and facial expressions to fluidly express a speaker's thoughts (*source*: MoI&B accessibility standard).

3.1.30 *Sign Language Interpretation* — Sign language of the programme audio (speech and other sounds) for viewers who are hearing impaired and use sign language. Whenever reference is made to 'sign language' in the Indian context' it will refer to a variant of it called 'Indian Sign Language' (ISL) (*source* MoI&B accessibility standard).

3.1.31 *Spoken Captions/Subtitles Audio Captions/ Subtitles* — Captions/subtitles that are voiced over the audio-visual content (*source* ISO/IEC TS 20071-25).

3.1.32 *Stationary ICT* — ICT that stands on the floor, or is mounted on a wall or other immovable structure, and is not intended to be moved by its user.

NOTES

1 Typically, stationary ICT rests on the ground (such as an information kiosk) or is installed in a wall (such as a machine that dispenses cash or performs other banking services).

2 A manufacturer cannot control the height of ICT that is put on a table by someone else, but they are able to control the reach dimensions of self-contained ICT that rests on the ground and can specify the heights for installation in walls.

3.1.33 *Terminal* — Combination of hardware and/or software with which the end user directly interacts and that provides the user interface.

NOTES

1 The hardware may consist of more than one device working together for example, a mobile device and a computer.

2 For some systems, the software that provides the user interface may reside on more than one device such as a telephone and a server.

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3.1.35 *Turn-taking* — Ttype of organization in conversation and discourse where participants speak one at a time in alternating turns.

3.1.36 *User Agent* — software that retrieves and presents content for users (*source* WCAG 2.1: 2018).

> NOTES
>
> **1** Software that only displays the content contained within it is treated as software and not considered to be a user agent.
>
> **2** An example of software that is not a user agent is a calculator application that does not retrieve the calculations from outside the software to present it to a user. In this case, the calculator software is not a user agent, it is simply software with a user interface.
>
> **3** Software that only shows a preview of content such as a thumbnail or other non-fully functioning presentation is not providing user agent functionality.

3.1.37 *Universal Design* — The design of products, environments, programmes and services to be usable by all people to the greatest extent possible, without the need for adaptation or specialised design and shall apply to assistive devices including advanced technologies for particular group of persons with disabilities.

3.1.38 *User Interface* — All components of an interactive system (software or hardware) that provide information and/or controls for the user to accomplish specific tasks with the interactive system (*source* ISO 9241-110).

3.1.39 *User Interface Element* — Entity of the user interface that is presented to the user by the software (Source: ISO 9241-171).

> NOTES
>
> **1** This term is also known as "user interface component".
>
> **2** User-interface elements can be interactive or not.

3.1.40 *Web Content* — Content that belongs to a web page, and that is used in the rendering or that is intended to be used in the rendering of the web page.

3.1.41 *Web Page* — Non-embedded resource obtained from a single URI using HTTP plus any other resources that are used in the rendering or intended to be rendered together with it by a user agent (*source*: WCAG 2.1: 2018).

3.2 Symbols

Void

3.3 Abbreviations

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

Abbreviation	Description
ANSI	American National Standards Institute
AT	Assistive Technology

ATAG	Authoring Tool Accessibility Guidelines (of W3C)
CPWD	Central Public Works Department
CSS	Cascading Style Sheets
DARPG	Department of Administrative Reforms and Public Grievances
DOM	Document Object Model
EU	European Union
FPS	Frames Per Second
FXML	XML-based user interface markup language
GIGW	Guidelines for Indian Government Apps and Websites
HTML	Hyper Text Markup Language
HTTP	Hyper Text Transfer Protocol
ICT	Information and Communication Technology
IETF	Internet Engineering Task Force
IMS	IP Multimedia System
INSCRIPT	Indian Script
IP	Internet Protocol
ISCII	Indian Script Code for Information Interchange
ISL	Indian Sign Language
ITU-T	International Telecommunication Union - Telecommunication standardization sector
LED	Light Emitting Device
MeitY	Ministry of Electronics and Information Technology, GoI
MoI&B	Ministry of Information and Broadcasting, GoI
MoUD	Ministry of Housing and Urban Affairs, GoI
NIC	National Informatics Centre
ODF	Open Document Format
OOXML	Office Open eXtensible Markup Language
PSTN	Public Switched Telephone Network
PwD	Person with Disabilities
QVGA	Quarter Video Graphics Array
RBI	Reserve Bank of India
RFC	Request For Comment
RPwD	*Rights of Persons with Disabilities Act*, 2016

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RTT	Real-Time Text
SIP	Session Initiation Protocol
STQC	Standardization Testing and Quality Certification directorate, GoI
TRAI	Telecom Regulatory Authority of India, GoI
UAAG	User Agent Accessibility Guidelines (of W3C)
URI	Uniform Resource Identifier
USB	Universal Serial Bus
VGA	Video Graphics Array
VOIP	Voice Over IP
W3C	World Wide Web Consortium
WAI	Web Accessibility Initiative
WCAG	Web Content Accessibility Guidelines (of W3C/WAI)
WLAN	Wireless Local Access Network
XML	eXtensible Markup Language
XUL	XML User interface Language

4 FUNCTIONAL PERFORMANCE

4.1 Meeting Functional Performance Statements

The statements set out in **4.2** are intended to describe the functional performance of ICT enabling people to locate, identify, and operate ICT functions, and to access the information provided, regardless of physical, cognitive or sensory abilities. Any differences in ability may be permanent, temporary or situational. The requirements in **5** to **13** provide specific testable criteria for accessible ICT, corresponding to the user needs reflected in **4.2**.

NOTES

1 The relationship between the requirements from **5** to **13** and the functional performance statements is set out in Annex B.

2 The intent of **4.2** is to describe the ICT performance in enabling users to access the full functionality and documentation of the product or the service with or without the use of assistive technologies.

3 The methods of meeting the accessibility needs of users with multiple access needs will depend on the specific combination of needs. Meeting these user accessibility needs may be addressed by considering multiple clauses in **4.2**.

4 Several users' accessibility needs rely on ICT providing specific modes of operation. If a user is to activate, engage or switch to the mode that complies with his or her user accessibility needs, the method for activating, engaging or switching to that mode would need to comply with the same user accessibility needs.

4.2 Functional Performance Statements

4.2.1 *Usage Without Vision*

Where ICT provides visual modes of operation, the ICT provides at least one mode of operation that does not require vision. This is essential for users without vision and benefits many more users in different situations.

NOTES

1 A web page or application with a well-formed semantic structure can allow users without vision to identify, navigate and interact with a visual user interface.

2 Audio, tactile and haptic user interfaces may contribute towards meeting this clause.

4.2.2 *Usage with Limited Vision*

Where ICT provides visual modes of operation, the ICT provides features that enable users to make better use of their limited vision. This is essential for users with limited vision and benefits many more users in different situations.

NOTES

1 Magnification, reduction of required field of vision and control of contrast, brightness and intensity can contribute towards meeting this clause.

2 Where significant features of the user interface are dependent on depth perception, the provision of additional methods of distinguishing between the features may contribute towards meeting this clause.

3 Users with limited vision may also benefit from non-visual access (*see* **4.2.1**).

4.2.3 *Usage without Perception of Colour*

Where ICT provides visual modes of operation, the ICT provides a visual mode of operation that does not require user perception of colour. This is essential for users with limited colour perception and benefits many more users in different situations.

NOTE — Where significant features of the user interface are colour-coded, the provision of additional methods of distinguishing between the features may contribute towards meeting this clause.

4.2.4 *Usage without Hearing*

Where ICT provides auditory modes of operation, the ICT provides at least one mode of operation that does not require hearing. This is essential for users without hearing and benefits many more users in different situations.

NOTES

1 Visual and tactile user interfaces, including those based on sign language, may contribute towards meeting this clause.

2 In respective of sign language, Indian Sign Language (ISL) may be supported.

3 Captioning and Sub-titling will also contribute to meeting this clause, especially in respect of broadcast TV programs or streamed video or audio or in video conferencing meetings.

4.2.5 *Usage with Limited Hearing*

Where ICT provides auditory modes of operation, the ICT provides enhanced audio features. This is essential for users with limited hearing and benefits many more users in different situations.

NOTES

1 Enhancement of the audio clarity, reduction of background noise, providing a joint monaural option, adjustment of balance

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of both audio channels, increased range of volume and greater volume in the higher frequency range can contribute towards meeting this clause.

2 Allowing the use of Assistive Listening Devices, such as headsets with noise cancellation (connected by cable, Bluetooth or WLAN) can contribute towards meeting this clause.

3 Users with limited hearing may also benefit from non-hearing access (*see* **4.2.4**).

4.2.6 *Usage with no or Limited Vocal Capability*

Where ICT requires vocal input from users, the ICT provides at least one mode of operation that does not require them to generate vocal output. This is essential users with no or limited vocal capability and benefits many more users in different situations.

NOTES

1 Vocal output includes speech and other orally generated sounds, such as whistles and clicks.

2 Keyboard, pen or touch user interfaces may contribute towards meeting this clause.

4.2.7 *Usage with Limited Manipulation or Strength*

Where ICT requires manual actions, the ICT provides features that enable users to make use of the ICT through alternative actions not requiring manipulation, simultaneous action or hand strength. This is essential for users with limited manipulation or strength and benefits many more users in different situations.

NOTES

1 Examples of operations that users may not be able to perform include those that require fine motor control, path dependant gestures, pinching, twisting of the wrist, tight grasping, or simultaneous manual actions.

2 One-handed operation, sequential key entry and speech user interfaces may contribute towards meeting this clause.

3 Some users have limited hand strength and may not be able to achieve the level of strength to perform an operation. Alternative user interface solutions that do not require hand strength may contribute towards meeting this clause.

4.2.8 *Usage with Limited Reach*

Where ICT products are free-standing or installed, all the elements required for operation will need to be within reach of all users. This is essential for users with limited reach and benefits many more users in different situations.

NOTES

1 Considering the needs of wheelchair users and the range of user statures in the placing of operational elements of the user interface may contribute towards meeting this clause.

2 Considering the differences in reach-range of ICT of Indian users, including those with disabilities, the design of public places and installation of information kiosks, ATMs, Ticketing machines and the like, needs to meet Indian user needs.

4.2.9 *Minimize Photosensitive Seizure Triggers*

Where ICT provides visual modes of operation, the ICT provides at least one mode of operation that minimizes the potential for triggering photosensitive seizures.

This is essential for users with photosensitive seizure triggers.

NOTE — Limiting the area and number of flashes per second may contribute towards meeting this clause.

4.2.10 *Usage with Limited Cognition, Language or Learning*

The ICT provides features and/or presentation that makes it simpler and easier to understand, operate and use. This is essential for users with limited cognition, language or learning, and benefits many more users in different situations.

NOTES

1 Adjustable timings, error indication and suggestion, and a logical focus order are examples of design features that may contribute towards meeting this clause.

2 Providing an audio output of the text is an example of providing support for people with limited reading abilities.

3 Providing spelling aid and word prediction of the text is an example of providing support for people with limited writing abilities.

4 Interaction with content can be made easier, and less prone to errors, by presenting tasks in steps that are easy to follow.

4.2.11 *Privacy*

Where ICT provides features for accessibility, the ICT maintains the privacy of users of these features at the same level as other users.

NOTE — Enabling the connection of personal headsets for private listening, not providing a spoken version of characters being masked and enabling user control of legal, financial and personal data are examples of design features that may contribute towards meeting this clause.

4.2.12 *Support to Indian Languages*

Accessibility support shall be provided in respect of all the features, functions or contents provided by the ICT, in respect of all the Indian languages figuring in the eighth schedule of the Indian constitution. This is essential to support users with disabilities to understand, comprehend, use and operate the functions of the ICT at the same level or better in these languages.

5 GENERIC REQUIREMENTS

5.1 Closed Functionality

5.1.1 *Introduction (Informative)*

ICT has closed functionality for many reasons, including design or policy. Some of the functionality of products can be closed because the product is self-contained and users are precluded from adding peripherals or software in order to access that functionality.

ICT may have closed functionality in practice even though the ICT was not designed, developed or supplied to be closed.

Computers that do not allow end-users to adjust settings or install software are functionally closed.

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5.1.2 *General*

5.1.2.1 *Closed functionality*

Where ICT has closed functionality, it shall meet the requirements set out in clauses 5.2 to 13, as applicable. Indian language requirements shall be met through support to UNICODE (*source* ISO/IEC 10646), display (*source* IS/ISO/IEC 14496-22 : 2009), inputting of text in mobile phones (*source* IS 16333-3), encoding and Enhanced INSCRIPT keyboard layouts (*source* IS 16350 : 2016) and encoding standards (*source* Character Encoding: 01: 2009)

NOTES

1 ICT may close some, but not all, of its functionalities. Only the closed functionalities have to conform to the requirements of **5.1**.

2 The requirements within this clause replace those in **5.2** to **13** that specifically state that they do not apply to closed functionality. This may be because they relate to compatibility with assistive technology or to the ability for the user to adjust system accessibility settings in products with closed functionality (for example, products that prevent access to the system settings control panel).

3 Whenever an Indian language is chosen by the user, the device or the closed function shall support the same.

5.1.2.2 *Assistive technology*

Where ICT has closed functionality that closed functionality shall be operable without requiring the user to attach, connect or install assistive technology and shall conform to the generic requirements of **5.1.3** to **5.1.6** as applicable. Personal headsets and personal induction loops shall not be classed as assistive technology for the purpose of this clause.

5.1.3 *Nonvisual Access*

5.1.3.1 *Non-visual output of visual information*

Where visual information is needed to enable the use of those functions of ICT that are closed to assistive technologies for screen reading, ICT shall provide at least one mode of operation using non-visual access to enable the use of those functions.

NOTES

1 Non-visual access may be in an audio form, including speech, or in haptic form or in tactile form, such as braille for deaf- blind users.

2 The visual information needed to enable use of some functions may include operating instructions and orientation, transaction prompts, user input verification, error messages and non-text content.

3 Whenever an Indian language is chosen by the user, non-visual access shall also support the same Indian language.

5.1.3.2 *Auditory output delivery including speech*

Where auditory output is provided as non-visual access to closed functionality, the auditory output shall be delivered:

a) either directly by a mechanism included in or provided with the ICT; or

b) by a personal headset that can be connected through a 3.5 mm audio jack, or an industry standard connection, without requiring the use of vision.

NOTES

1 Mechanisms included in or provided with ICT may be, but are not limited to, a loudspeaker, a built-in handset/headset, or other industry standard coupled peripheral.

2 An industry standard connection could be a wireless connection.

3 Some users may benefit from the provision of an inductive loop.

4 'Where an Indian language .is chosen by the user, auditory output shall also be provided in the same language chosen by the user.

5.1.3.3 *Auditory output correlation*

Where auditory output is provided as non-visual access to closed functionality, and where information is displayed on the screen, the ICT should provide auditory information that allows the user to correlate the audio with the information displayed on the screen.

NOTES

1 Many people who are legally blind still have visual ability, and use aspects of the visual display even if it cannot be fully comprehended. An audio alternative that is both complete and complementary includes all visual information such as focus or highlighting, so that the audio can be correlated with information that is visible on the screen at any point in time.

2 Examples of auditory information that allows the user to correlate the audio with the information displayed on the screen include structure and relationships conveyed through presentation.

5.1.3.4 *Speech output user control*

Where speech output is provided as non-visual access to closed functionality, the speech output shall be capable of being interrupted and repeated when requested by the user, where permitted by security requirements.

NOTES

1 It is best practice to allow the user to pause speech output rather than just allowing them to interrupt it.

2 It is best practice to allow the user to repeat only the most recent portion rather than requiring play to start from the beginning.

5.1.3.5 *Speech output automatic interruption*

Where speech output is provided as non-visual access to closed functionality, the ICT shall interrupt current speech output when a user action occurs and when new speech output begins.

NOTE — Where it is essential that the user hears the entire message, for example, a safety instruction or warning, the ICT may need to block all user action so that speech is not interrupted.

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5.1.3.6 *Speech output for non-text content*

Where ICT presents non-text content, the alternative for non-text content shall be presented to users *via* speech output unless the non-text content is pure decoration or is used only for visual formatting. The speech output for non-text content shall follow the guidance for "text alternative" described in WCAG 2.1 Success Criterion 1.1.1.

> NOTE — Such non-text content shall be in the same Indian language chosen by the user.

5.1.3.7 *Speech output for video information*

Where pre-recorded video content is needed to enable the use of closed functions of ICT and where speech output is provided as non-visual access to closed functionality, the speech output shall present equivalent information for the pre-recorded video content.

> NOTES
>
> 1 This speech output can take the form of an audio description or an auditory transcript of the video content.
>
> 2 This speech output shall be in the same Indian language chosen by the user.

5.1.3.8 *Masked entry*

Where auditory output is provided as non-visual access to closed functionality, and the characters displayed are masking characters, the auditory output shall not be a spoken version of the characters entered unless the auditory output is known to be delivered only to a mechanism for private listening, or the user explicitly chooses to allow non-private auditory output.

> NOTES
>
> 1 Masking characters are usually displayed for security purposes and include, but are not limited to asterisks representing personal identification numbers.
>
> 2 Unmasked character output might be preferred when closed functionality is used, for example, in the privacy of the user's home. A warning highlighting privacy concerns might be appropriate to ensure that the user has made an informed choice.
>
> 3 The masked and unmasked character outputs shall be in the same Indian language chosen by the user.

5.1.3.9 *Private access to personal data*

Where auditory output is provided as non-visual access to closed functionality, and the output contains data that is considered to be private according to the applicable privacy policy, the corresponding auditory output shall only be delivered through a mechanism for private listening that can be connected without requiring the use of vision, or through any other mechanism explicitly chosen by the user.

> NOTES
>
> 1 This requirement does not apply in cases where data is not defined as being private according to the applicable privacy policy or where there is no applicable privacy policy.
>
> 2 Non-private output might be preferred when closed functionality is used, for example, in the privacy of the

user's home. A warning highlighting privacy concerns might be appropriate to ensure that the user has made an informed choice.

> 3 Privacy preserving output shall also be in the same language chosen by the user. The warning highlighting privacy shall also be in the same language.

5.1.3.10 *Non interfering audio output*

Where auditory output is provided as non-visual access to closed functionality, the ICT shall not automatically play, at the same time, any interfering audible output that lasts longer than three seconds.

5.1.3.11 *Private listening volume*

Where auditory output is provided as non-visual access to closed functionality and is delivered through a mechanism for private listening, ICT shall provide at least one non-visual mode of operation for controlling the volume.

5.1.3.12 *Speaker volume*

Where auditory output is provided as non-visual access to closed functionality and is delivered through speakers on ICT, a non-visual incremental volume control shall be provided with output amplification up to a level of at least 65 dBA (-29 dBPaA).

> NOTE — For noisy environments, 65 dBA may not be sufficient.

5.1.3.13 *Volume reset*

Where auditory output is provided as non-visual access to closed functionality, a function that resets the volume to be at a level of 65 dBA or less after every use, shall be provided, unless the ICT is dedicated to a single user.

> NOTE — A feature to disable the volume reset function may be provided in order to enable the single-user exception to be met.

5.1.3.14 *Spoken languages*

Where speech output is provided as non-visual access to closed functionality, speech output shall be in the same human language as the displayed content provided, except:

a) for proper names, technical terms, words of indeterminate language, and words or phrases that have become part of the vernacular of the immediately surrounding text;

b) where the content is generated externally and not under the control of the ICT vendor, the present clause shall not be required to apply for languages not supported by the ICT's speech synthesizer;

c) for displayed languages that cannot be selected using non-visual access; and

d) where the user explicitly selects a speech language that is different from the language of the displayed content.

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5.1.3.15 *Non-visual error identification*

Where speech output is provided as non-visual access to closed functionality and an input error is automatically detected, speech output shall identify and describe the item that is in error.

NOTE — The speech output of the error message shall be in the same Indian language chosen by the user.

5.1.3.16 *Receipts, tickets, and transactional outputs*

Where ICT is closed to visual access and provides receipts, tickets or other outputs as a result of a self-service transaction, speech output shall be provided which shall include all information necessary to complete or verify the transaction. In the case of ticketing machines, printed copies of itineraries and maps shall not be required to be audible.

NOTES

1 The speech output may be provided by any element of the total ICT system.

2 The speech output may be provided in the same language chosen by the user, immaterial of the language of the text contained in the receipt, ticket or other outputs.

3 In respect of transactions involving payment gateways, the choice of Indian language by the user shall be respected during the entire course of the transaction.

5.1.4 *Functionality Closed to Text Enlargement*

Where any functionality of ICT is closed to the text enlargement features of platform or assistive technology, the ICT shall provide a mode of operation where the text and images of text necessary for all functionality is displayed in such a way that a non-accented capital "H" subtends an angle of at least 0.7 degrees at a viewing distance specified by the supplier.

The subtended angle, in degrees, may be calculated from:

$$\Psi = (180 \times H)/(\pi \times D)$$

where

ψ = the subtended angle in degrees;

H = the height of the text; and

D = the viewing distance.

D and H are expressed in the same units.

NOTES

1 The intent is to provide a mode of operation where text is large enough to be used by most users with low vision.

2 Table 1 and Fig. 1 illustrate the relationship between the maximum viewing distance and minimum character height at the specified minimum subtended angle.

3 In respect of Indian language as a choice of display, chosen sentence spacing and fonts have to ensure that successive sentences and characters do not stick to each other, obstructing a clear reading of characters and words (source IS/ISO/IEC 14496-22 : 2015).

Table 1 Relationship between Maximum Design Viewing Distance and Minimum Character Height at the Limit of Subtended Angle

[*Clause* 5.1.4, Note 2]

Minimum Subtended Angle	Maximum Design Viewing Distance	Minimum Character Height
	100 mm	1.2 mm
	200 mm	2.4 mm
	250 mm	3.1 mm
	300 mm	3.7 mm
0.7 degrees	350 mm	4.3 mm
	400 mm	4.9 mm
	450 mm	5.5 mm
	500 mm	6.1 mm
	550 mm	6.7 mm
	600 mm	7.3 mm

5.1.5 *Visual Output for Auditory Information*

Where auditory information is needed to enable the use of closed functions of ICT, the ICT shall provide visual information that is equivalent to the auditory output.

NOTES

1 This visual information can take the form of captions or text transcripts.

2 Whenever an Indian language is supported, the visual output and auditory information shall be in the same language as the one chosen by the user.

5.1.6 *Operation without Keyboard Interface*

5.1.6.1 *Closed functionality*

Where ICT functionality is closed to keyboards or keyboard interfaces, all functionality shall be operable without vision as required by **5.1.3**.

5.1.6.2 *Input focus*

Where ICT functionality is closed to keyboards or keyboard interfaces and where input focus can be moved to a user interface element, it shall be possible to move the input focus away from that element using the same mechanism, in order to avoid trapping the input focus.

5.1.7 *Access without Speech*

Where speech is needed to operate closed functions of ICT, the ICT shall provide at least one mode of operation using an alternative input mechanism that does not require speech.

NOTE — The alternative input shall be in the same Indian language chosen by the user.

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FIG. 1 RELATIONSHIP BETWEEN MINIMUM CHARACTER HEIGHT
AND MAXIMUM DESIGN VIEWING DISTANCE

5.2 Activation of Accessibility Features

Where ICT has documented accessibility features, it shall be possible to activate those documented accessibility features that are required to meet a specific need without relying on a method that does not support that need.

5.3 Biometrics

Where ICT uses biological characteristics, it shall not rely on the use of a particular biological characteristic as the only means of user identification or for control of ICT.

NOTES

1 Alternative means of user identification or for control of ICT could be non-biometric or biometric.

2 Biometric methods based on dissimilar biological characteristics increase the likelihood that individuals with disabilities possess at least one of the specified biological characteristics. Examples of dissimilar biological characteristics are fingerprints, eye retinal patterns, voice, and face.

5.4 Preservation of Accessibility Information during Conversion

Where ICT converts information or communication it shall preserve all documented non-proprietary information that is provided for accessibility, to the extent that such information can be contained in or supported by the destination format.

5.5 Operable Parts

5.5.1 *Means of Operation*

Where ICT has operable parts that require grasping, pinching, or twisting of the wrist to operate, an accessible alternative means of operation that does not require these actions shall be provided.

5.5.2 *Operable Parts Discernibility*

Where ICT has operable parts, it shall provide a means to discern each operable part, without requiring vision and without performing the action associated with the operable part.

NOTE — One way of meeting this requirement is by making the operable parts tactilely discernible.

5.6 Locking or Toggle Controls

5.6.1 *Tactile or Auditory Status*

Where ICT has a locking or toggle control and the status of that control is visually presented to the user, the ICT shall provide at least one mode of operation where the status of the control can be determined either through touch or sound without operating the control.

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NOTES

1 Locking or toggle controls are those controls that can only have two or three states and that keep their state while being used.

2 An example of a locking or toggle control is the "Caps Lock" key found on most keyboards. Another example is the volume button on a pay telephone, which can be set at normal, loud, or extra loud volume.

5.6.2 *Visual Status*

Where ICT has a locking or toggle control and the status of the control is non-visually presented to the user, the ICT shall provide at least one mode of operation where the status of the control can be visually determined when the control is presented. The state before and after the toggle action should be presented in accessible form.

NOTES

1 Locking or toggle controls are those controls that can only have two or three states and that keep their state while being used.

2 An example of a locking or toggle control is the "Caps Lock" key found on most keyboards. An example of making the status of a control determinable is a visual status indicator on a keyboard.

5.7 Key Repeat

Where ICT has a key repeat function that cannot be turned off:

a) the delay before the key repeat shall be adjustable to at least 2 s; and

b) the key repeat rate shall be adjustable down to one character per 2 s.

5.8 Double-strike Key Acceptance

Where ICT has a keyboard or keypad, the delay after any keystroke, during which an additional key-press will not be accepted if it is identical to the previous keystroke, shall be adjustable up to at least 0,5 s.

5.9 Simultaneous User Actions

Where ICT has a mode of operation requiring simultaneous user actions for its operation, such ICT shall provide at least one mode of operation that does not require simultaneous user actions to operate the ICT.

NOTE — Having to use both hands to open the lid of a laptop, having to press two or more keys at the same time or having to touch a surface with more than one finger are examples of simultaneous user actions.

5.10 Support to Indian Languages

Where ICT offers a feature, functionality or content in any one or more of the twenty-two Indian languages mentioned in Schedule 8 of the Indian constitution, accessibility support shall be provided to the users who opt to use the ICT in any one or more of the Indian languages chosen by the user. These shall cover all aspects of perceivability, operability, understandability

and robustness as covered in **5.1** to **5.9** above and elsewhere in this standard in 6 to 13, wherever applicable, and in closed systems and open systems.

5.10.1 *Indian Language Requirements*

The Indian Language Requirements shall be met through support to UNICODE (*source* ISO/IEC 10646), display (*source* IS/ISO/IEC 14496-22 : 2015), inputting of text in mobile phones (*source* IS 16333-3), encoding and Enhanced INSCRIPT keyboard layouts (*source* IS 16350 : 2016) and encoding standards (Source: Character Encoding: 01: 2009)

NOTES

1 In respect of desktop/laptop, enhanced INSCRIPT keyboard layouts covered in IS 16350 : 2016 is the preferred standard.

2 As regards the system input, output, storage and display, the ICT product/system/service shall follow the internationalization (i18n), localization (l10n), globalization (g11n), localizability (l12y) standards/guidelines; they shall support internationalization in domain names and mail servers; they shall follow Indian language standards. It is desirable to provide inputting and display of text in the same Indian language of choice of the user for speech. For Indian languages, Indian standards related to keyboard and fonts shall be provided and made use of. There are many file formats, storage standards etc. Herein, it is expected that for Indian languages text storage unicode encoding to be used in **5.11** support to Indian Sign Language (ISL)

5.11 Indian Sign Language

In respect of use of sign language to address the needs of hearing impaired, Indian Sign Language (ISL) shall be used.

5.12 Captioning and Sub-titling

In respect of use of captioning and sub-titling to address the needs of hearing impaired, especially in support of broadcast video or streaming video content or in support of video conferencing platforms, the standard issued by Ministry of Information and Broadcasting may be followed.

6 ICT WITH TWO-WAY VOICE COMMUNICATION

6.1 Audio Bandwidth for Speech

Where ICT provides two-way voice communication, in order to provide good audio quality, that ICT shall be able to encode and decode two-way voice communication with a frequency range with an upper limit of at least 7000 Hz.

NOTES

1 For the purposes of interoperability, support of Recommendation ITU-T G.722 is widely used.

2 Where codec negotiation is implemented, other standardized codecs, such as Recommendation ITU-T G.722.2 are sometimes used so as to avoid transcoding.

6.2 Real-Time Text (RTT) Functionality

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6.2.1 *RTT Provision*

6.2.1.1 *RTT communication*

Where ICT is in a mode, that provides a means for two-way voice communication, the ICT shall provide a means for two-way RTT communication, except where this would require design changes to add input or output hardware to the ICT.

NOTES

1 This requirement includes those products which do not have physical display or text entry capabilities but have the capability to connect to devices that do have such capabilities. It also includes intermediate ICT between the endpoints of the communication.

2 There is no requirement to add: a hardware display, a hardware keyboard, or hardware to support the ability to connect to a display or keyboard, wired or wirelessly, if this hardware would not normally be provided.

3 For the purposes of interoperability, support of Recommendation ITU-T T.140 is widely used.

4 When an Indian language setting is selected by the user, the text shall also be in the same language as the language of the voice.

5 Feature phones may not be able to support RTT capabilities.

6.2.1.2 *Concurrent voice and text*

Where ICT provides a means for two-way voice communication and for users to communicate by RTT, it shall allow concurrent voice and text through a single user connection.

NOTES

1 With many-party communication, as in a conference system, it is allowed (but not required or necessarily recommended) that RTT be handled in a single display field and that "turn-taking" be necessary to avoid confusion (in the same way that turn-taking is required for those presenting/talking with voice).

2 With many-party communication, best practice is for hand-raising for voice users and RTT users to be handled in the same way, so that voice and RTT users are in the same queue.

3 With a many-party conference system that has chat as one of its features - the RTT (like the voice) would typically be separate from the chat so that RTT use does not interfere with chat (that is, people can be messaging in the chat field while the person is presenting/talking with RTT-in the same manner that people message using the chat feature while people are talking with voice). RTT users would then use RTT for presenting and use the chat feature to message while others are presenting (*via* voice or RTT).

4 The availability of voice and RTT running concurrently (and separately from chat) can also allow the RTT field to support text captioning when someone is speaking (and it is therefore not being used for RTT since it is not the RTT user's turn to speak).

5 Where both server-side software and local hardware and software are required to provide voice communication, where neither part can support voice communication without the other and are sold as a unit for the voice communication function, the local and server-side components are considered a single product.

6 Whenever the speech, RTT and Chat are taking place, it is desirable to provide text in the same Indian language supported

and chosen by the user for speech, unless it is agreed to by convention or by an understanding prior to the conversation that a common language will be used for text and chat, that may not be the spoken language of the users.

6.2.2 *Display of RTT*

6.2.2.1 *Visually distinguishable display*

Where ICT has RTT display for send and receive capabilities, the sent text shall be visually differentiated from, and separated from, received text.

NOTES

1 The ability of the user to choose between having the send and receive text be displayed in-line or separately, and with options to select, allows users to display RTT in a form that works best for them. This would allow Braille users to use a single field and take turns and have text appear in the sequential way that they may need or prefer.

2 Whenever the desired Indian language of the user is offered, the language chosen by the user shall be preserved in the display, unless the sender and receiver agree to use a common language for the RTT.

6.2.2.2 *Programmatically determinable send and receive direction*

Where ICT has RTT send and receive capabilities, the send/receive direction of transmitted/received text shall be programmatically determinable, unless the RTT is implemented as closed functionality.

NOTES

1 This enables screen readers to distinguish between incoming text and outgoing text when used with RTT functionality.

2 Where one or more desired Indian languages of the user are offered, the function of programmatically determining the language of the text by the sender and receiver shall be provided for better coordination of communication.

6.2.2.3 *Speaker identification*

Where ICT has RTT capabilities, and provides speaker identification for voice, the ICT shall provide speaker identification for RTT.

NOTES

1 This is necessary to enable both voice and RTT participants to know who is currently communicating, whether it be in RTT or voice.

2 Whenever the desired Indian language of the user is offered, speaker identification for RTT shall be in the chosen Indian language of the user.

6.2.2.4 *Visual indicator of Audio with RTT*

Where ICT provides two-way voice communication, and has RTT capabilities, the ICT shall provide a real-time visual indicator of audio activity on the display.

NOTES

1 The visual indicator may be a simple character position on the display that flickers on and off to reflect audio activity, or presentation of the information in another way that can be both visible to sighted users and passed on to deaf-blind users who are using a braille display.

2 Without this indication a person who lacks the ability to hear does not know when someone is talking.

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6.2.3 *Interoperability*

Where ICT with RTT functionality interoperates with other ICT with RTT functionality (as required by **6.2.1.1**) they shall support the applicable RTT interoperability mechanisms described below:

a) ICT interoperating with other ICT directly connected to the Public Switched Telephone Network (PSTN), using Recommendation ITU-T V.18 or any of its annexes for text telephony signals at the PSTN interface;

b) ICT interoperating with other ICT using VOIP with Session Initiation Protocol (SIP) and using RTT that conforms to IETF RFC 4103. For ICT interoperating with other ICT using the IP Multimedia Sub-System (IMS) to implement VOIP, the set of protocols specified in ETSI TS 126 114, ETSI TS 122 173 and ETSI TS 134 229 describe how IETF RFC 4103 would apply;

c) ICT interoperating with other ICT using technologies other than a or b, above, using a relevant and applicable common specification for RTT exchange that is published and available for the environments in which they will be operating. This common specification shall include a method for indicating loss or corruption of characters; and

d) ICT interoperating with other ICT using a standard for RTT that has been introduced for use in any of the above environments, and is supported by all of the other active ICT that support voice and RTT in that environment.

NOTES

1 In practice, new standards are introduced as an alternative codec/protocol that is supported alongside the existing common standard and used when all end-to-end components support it while technology development, combined with other reasons including societal development and cost efficiency, may make others become obsolete.

2 Where multiple technologies are used to provide voice communication, multiple interoperability mechanisms may be needed to ensure that all users are able to use RTT.

Example — A conferencing system that supports voice communication through an internet connection might provide RTT over an internet connection using a proprietary RTT method (option c). However, regardless of whether the RTT method is proprietary or non-proprietary, if the conferencing system also offers telephony communication it will also need to support options a or b to ensure that RTT is supported over the telephony connection.

6.2.4 *RTT Responsiveness*

Where ICT utilises RTT input, that RTT input shall be transmitted to the ICT network or platform on which the ICT runs within 500ms of the time that the smallest reliably composed unit of text entry is available to

the ICT for transmission. Delays due to platform or network performance shall not be included in the 500 ms limit.

NOTES

1 For character-by-character input, the "smallest reliably composed unit of text entry" would be a character.

2 For word prediction it would be a word. For some voice recognition systems-the text may not exit the recognition software until an entire word (or phrase) has been spoken. In this case, the smallest reliably composed unit of text entry available to the ICT would be the word (or phrase).

3 The 500 ms limit allows buffering of characters for this period before transmission so character by character transmission is not required unless the characters are generated more slowly than 1 per 500 ms.

4 A delay of 300 ms, or less, produces a better impression of flow to the user.

6.3 Caller ID

Where ICT provides caller identification or similar telecommunications functions, the caller identification and similar telecommunications functions shall be available in text form as well as being programmatically determinable, unless the functionality is closed.

NOTE — Whenever the desired Indian language of the user is offered, Caller ID shall also be in the Indian language chosen by the user.

6.4 Alternatives to Voice-based Services

Where ICT provides real-time voice-based communication and also provides voice mail, auto-attendant, or interactive voice response facilities, the ICT shall offer users a means to access the information and carry out the tasks provided by the ICT without the use of hearing or speech.

NOTES

1 Tasks that involve both operating the interface and perceiving the information would require that both the interface and information be accessible without use of speech or hearing.

2 Solutions capable of handling audio, RTT and video media could satisfy the above requirement.

3 Solutions shall preferably use the same Indian language chosen by the user, be it audio or text.

6.5 Video Communication

6.5.1 *General (Informative)*

Clause **6.5** (video communications) provides performance requirements that support users who communicate using sign language and lip-reading. For these users, good usability is achieved with a resolution of at least Quarter Video Graphics Array (QVGA, 320×240), a frame rate of 20 frames per second and over, with a time difference between speech audio and video that does not exceed 100 ms.

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Increasing the resolution and frame rate further improves both sign language (especially finger spelling) and lip reading, with frame rate being more important than resolution.

Time differences between audio and video (asynchronicity) can have a great impact on lip-reading-with video that lags behind audio having greater negative effect.

End-to-end latency can be a problem in video (sign) communication. Overall delay values below 400 ms are preferred, with an increase in preference down to 100 ms. Overall delay depends on multiple factors, including for example, network delay and video processing. For this reason, a testable requirement on minimum values for overall delay cannot be produced.

NOTES

1 Recommendation ITU-T F.703 defines and gives requirements for total conversation that relate to the integration of audio, RTT and video in a single user connection.

2 Indian sign language shall only be used in conformance to MoI&B accessibility standard.

3 Often, network capabilities, especially in rural areas and with mobile or 2G usage, can pose challenges making it difficult to meet these performance requirements. In such cases, alternate means, such as captioning or sub-titling may be used.

6.5.2 *Resolution*

Where ICT that provides two-way voice communication includes real-time video functionality, the ICT:

a) shall support at least QVGA resolution; and

b) should preferably support at least VGA resolution.

6.5.3 *Frame Rate*

Where ICT that provides two-way voice communication includes real-time video functionality, the ICT:

a) shall support a frame rate of at least 20 frames per second (FPS); and

b) should preferably support a frame rate of at least 30 Frames Per Second (FPS) with or without sign language in the video stream.

6.5.4 *Synchronization between Audio and Video*

Where ICT that provides two-way voice communication includes real-time video functionality, the ICT shall ensure a maximum time difference of 100 ms between the speech and video presented to the user.

NOTE — Recent research shows that, if audio leads the video, the intelligibility suffers much more than the reverse.

6.5.5 *Visual Indicator of Audio with Video*

Where ICT provides two-way voice communication, and includes real-time video functionality, the ICT shall provide a real-time visual indicator of audio activity.

NOTES

1 The visual indicator may be a simple visual dot or LED, or other type of on/off indicator that flickers to reflect audio activity.

2 Without this indication a person who lacks the ability to hear does not know when someone is talking.

6.5.6 *Speaker Identification with Video (Sign Language) Communication*

Where ICT provides speaker identification for voice users, it shall provide a means for speaker identification for real- time signing and sign language users once the start of signing has been indicated.

NOTES

1 The speaker ID can be in the same location as for voice users for multiparty calls.

2 This mechanism might be triggered manually by a user, or automatically where this is technically achievable.

3 Display of speaker ID in Sign Language shall conform to Indian Sign Language (ISL).

6.6 Alternatives to Video-based Services

Where ICT provides real-time video-based communication and also provides answering machine, auto attendant or interactive response facilities, the ICT should offer users a means to access the information and carry out the tasks related to these facilities for:

a) audible information, without the use of hearing;

b) spoken commands, without the use of speech; and

c) visual information, without the use of vision.

NOTES

1 Solutions capable of generating real-time captions or handling RTT could satisfy the above requirement.

2 Solutions supporting Indian languages, shall offer captions in the same Indian language supported and chosen by the user and shall be as per this standard.

7 ICT WITH VIDEO CAPABILITIES

7.1 Caption Processing Technology

7.1.1 *Captioning Playback*

Where ICT displays video with synchronized audio, it shall have a mode of operation to display the available captions. Where closed captions are provided as part of the content, the ICT shall allow the user to choose to display the captions.

NOTES

1 Captions may contain information about timing, colour and positioning. This caption data is necessary for caption users. Timing is used for caption synchronization. Colour can be used for speaker identification. Position can be used to avoid obscuring important information.

2 If a Braille device is connected, the ICT should provide an option to display captions on the Braille device.

3 Clause **7.1.1** refers to the ability of the player to display captions. Clauses **9.1.2.2**, **10.1.2.2** and **11.1.2.2** refer to the provision of captions for the content (the video).

4 Captioning and sub-titling shall preferably be in the same Indian language chosen by the user or in the language agreed to by all participants.

5 Captioning shall be as per the MoI & B Accessibility standard.

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7.1.2 *Captioning Synchronization*

Where ICT displays captions, the mechanism to display captions shall preserve synchronization between the audio and the corresponding captions as follows:

a) Captions in recorded material: within 100 ms of the time stamp of the caption; and

b) Live captions: within 100 ms of the availability of the caption to the player.

7.1.3 *Preservation of Captioning*

Where ICT transmits, converts or records video with synchronized audio, it shall preserve caption data such that it can be displayed in a manner consistent with **7.1.1** and **7.1.2**.

Additional presentational aspects of the text such as screen position, text colours, text style and text fonts may convey meaning, based on regional conventions. Altering these presentational aspects could change the meaning and should be avoided wherever possible.

7.1.4 *Captions' Characteristics*

Where ICT displays captions, it shall provide a way for the user to adapt the displayed characteristics of captions to their individual requirements, except where the captions are displayed as unmodifiable characters.

NOTES

1 Defining the background and foreground colour of subtitles, font type, size opacity of the background box of subtitles, and the contour or border of the fonts can contribute to meeting this requirement.

2 Subtitles that are bitmap images are examples of unmodifiable characters.

3 Characteristics of Captions and subtitles shall be as per the MoI&B accessibility standard and, where Indian language is offered, shall be in the same language chosen by the user.

7.1.5 *Spoken Subtitles*

Where ICT displays video with synchronized audio, it shall have a mode of operation to provide a spoken output of the available captions, except where the content of the displayed captions is not programmatically determinable.

NOTES

1 Being able to manage speech output range for spoken subtitles independently from general ICT speech is preferable for most users. That is possible when the audio file with spoken subtitle is delivered in a separate audio track and mixed in the end users' device.

2 Presenting the separate audio track with spoken subtitles in synchronization with the displayed subtitles/captions improves understandability of the subtitles.

3 Providing subtitles/captions as separate text-streams, facilitates converting the respective texts into audio.

4 Subtitles that are bitmap images are examples where the content of the displayed captions will not be programmatically determinable.

7.2 Audio Description Technology

7.2.1 *Audio Description Playback*

Where ICT displays video with synchronized audio, it shall provide a mechanism to select and play available audio description to the default audio channel.

Where video technologies do not have explicit and separate mechanisms for audio description, an ICT is deemed to satisfy this requirement if the ICT enables the user to select and play several audio tracks.

NOTES

1 In such cases, the video content can include the audio description as one of the available audio tracks.

2 Audio descriptions in digital media sometimes include information to allow descriptions that are longer than the gaps between dialogue. Support in digital media players for this "extended audio description" feature is useful, especially for digital media that is viewed personally.

3 Where Indian language is offered, the audio descriptions shall be in the same Indian language supported by the system and chosen by the user.

7.2.2 *Audio Description Synchronization*

Where ICT has a mechanism to play audio description, it shall preserve the synchronization between the audio/visual content and the corresponding audio description.

7.2.3 *Preservation of Audio Description*

Where ICT transmits, converts, or records video with synchronized audio, it shall preserve audio description data such that it can be played in a manner consistent with **7.2.1** and **7.2.2**.

7.3 User Controls for Captions and Audio Description

Where ICT primarily displays materials containing video with associated audio content, user controls to activate subtitling and audio description shall be provided to the user at the same level of interaction (that is, the number of steps to complete the task) as the primary media controls.

NOTES

1 Primary media controls are the set of controls that the user most commonly uses to control media.

2 Products that have a general hardware volume control, such as a telephone, or a laptop which can be configured to display video through software but which is not its primary purpose, would not need dedicated hardware controls for captions and descriptions; however, software controls, or hardware controls mapped through software, would need to be at the same level of interaction.

3 It is best practice for ICT to include additional controls enabling the user to select whether captions and audio description are turned on or off by default.

4 Where Indian language is offered, user controls for captions and audio description shall be in the same language supported by the system and chosen by the user.

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8 HARDWARE

8.1 General

8.1.1 *Generic Requirements*

The "generic requirements" of clause 5 also apply to ICT that is hardware.

NOTES

1 Ability to input Indian language content and display Indian language content shall be provided in devices, especially desktops, laptops, notebooks, display boards, ATM's, kiosks, digital sign boards, and mobile devices (*source* IS/ISO/IEC 14496-22 : 2019, IS 16350 : 2016).

2 Choice of fonts considered appropriate for Indian languages for accessibility shall be offered for users with accessibility needs (*source* IS/ISO/IEC 14496-22 : 2019)

3 For website, SAKAL BHARATI font or similar font having same height and stem width for all Indian script is recommended.

8.1.2 *Standard Connections*

Where an ICT provides user input or output device connection points, the ICT shall provide at least one input and/or output connection that conforms to an industry standard non-proprietary format, directly or through the use of commercially available adapters.

NOTES

1 The intent of this requirement is to ensure compatibility with assistive technologies by requiring the use of standard connections on ICT.

2 The word connection applies to both physical and wireless connections.

3 Current examples of industry standard non-proprietary formats are USB and Bluetooth.

8.1.3 *Colour*

Where the ICT has hardware aspects that use colour, colour shall not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

8.2 Hardware Products with Speech Output

8.2.1 *Speech Volume Gain*

8.2.1.1 *Speech volume range*

Where ICT hardware has speech output, it shall provide a means to adjust the speech output volume level over a range of at least 18dB.

NOTE — Fixed-line handsets and headsets fulfilling the requirements of ANSI/TIA-4965 are deemed to comply with this requirement.

8.2.1.2 *Incremental volume control*

Where ICT hardware has speech output and its volume control is incremental, it shall provide at least one intermediate step of 12dB gain above the lowest volume setting.

8.2.2 *Magnetic Coupling*

8.2.2.1 *Fixed-line devices*

Where ICT hardware is a fixed-line communication device with speech output and which is normally held to the ear, it shall provide a means of magnetic coupling which meets the requirements of ETSI ES 200 381-1 and shall carry the "T" symbol specified in ETSI ETS 300 381.

NOTES

1 ICT fulfilling the requirements of TIA-1083-A is deemed to comply with the requirements of this clause.

2 Magnetic coupling is also known as inductive coupling for T-coil.'

8.2.2.2 *Wireless communication devices*

Where ICT hardware is a wireless communication device with speech output which is normally held to the ear, it shall provide a means of magnetic coupling to hearing technologies which meets the requirements of ETSI ES 200 381-2.

NOTE — ICT fulfilling the requirements of ANSI/IEEE C63.19 is deemed to comply with the requirements of this clause.

8.3 Stationary ICT

8.3.0 *General*

This standard defines the dimensions for accessing stationary ICT that can be placed in a built environment but does not define the dimensions of the built environment in general.

The scope includes stationary ICT, of which floors and circulation spaces are "an integral part" (typically kiosks and cabins), and where there are external reach ranges relevant for operating the stationary ICT.

8.3.1 *Forward or Side Reach*

Stationary ICT shall conform to either **8.3.2** or **8.3.3**.

NOTES

1 This does not preclude conforming to both clauses.

2 Physical access to stationary ICT is dependent on the dimensions of both the ICT and the environment in which it is installed and operated. Clause 8.3 does not apply to the accessibility of the physical environment external to the ICT.

3) The dimensions specified in the Harmonized Guidelines and Space Standards for Barrier-Free Built Environment for persons with Disability and Elderly Persons, Feb-16 to be referred.

8.3.2 *Forward Reach*

8.3.2.1 *Unobstructed high forward reach*

Where no part of the stationary ICT obstructs the forward reach, at least one of each type of operable part shall be located no higher than 1200 mm above the floor of the access space. This is shown in Fig. 2.

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8.3.2.2 Unobstructed low forward reach

Where no part of the stationary ICT obstructs the forward reach, at least one of each type of operable part shall be located no lower than 380 mm above the floor of the access space. This is shown in Fig. 2.

8.3.2.3 *Obstructed forward reach*

8.3.2.3.1 *Clear space*

Where an obstruction is an integral part of the stationary ICT and hinders the access to any type of operable part, the ICT shall provide a clear space which extends beneath the obstructing element for a distance not less than the required reach depth over the obstruction.

NOTE — Ensuring that there will be unhindered "access to any type of operable part" guarantees that a user will be able access at least one of each type of operable part.

8.3.2.3.2 *Obstructed (< 500 mm forward reach)*

Where the stationary ICT has an obstruction, which is an integral part of the ICT and which is less than 500 mm, the forward reach to at least one of each type of operable part shall be no higher than 1000 mm above the floor contact of the ICT. This is shown in Fig. 3 (a).

8.3.2.3.3 *Obstructed (< 600 mm forward reach)*

Where the stationary ICT has an obstruction, which is an integral part of the ICT and which is not less than 500 mm but is less than 600 mm maximum, the forward reach to at least one of each type of operable part shall be no higher than 1100 mm above the floor contact of the ICT. This is shown in Fig. 3 (b).
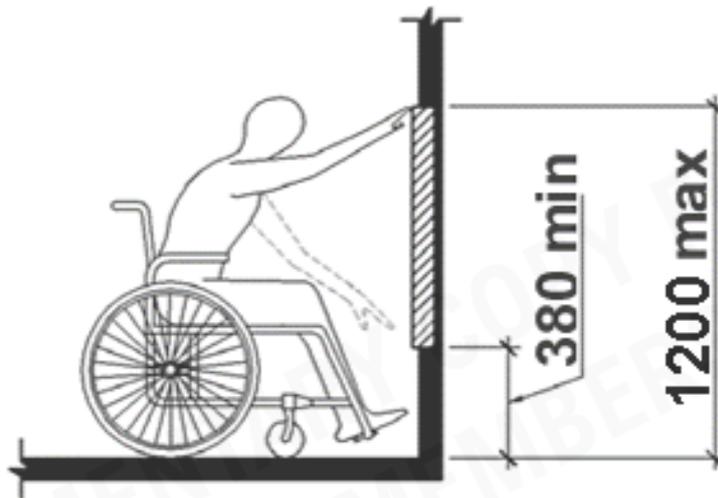
FIG. 2 UNOBSTRUCTED FORWARD REACH
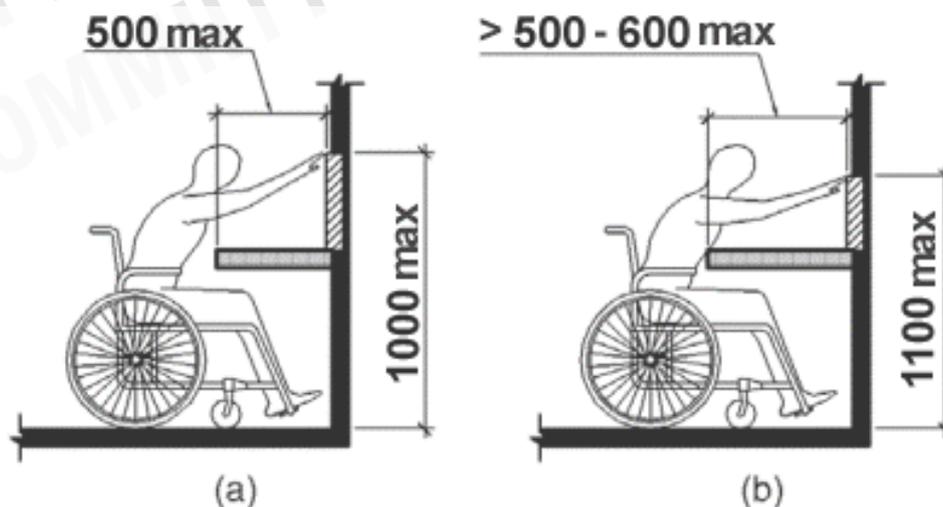
FIG. 3 OBSTRUCTED FORWARD REACH

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8.3.2.4 *Knee and toe clearance width*

Where the space under an obstacle that is an integral part of the stationary ICT is part of access space, the clearance shall be at least 900 mm wide.

8.3.2.5 *Toe clearance*

Where an obstacle is an integral part of the stationary ICT, a space under the obstacle that is less than 230 mm above the floor is considered toe clearance and shall:

  a) extend 635 mm maximum under the whole obstacle;

  b) provide a space at least 430 mm deep and 230 mm above the floor under the obstacle; and

  c) extend no more than 150 mm beyond any obstruction at 230 mm above the floor. This is shown in Fig. 4.

8.3.2.6 *Knee clearance*

Where an obstacle is an integral part of the stationary ICT, the space under the obstacle that is between 230 mm and 685 mm above the floor is considered knee clearance and shall:

  a) extend no more than 635 mm under the obstacle at a height of 230 mm above the floor;

  b) extend at least 280 mm under the obstacle at a height of 230 mm above the floor;

  c) extend at least 205 mm under the obstacle at a height of 685 mm above the floor; and

d) be permitted to be reduced in depth at a rate of 25 mm for each 150 mm in height.

This is shown in Fig. 5.
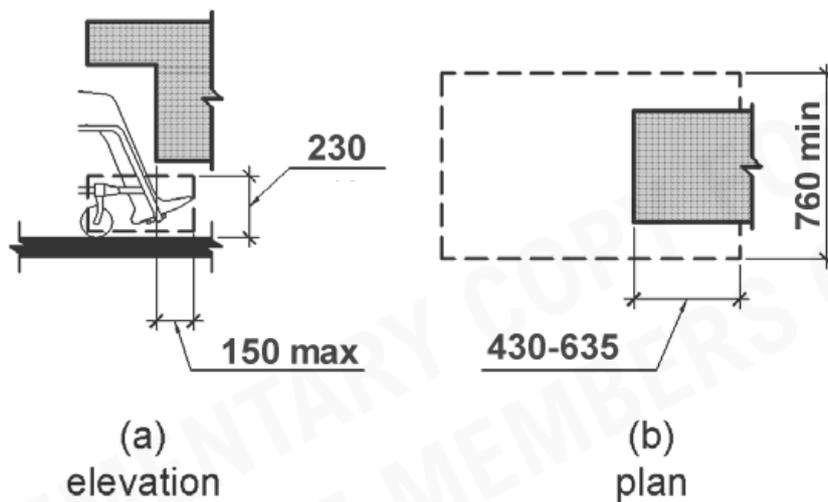
FIG.4 TOE CLEARANCE
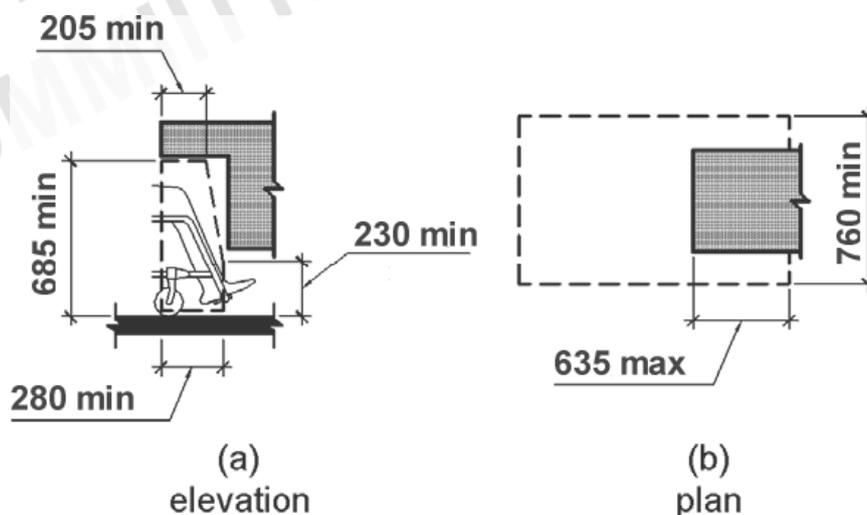
FIG. 5 KNEE CLEARANCE

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8.3.3 *Side Reach*

8.3.3.1 *Unobstructed high side reach*

Where the side reach is unobstructed or obstructed by an element that is an integral part of the stationary ICT and which is less than 255 mm, at least one of each type of operable part shall be within a high side reach which is less than or equal to 1 220 mm above the floor of the access space. This is shown in Fig. 6.

8.3.3.2 *Unobstructed low side reach*

Where the side reach is unobstructed or obstructed by an element that is an integral part of the stationary ICT and which is less than 255 mm, at least one of each type of operable part shall be within a low side reach which is greater than or equal to 380 mm above the floor of the access space. This is shown in Fig. 6.

8.3.3.3 *Obstructed side reach*

8.3.3.3.1 *Obstructed (≤ 255 mm) side reach*

Where stationary ICT has an obstruction, which is an integral part of the ICT, the height of the obstruction shall be less than 865 mm. Where the depth of the obstruction is less than or equal to 255 mm, the high side each to at least one of each type of operable part shall be no higher than 1 220 mm above the floor of the access space. This is shown in Fig. 7 (a).

8.3.3.3.2 *Obstructed (≤ 610 mm) side reach*

Where stationary ICT has an obstruction, which is an integral part of the ICT, the height of the obstruction shall be less than 865 mm. Where the depth of the obstruction is greater than 255 mm with a maximum depth of 610 mm, the high side reach to at least one of each type of operable part shall be no higher than 1170 mm above the floor of the access space. This is shown in Fig. 7 (b).

8.3.4 *Clear Floor or Ground Space*

8.3.4.1 *Change in level*

Where stationary ICT has a floor within it, then any change of floor level within it or entering it shall be ramped with a slope no steeper than 1 : 12.

Exceptions:

If the change in floor level is less than or equal to 6, 4 mm (¼ inch) the change may be vertical as shown in Fig. 8.

If the change in floor level is less than or equal to 13 mm (½ inch) the change may have a slope not steeper than 1:2 as shown in Fig. 9.

8.3.4.2 *Clear floor or ground space*

Where stationary ICT has an operating area within it, it shall provide a clear floor area that has the minimum dimensions of 900 mm by 1 200 mm from which to operate the ICT. This is shown in Fig 10.

8.3.4.3 *Approach*

8.3.4.3.1 *General*

Where stationary ICT has an access space inside it, at least one full side of the space shall be unobstructed.

8.3.4.4 *Forward approach*

Where the operating area is inside an alcove within the stationary ICT, the alcove is deeper than 610 mm, and where a forward approach is necessary, the dimension of the access space shall be a minimum of 915 mm wide. This is shown in Fig.11.

8.3.4.5 *Parallel approach*

Where the operating area is inside an alcove within the stationary ICT, the alcove is deeper than 380 mm, and where a parallel approach is possible, the dimension of the access space shall be a minimum of 1525 mm wide. This is shown in Fig. 12.
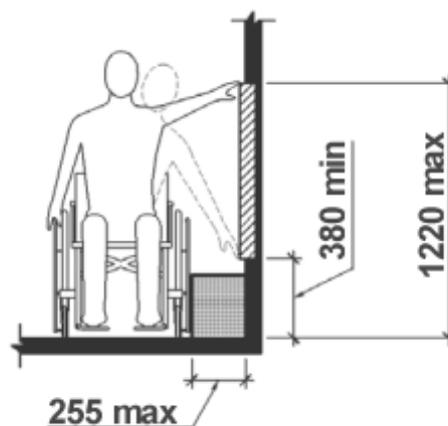
Fig. 6 Unobstructed Side Reach

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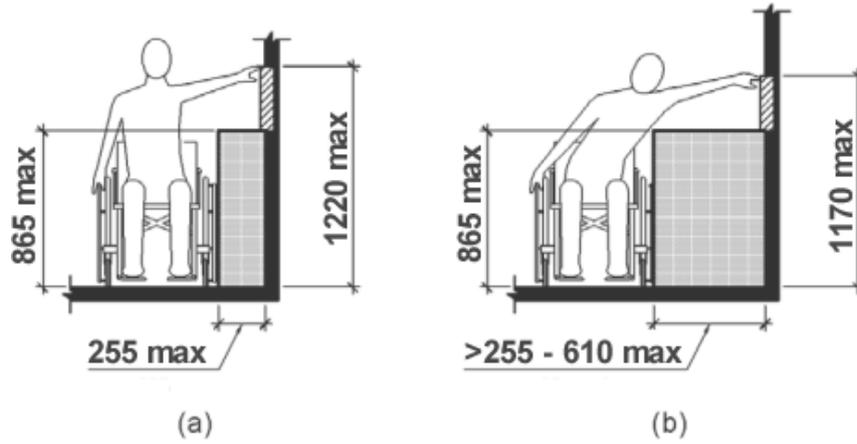
Fig. 7 Obstructed High Side Reach (EN)
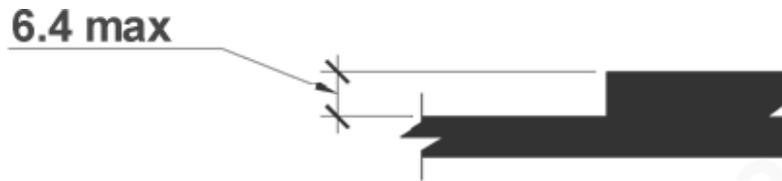
Fig. 8 Vertical Change In Level
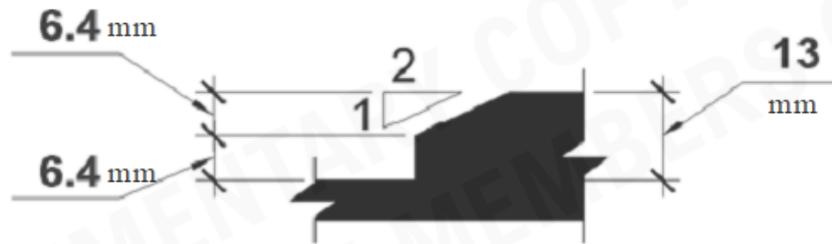
Fig.9 Bevelled Change In Level
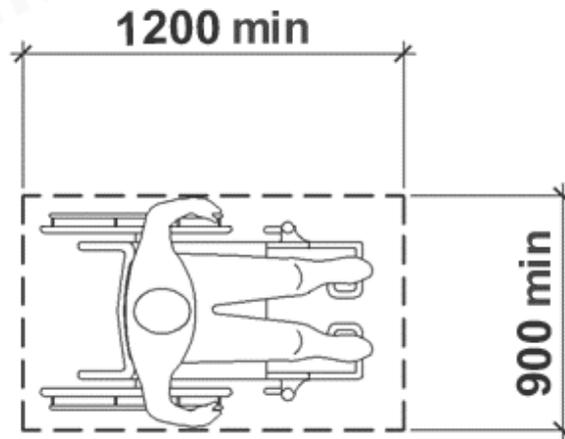
Fig. 10 Clear Floor or Ground Space

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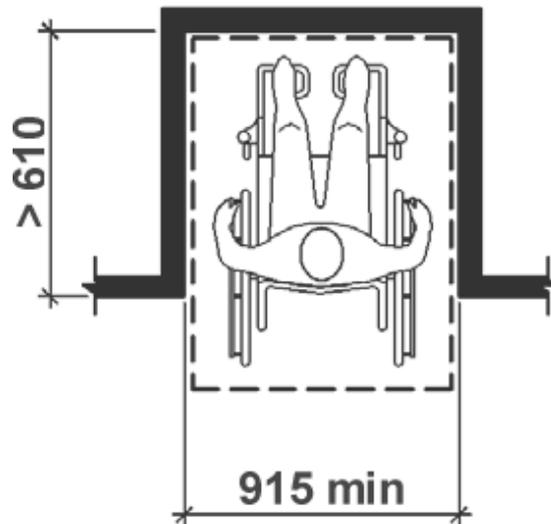
Fig. 11 Manoeuvring Clearance In An Alcove, Forward Approach
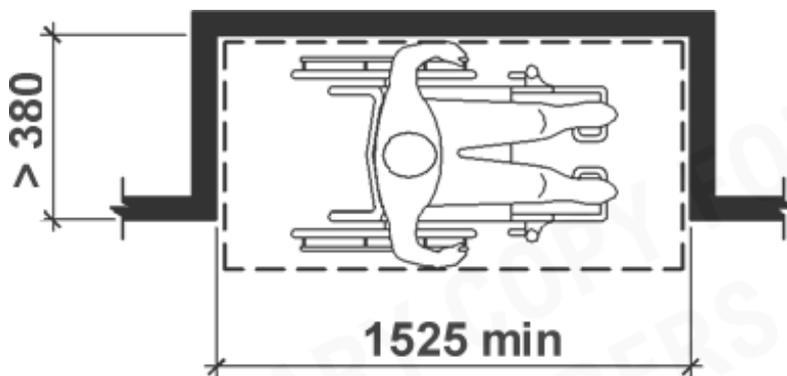
Fig. 12 Manoeuvring Clearance in an Alcove, Parallel Approach

8.3.5 *Visibility*

Where stationary ICT provides one or more display screens, at least one of each type of display screen shall be positioned such that the information on the screen is legible from a point located 1015 mm above the centre of the floor of the operating area).

> NOTE — The intent of this requirement is that the information on the screen can be read by users with normal vision and appropriate language skills, when seated in a wheelchair.

8.3.6 *Installation Instructions*

Installation instructions shall be made available for all stationary ICT. These instructions shall give guidance on how to install the ICT in a manner that takes into account applicable requirements for accessibility of the built environment as they apply to the installation of the ICT. Where there are no such requirements the instructions should require that the dimensions of the installed ICT conform to **8.3.2** to **8.3.5** of this standard.

8.4 Mechanically Operable Parts

8.4.1 *Numeric Keys*

Where provided, physical numeric keys arranged in a rectangular keypad layout shall have the number five key tactilely distinct from the other keys of the keypad.

> NOTES
>
> **1** Recommendation ITU-T E.161 describes the 12-key telephone keypad layout and provides further details of the form of tactile markers.
>
> **2** Where soft key based keyboard is used in public terminals like petrol pumps, PoS terminals and the like - as is becoming increasingly common, provision may be made for an alternate way of location and navigation within the key board space to assist the user about the keys such as through provision of audio - also ensuring privacy through headphone support while entering privacy respecting input.

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8.4.2 *Operation of Mechanical Parts*

8.4.2.1 *Means of operation of mechanical parts*

Where a control requires grasping, pinching, or twisting of the wrist to operate it, an accessible alternative means of operation that does not require these actions shall be provided.

8.4.2.2 *Force of operation of mechanical parts*

Where a control requires a force greater than 22.2 N to operate it, an accessible alternative means of operation that requires a force less than 22.2 N shall be provided.

> NOTE — ISO 21542 : 2011 Building Construction-Accessibility and Usability of the Built Environment recommends a value between 2.5 and 5 Newtons.

8.4.3 *Keys, Tickets and Fare Cards*

Where ICT provides keys, tickets or fare cards, and their orientation is important for further use, they shall have an orientation that is tactilely discernible.

> NOTE — ETSI ETS 300 767 defines suitable tactile indications for plastic cards.

8.5 Tactile Indication of Speech Mode

Where ICT is designed for shared use and speech output is available, a tactile indication of the means to initiate the speech mode of operation shall be provided.

> NOTE — The tactile indication could include Braille instructions.

9 WEB

9.0 General (Informative)

Requirements in **9** apply to web pages (as defined in **3.1**) including:

a) Conformance with W3C Web Content Accessibility Guidelines (WCAG 2.0) Level AA is equivalent to conforming with clauses **9.1.1**, **9.1.2**, **9.1.3.1** to **9.1.3.3**, **9.1.4.1** to **9.1.4.5**, **9.2.1.1**, **9.2.1.2**, **9.2.2**, **9.2.3**, **9.2.4**, **9.3**, **9.4.1.1**, **9.4.1.2** and the conformance requirements of **9.6** of of this standard.

b) Conformance with W3C Web Content Accessibility Guidelines (WCAG 2.1) Level AA is equivalent to conforming with all of **9.1** to **9.4** and the conformance requirements of **9.6** of this standard.

c) Requirements for non-web documents and non-web software are given in **10** and **11** respectively.

> NOTE
>
> **1** When evaluating web sites, they are evaluated as individual web pages. Web applications, including mobile web applications, are covered under the definition of web page which is quite broad and covers all web content types.
>
> **2** WCAG 2.0 is identical to ISO/IEC 40500:2012: "Information technology-W3C Web Content Accessibility Guidelines (WCAG) 2.0".

a) The requirements in **9.1** to **9.4** are written using the concept of satisfying success criteria (defined in **3.1**). A web page satisfies a WCAG success criterion when the success criterion does not evaluate to false when applied to the web page. This implies that if the success criterion puts conditions on a specific feature and that specific feature does not occur in the web page, then the web page satisfies the success criterion.

3 For example, a web page that does not contain pre-recorded audio content in synchronized media will automatically satisfy WCAG success criterion 1.2.2 (captions - pre-recorded) and, in consequence, will also conform to **9.1.2.2**.

a) In addition to Level AA success criteria, the web content accessibility guidelines also include success criteria for Level AAA. These are listed in **9.5** of this standard. Web authors and procurement accessibility specialists are encouraged to consider whether any of the WCAG Level AAA success criteria offer suggestions that may be applicable and relevant to their project, as well as potentially beneficial to some users.

4 The W3C states that "It is not recommended that Level AAA conformance be required as a general policy for entire sites because it is not possible to satisfy all Level AAA success criteria for some content".

5 "Void" clauses have been inserted in order to maintain alignment with the numbering of WCAG 2.1 Level A and Level AA success criteria.

6 Multilingual aspect of the web site must be considered in Indian context. The metadata related to accessibility services must also be created in at least one of the languages of the main content. If the website is multilingual, then corresponding multilingual metadata must also be provided.

9.1 Perceivable

9.1.1 *Text Alternatives*

9.1.1.1 *Non-text content*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.1.1 Non-text content.

9.1.2 *Time-based Media*

9.1.2.1 *Audio-only and video-only (pre-recorded)*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.2.1 Audio-only and Video-only (Pre-recorded).

9.1.2.2 *Captions (pre-recorded)*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.2.2 Captions (Pre-recorded).

9.1.2.3 *Audio description or media alternative (pre-recorded)*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.2.3 Audio Description or Media Alternative (Pre-recorded).

9.1.2.4 *Captions (live)*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.2.4 Captions (Live).

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9.1.2.5 *Audio description (pre-recorded)*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.2.5 Audio Description (Pre-recorded).

9.1.3 *Adaptable*

9.1.3.1 *Info and relationships*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.3.1 Info and Relationships.

9.1.3.2 *Meaningful sequence*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.3.2 Meaningful Sequence.

9.1.3.3 *Sensory characteristics*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.3.3 Sensory Characteristics.

9.1.3.4 *Orientation*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.3.4 Orientation.

9.1.3.5 *Identify input purpose*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.3.5 Identify Input Purpose.

9.1.4 *Distinguishable*

9.1.4.1 *Use of colour*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.4.1 Use of Colour.

9.1.4.2 *Audio control*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.4.2 Audio Control.

9.1.4.3 *Contrast (minimum)*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.4.3 Contrast (Minimum).

9.1.4.4 *Resize text*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.4.4 Resize text.

9.1.4.5 *Images of text*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.4.5 Images of Text.

9.1.4.6 *Void*

9.1.4.7 *Void*

9.1.4.8 *Void*

9.1.4.9 *Void*

9.1.4.10 *Reflow*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.4.10 Reflow.

9.1.4.11 *Non-text Contrast*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.4.11 Non-text Contrast.

9.1.4.12 *Text spacing*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.4.12 Text spacing.

NOTE — For Indian languages, text spacing shall be as per the font standard specified (*source* IS/ISO/IEC 14496-22 : 2019).

9.1.4.13 *Content on hover or focus*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 1.4.13 Content on Hover or Focus.

9.2 Operable

9.2.1 *Keyboard Accessible*

9.2.1.1 *Keyboard*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.1.1 Keyboard.

NOTE — In respect of Indian languages, keyboard layout may be as specified in the standard.

9.2.1.2 *No keyboard trap*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.1.2 No Keyboard Trap.

9.2.1.3 *Void*

9.2.1.4 *Character key shortcuts*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.1.4 Character Key Shortcuts.

9.2.2 *Enough Time*

9.2.2.1 *Timing adjustable*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.2.1 Timing Adjustable.

9.2.2.2 *Pause, stop, hide*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.2.2 Pause, Stop, Hide.

9.2.3 *Seizures and Physical Reactions*

9.2.3.1 *Three flashes or below threshold*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.3.1 Three Flashes or Below Threshold.

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9.2.4 *Navigable*

9.2.4.1 *Bypass blocks*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.4.1 Bypass Blocks.

9.2.4.2 *Page titled*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.4.2 Page Titled.

9.2.4.3 *Focus order*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.4.3 Focus Order.

9.2.4.4 *Link purpose (in context)*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.4.4 Link Purpose (In Context).

9.2.4.5 *Multiple ways*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.4.5 Multiple Ways.

9.2.4.6 *Headings and labels*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.4.6 Headings and Labels.

9.2.4.7 *Focus visible*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.4.7 Focus Visible.

9.2.5 *Input Modalities*

9.2.5.1 *Pointer gestures*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.5.1 Pointer Gestures.

9.2.5.2 *Pointer cancellation*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.5.2 Pointer Cancellation.

9.2.5.3 *Label in name*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.5.3 Label in Name.

9.2.5.4 *Motion actuation*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 2.5.4 Motion Actuation.

9.3 Understandable

9.3.1 *Readable*

9.3.1.1 *Language of page*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 3.1.1 Language of Page.

9.3.1.2 *Language of parts*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 3.1.2 Language of Parts.

9.3.2 *Predictable*

9.3.2.1 *On focus*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 3.2.1 On Focus.

9.3.2.2 *On input*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 3.2.2 On Input.

9.3.2.3 *Consistent navigation*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 3.2.3 Consistent Navigation.

9.3.2.4 *Consistent identification*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 3.2.4 Consistent Identification.

9.3.3 *Input assistance*

9.3.3.1 *Error identification*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 3.3.1 Error Identification.

9.3.3.2 *Labels or instructions*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 3.3.2 Labels or Instructions.

9.3.3.3 *Error suggestion*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 3.3.3 Error Suggestion.

9.3.3.4 *Error prevention (legal, financial, data)*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 3.3.4 Error Prevention (Legal, Financial, Data).

9.4 Robust

9.4.1 *Compatible*

9.4.1.1 *Parsing*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 4.1.1 Parsing.

9.4.1.2 *Name, role, value*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 4.1.2 Name, Role, Value.

9.4.1.3 *Status messages*

Where ICT is a web page, it shall satisfy WCAG 2.1 Success Criterion 4.1.3 Status Messages.

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9.5 WCAG 2.1 AAA Success Criteria

In addition to the Level AA success criteria, included in **9.1** to **9.4**, the web content accessibility guidelines include success criteria for Level AAA. These are listed in Table 2. Web authors and procurement accessibility specialists are encouraged to consider the WCAG 2.1 Level AAA success criteria that, when it is possible to apply them, may provide access beyond that required in this Standard.

> NOTE — The W3C states that "It is not recommended that Level AAA conformance be required as a general policy for entire sites because it is not possible to satisfy all Level AAA Success Criteria for some content".

9.6 WCAG Conformance Requirements

Where ICT is a web page, it shall satisfy all the following five WCAG 2.1 conformance requirements at Level AA:

a) Conformance level;

b) Full pages;

c) Complete processes;

d) Only accessibility-supported ways of using technologies; and

e) Non-interference.

Table 2 WCAG 2.1 Level AAA Success Criteria

(*Clause* 9.5)

Sl No.	Guideline	Success Criterion Number	Success Criteria Name
(1)	(2)	(3)	(4)
i)	Time-based media	1.2.6	Sign Language (Pre-recorded)
ii)	Time-based media	1.2.7	Extended Audio Description (Pre-recorded)
iii)	Time-based media	1.2.8	Media Alternative (Pre-recorded)
iv)	Time-based media	1.2.9	Audio-only (Live)
v)	Adaptable	1.3.6	Identify Purpose
vi)	Distinguishable	1.4.6	Contrast (Enhanced)
vii)	Distinguishable	1.4.7	Low or No Background Audio
viii)	Distinguishable	1.4.8	Visual Presentation
ix)	Distinguishable	1.4.9	Images of Text (No Exception)
x)	Keyboard Accessible	2.1.3	Keyboard (No Exception)
xi)	Enough time	2.2.3	No Timing
xii)	Enough time	2.2.4	Interruptions
xiii)	Enough time	2.2.5	Re-authenticating
xiv)	Enough time	2.2.6	Timeouts
xv)	Seizures and physical reactions	2.3.2	Three Flashes
xvi)	Seizures and physical reactions	2.3.3	Animation form Interactions
xvii)	Navigable	2.4.8	Location
xviii)	Navigable	2.4.9	Link Purpose (Link Only)
xix)	Navigable	2.4.10	Section Headings
xx)	Input modalities	2.5.5	Target Size
xxi)	Input modalities	2.5.6	Concurrent Input Mechanisms
xxii)	Readable	3.1.3	Unusual Words
xxiii)	Readable	3.1.4	Abbreviations
xxiv)	Readable	3.1.5	Reading Level
xxv)	Readable	3.1.6	Pronunciation
xxvi)	Predictable	3.2.5	Change on Request
xxvii)	Input assistance	3.3.5	Help
xxviii)	Input assistance	3.3.6	Error Prevention (All)

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NOTES

1 A web page that meets all requirements of **9.1** to **9.4**, or where a Level AA conforming alternate version (as defined in WCAG 2.1) is provided, will meet conformance requirement 1.

2 According to W3C: "WCAG 2.1 extends web content accessibility guidelines 2.0, which was published as a W3C Recommendation December 2008. Content that conforms to WCAG 2.1 also conforms to WCAG 2.0, and therefore to policies that reference WCAG 2.0".

3 Conformance requirement 5 states that all content on the page, including content that is not otherwise relied upon to meet conformance, meets clauses **9.1.4.2**, **9.2.1.2**, **9.2.2.2** and **9.2.3.1**.

10 NON-WEB DOCUMENTS

10.0 General (Informative)

Requirements in **10** apply to:

a) documents that are not web pages;

b) documents that are not embedded in web pages; and

c) documents that are provided with web pages but are neither embedded nor rendered together with the web page from which they are provided (that is, the present clause applies to downloadable documents).

Clause **9** provides requirements for documents that are in web pages or that are embedded in web pages and that are used in the rendering or that are intended to be rendered together with the web page in which they are embedded.

NOTES

1 Some examples of documents are letters, spreadsheets, emails, books, pictures, presentations, and movies that have an associated user agent, such as a document reader, editor or media player.

2 A single document may be composed of multiple files such as the video content and closed caption text.

This fact is not usually apparent to the end-user consuming the document/content.

3 Documents require a user agent in order for the content to be presented to users. The requirements for user agents can be found in **11**.

4 The requirements for content that is part of software, can be found in **11**.

5 The success criteria set out in **10** are intended to harmonize with the Working Group Note produced by the W3C's WCAG2ICT Task Force.

6 "Void" clauses have been inserted in order to maintain alignment of the numbering in **9**, **10** and **11**.

7 Requirements in **10** also apply to documents that are protected using mechanisms, such as digital signatures, encryption, password protection, and watermarks when they are presented to the user.

8 It is best practice to provide meta data on the accessibility of the document within or separate to the document using web schemas/accessibility 2.0.

9 Documents in Indian languages shall be supported for accessibility (*see* **5.10**).

10.1 Perceivable

10.1.1 *Text Alternatives*

10.1.1.1 *Non-text content*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.1.1 Non-text Content.

NOTE — CAPTCHAs do not currently appear outside of the Web. However, if they do appear, this guidance is accurate.

10.1.2 *Time-based Media*

10.1.2.1 *Audio-only and video-only (pre-recorded)*

Where ICT is a non-web document, it shall satisfy WCAG 2.1 Success Criterion 1.2.1 Audio-only and Video-only (Pre-recorded).

NOTE — The alternative can be provided directly in the document-or provided in an alternate version that meets the success criterion.

10.1.2.2 *Captions (pre-recorded)*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.2.2 Captions (Pre-recorded).

NOTE — The WCAG 2.1 definition of "captions" notes that "in some countries, captions are called subtitles". They are also sometimes referred to as "subtitles for the hearing impaired". Per the definition in WCAG 2.1, to meet this success criterion, whether called captions or subtitles, they would have to provide "synchronized visual and/or text alternative for both speech and non-speech audio information needed to understand the media content" where non-speech information includes "sound effects, music, laughter, speaker identification and location".

10.1.2.3 *Audio description or media alternative (pre-recorded)*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.2.3 Audio Description or Media Alternative (Pre-recorded).

NOTES

1 The WCAG 2.1 definition of "audio description" says that "audio description" is "Also called 'video description' and 'descriptive narration'".

2 Secondary or alternate audio tracks are commonly used for this purpose.

10.1.2.4 *Captions (live)*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.2.4 Captions (Live).

NOTE — The WCAG 2.1 definition of "captions" notes that "in some countries, captions are called subtitles". They are also sometimes referred to as "subtitles for the hearing impaired". Per the definition in WCAG 2.1, to meet this success criterion, whether called captions or subtitles, they would have to provide "synchronized visual and/or text alternative for both speech and non-speech audio information needed to understand the media content" where non-speech information includes "sound effects, music, laughter, speaker identification and location".

10.1.2.5 *Audio description (pre-recorded)*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.2.5 Audio Description (Pre-recorded).

> NOTES
>
> **1** The WCAG 2.1 definition of "audio description" says that audio description is "Also called 'video description' and 'descriptive narration'".
>
> **2** Secondary or alternate audio tracks are commonly used for this purpose.

10.1.3 *Adaptable*

10.1.3.1 *Info and relationships*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.3.1 Info and Relationships.

> NOTE — Where documents contain non-standard structure types (roles), it is best practice to map them to a standard structure type as a fall-back solution for the reader.

10.1.3.2 *Meaningful sequence*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.3.2 Meaningful Sequence.

10.1.3.3 *Sensory characteristics*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.3.3 Sensory Characteristics.

10.1.3.4 *Orientation*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.3.4 Orientation.

10.1.3.5 *Identify input purpose*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.3.5 Identify Input Purpose.

10.1.4 *Distinguishable*

10.1.4.1 *Use of colour*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.4.1 Use of Colour.

10.1.4.2 *Audio control*

Where ICT is a non-web document, it shall satisfy the document success criterion as given below.

Document success criterion for Audio control:

If any audio in a document plays automatically for more than 3 seconds, either a mechanism is available to pause or stop the audio, or a mechanism is available to control audio volume independently from the overall system volume level.

> NOTES
>
> **1** Since any part of a document that does not meet this success criterion can interfere with a user's ability to use the whole document, all content in the document (whether or not it is used to meet other success criteria) shall meet this success criterion.
>
> **2** This success criterion is identical to the WCAG 2.1 Success Criterion 1.4.2 Audio Control, replacing "on a Web page" with "in a document", "any content" with "any part of a document", "whole page" with "whole document", "on the Web page" with "in the document", removing "See Conformance Requirement 5: Non-Interference" and adding note 1.

10.1.4.3 *Contrast (minimum)*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.4.3 Contrast (Minimum).

10.1.4.4 *Resize text*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.4.4 Resize Text.

> NOTES
>
> **1** Content for which there are software players, viewers or editors with a 200 percent zoom feature would automatically meet this success criterion when used with such players, unless the content will not work with zoom.
>
> **2** This success criterion is about the ability to allow users to enlarge the text on screen at least up to 200 percent without needing to use assistive technologies. This means that the application provides some means for enlarging the text 200 percent (zoom or otherwise) without loss of content or functionality or that the application works with the platform features that meet this requirement.
>
> **3** It is best practice to use only fonts that allow for scaling without loss of quality (for example, pixelized presentation). This applies in particular to embedded fonts.

10.1.4.5 *Images of text*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 1.4.5 Images of Text.

10.1.4.6 *Void*

10.1.4.7 *Void*

10.1.4.8 *Void*

10.1.4.9 *Void*

10.1.4.10 *Reflow*

Where ICT is a non-web document, it shall satisfy the document success criterion as given below.

> NOTE — Information originally contained in some tables where the table format was not informational in nature have been converted into text for better accessibility through screen readers.

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Document success criterion for reflow

Content can be presented without loss of information or functionality, and without requiring scrolling in two dimensions for:

a) Vertical scrolling content at a width equivalent to 320 CSS pixels; and

b) Horizontal scrolling content at a height equivalent to 256 CSS pixels.

Except for parts of the content which require two-dimensional layout for usage or meaning.

NOTES

1 320 CSS pixels is equivalent to a starting viewport width of 1 280 CSS pixels wide at 400 percent zoom. For documents which are designed to scroll horizontally (for example, with vertical text), the 256 CSS pixels is equivalent to a starting viewport height of 1 024 pixels at 400 percent zoom.

2 Examples of content which require two-dimensional layout are images, maps, diagrams, video, games, presentations, data tables, and interfaces where it is necessary to keep toolbars in view while manipulating content.

3 This success criterion is identical to the WCAG 2.1 success criterion 1.4.10 Reflow replacing the original WCAG 2.1 notes with notes 1 and 2, above.

10.1.4.11 *Non-text contrast*

Where ICT is a non-web document, it shall satisfy WCAG 2.1 Success Criterion 1.4.11 Non-text Contrast.

10.1.4.12 *Text spacing*

Where ICT is a non-web document that does not have a fixed size content layout area that is essential to the information being conveyed, it shall satisfy WCAG 2.1 Success Criterion 1.4.12 Text spacing.

10.1.4.13 *Content on hover or focus*

Where ICT is a non-web document, it shall satisfy WCAG 2.1 Success Criterion 1.4.13 Content on Hover or Focus.

10.2 Operable

10.2.1 *Keyboard Accessible*

10.2.1.1 *Keyboard*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 2.1.1 Keyboard.

10.2.1.2 *No keyboard traps*

Where ICT is a non-web document, it shall satisfy the document success criterion as given below.

Document success criterion for No keyboard trap:

If keyboard focus can be moved to a component of the document using a keyboard interface, then focus can be moved away from that component using only a keyboard interface, and, if it requires more than unmodified arrow or tab keys or other standard exit methods, the user is advised of the method for moving focus away.

NOTES

1 Since any part of a document that does not meet this success criterion can interfere with a user's ability to use the whole document, it is necessary for all content in the document (whether or not it is used to meet other success criteria) to meet this success criterion.

2 Standard exit methods may vary by platform. For example, on many desktop platforms, the Escape key is a standard method for exiting.

3 This success criterion is identical to the WCAG 2.1 Success Criterion 2.1.2 No Keyboard Trap replacing "page" and "Web page" with "document", removing "See Conformance Requirement 5: Non-Interference" and with the addition of note 2 above and with note 1 above re-drafted to avoid the use of the word "must".

10.2.1.3 *Void*

10.2.1.4 *Character key shortcuts*

Where ICT is a non-web document, it shall satisfy WCAG 2.1 Success Criterion 2.1.4 Character Key Shortcuts.

10.2.2 *Enough Time*

10.2.2.1 *Timing adjustable*

Where ICT is a non-web document, it shall satisfy the document success criterion as given below.

Document success criterion for Timing adjustable:

For each time limit that is set by the document, at least one of the following is true:

a) *Turn off* — The user is allowed to turn off the time limit before encountering it;

b) *Adjust* — The user is allowed to adjust the time limit before encountering it over a wide range that is at least ten times the length of the default setting;

c) *Extend* — The user is warned before time expires and given at least 20 s to extend the time limit with a simple action (for example, "press the space bar"), and the user is allowed to extend the time limit at least ten times;

d) *Real-time Exception* — The time limit is a required part of a real-time event (for example, an auction), and no alternative to the time limit is possible;

e) *Essential Exception* — The time limit is essential and extending it would invalidate the activity; or

f) *20 Hour Exception* — The time limit is longer than 20 h.

NOTES

1 This success criterion helps ensure that users can complete tasks without unexpected changes in content or context that are a result of a time limit. This success criterion should be considered in conjunction with WCAG 2.1 Success Criterion 3.2.1, which puts limits on changes of content or context as a result of user action.

2 This success criterion is identical to the WCAG 2.1 Success Criterion 2.2.1 Timing Adjustable replacing "the content" with "documents" and with the words "WCAG 2.1" added before the word "Success Criterion" in note 1 above.

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10.2.2.2 *Pause, stop, hide*

Where ICT is a non-web document, it shall satisfy the document success criterion as given below.

Document success criterion: Pause, stop, hide

For moving, blinking, scrolling, or auto-updating information, all of the following are true:

a) *Moving, Blinking, Scrolling* — For any moving, blinking or scrolling information that:

1) starts automatically,

2) lasts more than five seconds, and

3) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it unless the movement, blinking, or scrolling is part of an activity where it is essential; and

b) *Auto-updating* — For any auto-updating information that:

1) starts automatically; and

2) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it or to control the frequency of the update unless the auto-updating is part of an activity where it is essential.

NOTES

1 For requirements related to flickering or flashing content, refer to WCAG 2.1 Guideline 2.3.

2 Since any part of a document that does not meet this success criterion can interfere with a user's ability to use the whole document, it is necessary for all content in the document (whether it is used to meet other success criteria or not) to meet this success criterion.

3 Content that is updated periodically by software or that is streamed to the user agent is not required to preserve or present information that is generated or received between the initiation of the pause and resuming presentation, as this may not be technically possible, and in many situations could be misleading to do so.

4 An animation that occurs as part of a preload phase or similar situation can be considered essential if interaction cannot occur during that phase for all users and if not indicating progress could confuse users or cause them to think that content was frozen or broken.

5 This success criterion is identical to the WCAG 2.1 Success Criterion 2.2.2 Pause, Stop, Hide replacing "page" and "Web page" with "document", removing "See Conformance Requirement 5: Non-Interference" in note 2 of the success criterion, with the words "WCAG 2.1" added before the word "Guideline" in note 1 above and with note 2 above re-drafted to avoid the use of the word "must".

10.2.3 *Seizures and Physical Reactions*

10.2.3.1 *Three flashes or below threshold*

Where ICT is a non-web document, it shall satisfy the document success criterion as given below.

Document success criterion for three flashes or below threshold:

Documents do not contain anything that flashes more than three times in any one second period, or the flash is below the general flash and red flash thresholds.

NOTES

1 Since any part of a document that does not meet this success criterion can interfere with a user's ability to use the whole document, it is necessary for all content in the document (whether it is used to meet other success criteria or not) to meet this success criterion.

2 This success criterion is identical to the WCAG 2.1 Success Criterion 2.3.1 Three Flashes or Below Threshold replacing "Web pages" with "documents", "the whole page" with "the whole document", "the Web page" with "the document" and removing "See Conformance Requirement 5: Non-Interference" and with note 1 above re-drafted to avoid the use of the word "must".

10.2.4 *Navigable*

10.2.4.1 *Void*

NOTES

1 The related web page requirement "Bypass blocks" does not apply to single documents, but to a specific definition of "sets of documents" that are rare.

2 Although not a requirement, the ability to bypass blocks of content that are repeated within documents is generally considered best practice and addresses user needs.

10.2.4.2 *Document titled*

Where ICT is a non-web document, it shall satisfy the document success criterion as given below.

Document success criterion for Document titled:

Documents have titles that describe topic or purpose.

NOTES

1 The name of a document (for example, document, media file) is a sufficient title if it describes the topic or purpose.

2 This success criterion is identical to the WCAG 2.1 Success Criterion 2.4.2 Page Titled replacing "Web pages" with "documents" and with the addition of note 1 above.

10.2.4.3 *Focus Order*

Where ICT is a non-web document, it shall satisfy the document success criterion as given below.

Document success criterion for focus order

If a document can be navigated sequentially and the navigation sequences affect meaning or operation, focusable components receive focus in an order that preserves meaning and operability.

NOTE — This success criterion is identical to the WCAG 2.1 Success Criterion 2.4.3 Focus Order replacing "Web page" with "document".

10.2.4.4 *Link purpose (in context)*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 2.4.4 Link Purpose (In Context).

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10.2.4.5 *Void*

> NOTE — The related web page requirement "Multiple ways" does not apply to single documents, but to a specific definition of "sets of documents" that are rare.

10.2.4.6 *Headings and labels*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 2.4.6 Headings and Labels.

10.2.4.7 *Focus visible*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 2.4.7 Focus Visible.

10.2.5 *Input Modalities*

10.2.5.1 *Pointer gestures*

Where ICT is a non-web document, it shall satisfy the success criterion as given below.

Document success criterion for Pointer gestures:

All functionality that uses multipoint or path-based gestures for operation can be operated with a single pointer without a path-based gesture, unless a multipoint or path-based gesture is essential.

> NOTES
>
> 1 This requirement applies to documents that interpret pointer actions (that is, this does not apply to actions that are required to operate the user agent or assistive technology).
>
> 2 This success criterion is identical to the WCAG 2.1 Success Criterion 2.5.1 Pointer Gestures replacing the original WCAG 2.1 note with Note 1 above.

10.2.5.2 *Pointer cancellation*

Where ICT is a non-web document, it shall satisfy the success criterion as given below.

Document success criterion for Pointer cancellation:

For functionality that can be operated using a single pointer, at least one of the following is true:

a) *No Down-Event* — The down-event of the pointer is not used to execute any part of the function;

b) *Abort or Undo* — Completion of the function is on the up-event, and a mechanism is available to abort the function before completion or to undo the function after completion;

c) *Up Reversal* — The up-event reverses any outcome of the preceding down-event; and

d) *Essential* — Completing the function on the down-event is essential.

> NOTES
>
> 1 Functions that emulate a keyboard or numeric keypad key press are considered essential.
>
> 2 This requirement applies to a document that interprets pointer actions (that is, this does not apply to actions that are required to operate the user agent or assistive technology).
>
> 3 This success criterion is identical to the WCAG 2.1 Success Criterion 2.5.2 Pointer Cancellation replacing the original WCAG 2.1 note with notes 1 and 2 above.

10.2.5.3 *Label in name*

Where ICT is a non-web document, it shall satisfy WCAG 2.1 Success Criterion 2.5.3 Label in Name.

10.2.5.4 *Motion actuation*

Where ICT is a non-web document, it shall satisfy WCAG 2.1 Success Criterion 2.5.4 Motion Actuation.

10.3 Understandable

10.3.1 *Readable*

10.3.1.1 *Language of document*

Where ICT is a non-web document, it shall satisfy the Document success criterion as given below.

Document success criterion for Language of document:

The default human language of each document can be programmatically determined.

> NOTE — This success criterion is identical to the WCAG 2.1 Success Criterion 3.1.1 Language of Page replacing "web page" with "document".

10.3.1.2 *Language of parts*

Where ICT is a non-web document, it shall satisfy the document success criterion as given below.

Document success criterion for language of parts:

The human language of each passage or phrase in the document can be programmatically determined except for proper names, technical terms, words of indeterminate language, and words or phrases that have become part of the vernacular of the immediately surrounding text.

> NOTES
>
> 1 There are some document technologies where there is no assistive technology supported method for marking the language for the different passages or phrases in the document, and it would not be possible to meet this success criterion with those technologies.
>
> 2 Inheritance is one common method. For example, a document provides the language that it is using and it can be assumed that all of the text or user interface elements within that document will be using the same language unless it is indicated.
>
> 3 This success criterion is identical to the WCAG 2.1 Success Criterion 3.1.2 Language of Parts replacing "content" with "document" and with the addition of notes 1 and 2 above.

10.3.2 *Predictable*

10.3.2.1 *Onfocus*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 3.2.1 On Focus.

> NOTE — Some compound documents and their user agents are designed to provide significantly different viewing and editing functionality depending upon what portion of the compound document is being interacted with (for example, a presentation that contains an embedded spreadsheet, where the menus and toolbars of the user agent change depending upon whether the user is interacting with the presentation content, or the embedded spreadsheet content). If the user uses

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a mechanism other than putting focus on that portion of the compound document with which they mean to interact (for example, by a menu choice or special keyboard gesture), any resulting change of context would not be subject to this success criterion because it was not caused by a change of focus.

10.3.2.2 *On input*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 3.2.2 On Input.

10.3.2.3 *Void*

NOTE — The related web page requirement "Consistent navigation" does not apply to single documents, but to a specific definition of "sets of documents" that are rare.

10.3.2.4 *Void*

NOTE — The related web page requirement "Consistent identification" does not apply to single documents, but to a specific definition of "sets of documents" that are rare.

10.3.3 *Input Assistance*

10.3.3.1 *Error identification*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 3.3.1 Error Identification.

10.3.3.2 *Labels or instructions*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 3.3.2 Labels or Instructions.

10.3.3.3 *Error suggestion*

Where ICT is a non-web document, it shall satisfy the WCAG 2.1 Success Criterion 3.3.3 Error Suggestion.

10.3.3.4 *Error prevention (legal, financial, data)*

Where ICT is a non-web document, it shall satisfy the document success criterion as given below.

Document success criterion for error prevention (legal, financial, data):

For documents that cause legal commitments or financial transactions for the user to occur, that modify or delete user-controllable data in data storage systems, or that submit user test responses, at least one of the following is true:

a) *Reversible* — Submissions are reversible.

b) *Checked* — Data entered by the user is checked for input errors and the user is provided an opportunity to correct them.

c) *Confirmed* — A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission.

NOTE — This success criterion is identical to the WCAG 2.1 Success Criterion 3.3.4 Error Prevention (Legal, Financial, Data) replacing "web pages" with "documents".

10.4 Robust

10.4.1 *Compatible*

10.4.1.1 *Parsing*

Where ICT is a non-web document, it shall satisfy the document success criterion as given below.

Document success criterion for parsing:

For documents that use markup languages, in such a way that the markup is separately exposed and available to assistive technologies and accessibility features of software or to a user-selectable user agent, elements have complete start and end tags, elements are nested according to their specifications, elements do not contain duplicate attributes, and any IDs are unique, except where the specifications allow these features.

NOTES

1 Start and end tags that are missing a critical character in their formation, such as a closing angle bracket or a mismatched attribute value quotation mark are not complete.

2 Markup is not always available to assistive technology or to user selectable user agents such as browsers. In such cases, conformance to this [requirement] would have no impact on accessibility as it can for web content where it is exposed.

3 Examples of markup that is separately exposed and available to assistive technologies and to user agents include but are not limited to: documents encoded in HTML, ODF, and OOXML. In these examples, the markup can be parsed entirely in two ways: (a) by assistive technologies which may directly open the document, (b) by assistive technologies using DOM APIs of user agents for these document formats.

4 This success criterion is identical to the WCAG 2.1 Success Criterion 4.1.1 Parsing replacing "In content implemented using markup languages" with "For documents that use markup languages, in such a way that the markup is separately exposed and available to assistive technologies and accessibility features of software or to a user-selectable user agent" with the addition of Notes 2 and 3 above.

10.4.1.2 *Name, role, value*

Where ICT is a non-web document, it shall satisfy the document success criterion as given below.

Document success criterion for name, role, value:

For all user interface components (including but not limited to: form elements, links and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to user agents, including assistive technologies.

NOTES

1 This success criterion is primarily for software developers who develop or use custom user interface components. Standard user interface components on most accessibility-supported platforms already meet this success criterion when used according to specification.

2 For document formats that support interoperability with assistive technology, standard user interface components often meet this success criterion when used according to the general design and accessibility guidance for the document format.

3 This success criterion is identical to the WCAG 2.1 success criterion 4.1.2 name, role, value replacing the original

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WCAG 2.1 note with: "This success criterion is primarily for software developers who develop or use custom user interface components. For example, standard user interface components on most accessibility-supported platforms already meet this success criterion when used according to specification." and with the addition of Note 2 above.

10.4.1.3 *Status messages*

Where ICT is a non-web document, it shall satisfy WCAG 2.1 Success Criterion 4.1.3 Status Messages.

10.5 Caption Positioning

Where ICT is a non-web document that contains synchronized media with captions, the captions should not obscure relevant information in the synchronized media.

10.6 Audio Description Timing

Where ICT is a non-web document that contains synchronized media with audio description, the audio description should not interfere with relevant audio information in the synchronized media.

11 SOFTWARE

11.0 General (Informative)

This clause provides requirements for:

a) platform software;

b) software that provides a user interface including content that is in the software;

c) authoring tools;

d) software that operates as assistive technology; and

e) mobile applications.

NOTES

1 User agents are examples of software that provide a user interface. They retrieve, render and facilitate end user interaction with authored content. User agents play a necessary role in the accessibility of authored content rendered in the user interface. UAAG 2.0 provides additional advice for those who are creating user agents and want to increase functionality when rendering authored content in an accessible way.

2 The requirements for web content, including software that is web content, can be found in **9**.

3 The requirements for documents that may be presented by user agents, can be found in **10**.

4 Although the accessibility of command line interfaces is not dealt with in this standard, accessibility may be achieved by context specific requirements, some of which may be found in **5** or **11**.

Requirements in clauses **11.1** to **11.5** apply to software:

f) that is not a web page; and

g) not embedded in web pages nor used in the rendering or functioning of the page.

Clause 9 provides requirements for software that is in web pages or that is embedded in web pages and that is used in the rendering or that is intended to be rendered together with the web page in which it is embedded.

Some requirements in **11.1** to **11.5** have different versions for open or closed functionality. In those cases, the corresponding clause will be divided into two sub-clauses.

The success criteria set out in **11.1** to **11.5** are intended to harmonize with the W3C Working Group Note produced by the W3C's WCAG2ICT Task Force.

5 Software that provides a user interface includes its own content. Some examples of content in software include: the controls and text displayed in a menu bar of a graphical user interface application, images that appear in a toolbar, prompts spoken in an auditory user interface, other user interaction controls, and other text, graphics or material that is not loaded from outside the software.

6 "Void" clauses have been inserted in order to maintain alignment of the numbering in clauses **9, 10** and **11**.

7 Indian language support may be provided for software developers and their development of user interfaces in Indian languages. Relevant clause of Section may also be referred to for details.

11.1 Perceivable

11.1.1 *Text Alternatives*

11.1.1.1 *Non-text content*

11.1.1.1.1 *Non-text content (open functionality)*

Where ICT is non-web software that provides a user interface and that supports access to assistive technologies for screen reading, it shall satisfy WCAG 2.1 Success Criterion 1.1.1 Non-text Content.

NOTE — CAPTCHAs do not currently appear outside of the Web. However, if they do appear, this guidance is accurate.

11.1.1.1.2 *Non-text content (closed functionality)*

Where ICT is non-web software that provides a user interface, which is closed to assistive technologies for screen reading, it shall meet requirement **5.1.3.6** (speech output for non-text content).

11.1.2 *Time-based Media*

11.1.2.1 *Audio-only and video-only (pre-recorded)*

11.1.2.1.1 *Audio-only and video-only (pre-recorded-open functionality)*

Where ICT is non-web software that provides a user interface and that supports access to assistive technologies for screen reading and where pre-recorded auditory information is not needed to enable the use of closed functions of ICT, it shall satisfy the WCAG 2.1 Success Criterion 1.2.1 Audio-only and Video-only (Pre-recorded).

NOTE — The alternative can be provided directly in the software-or provided in an alternate version that meets the success criterion.

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11.1.2.1.2 *Audio-only and video-only (pre-recorded-closed functionality)*

11.1.2.1.2.1 *Pre-recorded audio-only (closed functionality)*

Where ICT is non-web software that provides a user interface, which is closed to assistive technologies for screen reading and where pre-recorded auditory information is needed to enable the use of closed functions of ICT, the functionality of software that provides a user interface shall meet requirement **5.1.5** (visual output for auditory information).

11.1.2.1.2.2 *Pre-recorded video-only (closed functionality)*

Where ICT is non-web software that provides a user interface, which is closed to assistive technologies for screen reading, it shall meet requirement **5.1.3.7** (speech output for video information).

11.1.2.2 *Captions (pre-recorded)*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 1.2.2 Captions (Pre-recorded).

> NOTE — The WCAG 2.1 definition of "captions" notes that "in some countries, captions are called subtitles". They are also sometimes referred to as "subtitles for the hearing impaired". Per the definition in WCAG 2.1, to meet this success criterion, whether called captions or subtitles, they would have to provide "synchronized visual and / or text alternative for both speech and non-speech audio information needed to understand the media content" where non-speech information includes "sound effects, music, laughter, speaker identification and location".

11.1.2.3 *Audio description or media alternative (pre-recorded)*

11.1.2.3.1 *Audio description or media alternative (pre-recorded - open functionality)*

Where ICT is non-web software that provides a user interface and that supports access to assistive technologies for screen reading, it shall satisfy the WCAG 2.1 Success Criterion 1.2.3 Audio Description or Media Alternative (Pre-recorded).

> NOTES
>
> **1** The WCAG 2.1 definition of "audio description" says that "audio description" is "also called 'video description' and 'descriptive narration'".
>
> **2** Secondary or alternate audio tracks are commonly used for this purpose.
>
> **3** If an Indian language has been chosen by the developer or is needed for fulfilling a user requirement of language, the alternative audio may also be in the same language.

11.1.2.3.2 *Audio description or media alternative (pre-recorded - closed functionality)*

Where ICT is non-web software that provides a user interface which is closed to assistive technologies for screen reading, it shall meet requirement **5.1.3.7** (speech output for video information).

11.1.2.4 *Captions (live)*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 1.2.4 Captions (Live).

> NOTE — The WCAG 2.1 definition of "captions" notes that "in some countries, captions are called subtitles". They are also sometimes referred to as "subtitles for the hearing impaired". Per the definition in WCAG 2.1, to meet this success criterion, whether called captions or subtitles, they would have to provide "synchronized visual and/or text alternative for both speech and non-speech audio information needed to understand the media content" where non-speech information includes "sound effects, music, laughter, speaker identification and location".

11.1.2.5 *Audio description (pre-recorded)*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 1.2.5 Audio Description (Pre-recorded).

> NOTES
>
> **1** The WCAG 2.1 definition of "audio description" says that audio description is "Also called 'video description' and 'descriptive narration'".
>
> **2** Secondary or alternate audio tracks are commonly used for this purpose.
>
> **3** Where a user interface has to display an Indian language, the audio description may also be in the same language.

11.1.3 *Adaptable*

11.1.3.1 *Info and relationships*

11.1.3.1.1 *Info and relationships (open functionality)*

Where ICT is non-web software that provides a user interface and that supports access to assistive technologies for screen reading, it shall satisfy the WCAG 2.1 Success Criterion 1.3.1 Info and Relationships.

> NOTE — In software, programmatic determinability is best achieved through the use of accessibility services provided by platform software to enable interoperability between software and assistive technologies and accessibility features of software (*see* also **11.5** interoperability with assistive technology).

11.1.3.1.2 *Info and relationships (closed functionality)*

Where ICT is non-web software that provides a user interface, which is closed to assistive technologies for screen reading and where information is displayed on the screen, the ICT should provide auditory information that allows the user to correlate the audio with the information displayed on the screen.

> NOTES
>
> **1** Many people who are legally blind still have visual ability, and use aspects of the visual display even if it cannot be fully comprehended. An audio alternative that is both complete and complementary includes all visual information such as focus or highlighting, so that the audio can be correlated with information that is visible on the screen at any point in time.
>
> **2** Examples of auditory information that allows the user to correlate the audio with the information displayed on the screen include structure and relationships conveyed through presentation.

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11.1.3.2 *Meaningful sequence*

11.1.3.2.1 *Meaningful sequence (open functionality)*

Where ICT is non-web software that provides a user interface and that supports access to assistive technologies for screen reading, it shall satisfy the WCAG 2.1 Success Criterion 1.3.2 Meaningful Sequence.

11.1.3.2.2 *Meaningful sequence (closed functionality)*

Where ICT is non-web software that provides a user interface, which is closed to assistive technologies for screen reading and where information is displayed on the screen, the ICT should provide auditory information that allows the user to correlate the audio with the information displayed on the screen.

> NOTES
>
> **1** Many people who are legally blind still have visual ability, and use aspects of the visual display even if it cannot be fully comprehended. An audio alternative that is both complete and complementary includes all visual information such as focus or highlighting, so that the audio can be correlated with information that is visible on the screen at any point in time.
>
> **2** Examples of auditory information that allows the user to correlate the audio with the information displayed on the screen include structure and relationships conveyed through presentation.

11.1.3.2.3 *Sensory characteristics*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 1.3.3 Sensory Characteristics.

11.1.3.2.4 *Orientation*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 1.3.4 Orientation.

11.1.3.2.5 *Identify input purpose*

11.1.3.2.5.1 *Identify input purpose (open functionality)*

Where ICT is non-web software that provides a user interface and supports access to assistive technologies for screen reading, it shall satisfy the WCAG 2.1 Success Criterion 1.3.5 Identify Input Purpose.

11.1.3.2.5.2 *Identify input purpose (closed functionality)*

Where ICT is non-web software that provides a user interface and is closed to assistive technologies, in at least one mode of operation the ICT shall present to the user, in an audio form, the purpose of each input field collecting information about the user when the input field serves a purpose identified in the WCAG 2.1 Input Purposes for User Interface Components section.

11.1.4 *Distinguishable*

11.1.4.1 *Use of colour*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 1.4.1 Use of Colour.

11.1.4.2 *Audio control*

Where ICT is non-web software that provides a user interface, it shall satisfy the Software success criterion as given below.

Software success criterion for audio control:

If any audio in a software plays automatically for more than 3 s, either a mechanism is available to pause or stop the audio, or a mechanism is available to control audio volume independently from the overall system volume level.

> NOTES
>
> **1** Since any part of a software that does not meet this success criterion can interfere with a user's ability to use the whole software, all content in the software (whether or not it is used to meet other success criteria) shall meet this success criterion.
>
> **2** This success criterion is identical to the WCAG 2.1 Success Criterion 1.4.2 Audio Control replacing "on a Web page" with "in a software", "any content" with "any part of a software", "whole page" with "whole software", "on the Web page" with "in the software", removing "See Conformance Requirement 5: Non-Interference" and adding note 1.

11.1.4.3 *Contrast (minimum)*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 1.4.3 Contrast (Minimum).

11.1.4.4 *Resize text*

11.1.4.4.1 *Resize text (open functionality)*

Where ICT is non-web software that provides a user interface and that supports access to enlargement features of platform or assistive technology, it shall satisfy the WCAG 2.1 Success Criterion 1.4.4 Resize Text.

> NOTES
>
> **1** Content for which there are software players, viewers or editors with a 200 percent zoom feature would automatically meet this success criterion when used with such players, unless the content will not work with zoom.
>
> **2** This success criterion is about the ability to allow users to enlarge the text on screen at least up to 200 percent without needing to use assistive technologies. This means that the application provides some means for enlarging the text 200 percent (zoom or otherwise) without loss of content or functionality or that the application works with the platform features that meet this requirement.

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11.1.4.4.2 *Resize text (closed functionality)*

Where ICT is non-web software that provides a user interface, which is not able to access the enlargement features of platform or assistive technology, it shall meet requirement mentioned in **5.1.4** (Functionality closed to text enlargement).

> NOTE — Because the text rendering support in a closed environment may be more limited than the support found in user agents for the Web, meeting the present clause in a closed environment may place a much heavier burden on the content author.

11.1.4.5 *Images of text*

11.1.4.5.1 *Images of text (open functionality)*

Where ICT is non-web software that provides a user interface and that supports access to assistive technologies for screen reading, it shall satisfy the WCAG 2.1 Success Criterion 1.4.5 Images of Text.

11.1.4.5.2 *Images of text (closed functionality)*

Where ICT is non-web software that provides a user interface which is closed to assistive technologies for screen reading, it shall meet requirement **5.1.3.6** (speech output for non-text content).

11.1.4.6 *Void*

11.1.4.7 *Void*

11.1.4.8 *Void*

11.1.4.9 *Void*

11.1.4.10 *Reflow*

Where ICT is non-web software that provides a user interface, it shall satisfy the Software success criterion as given below.

Software success criterion for reflow:

Content can be presented without loss of information or functionality, and without requiring scrolling in two dimensions for:

a) Vertical scrolling content at a width equivalent to 320 CSS pixels; and

b) Horizontal scrolling content at a height equivalent to 256 CSS pixels.

Except for parts of the content which require two-dimensional layout for usage or meaning.

> NOTES
>
> **1** 320 CSS pixels is equivalent to a starting viewport width of 1280 CSS pixels wide at 400 percent zoom. For non-web software which are designed to scroll horizontally (for example, with vertical text), the 256 CSS pixels is equivalent to a starting viewport height of 1 024 px at 400 percent zoom.
>
> **2** Examples of content which require two-dimensional layout are images, maps, diagrams, video, games, presentations, data tables, and interfaces where it is necessary to keep toolbars in view while manipulating content.

> **3** This success criterion is identical to the WCAG 2.1 success criterion 1.4.10 reflow replacing the original WCAG 2.1 notes with notes 1 and 2, above.

11.1.4.11 *Non-text contrast*

Where ICT is non-web software that provides a user interface, it shall satisfy WCAG 2.1 Success Criterion 1.4.11 Non- text Contrast.

11.1.4.12 *Text spacing*

Where ICT is non-web software that provides a user interface and that does not have a fixed size content layout area that is essential to the information being conveyed, it shall satisfy WCAG 2.1 Success Criterion 1.4.12 Text spacing.

> NOTE — In respect of Indian languages, fonts and typography that provide adequate spacing between adjacent characters may be used as default or given as a choice.

11.1.4.13 *Content on hover or focus*

Where ICT is a non-web software that provides a user interface, it shall satisfy WCAG 2.1 Success Criterion 1.4.13 Content on hover or focus.

11.2 Operable

11.2.1 *Keyboard Accessible*

11.2.1.1 *Keyboard*

11.2.1.1.1 *Keyboard (open functionality)*

Where ICT is non-web software that provides a user interface and that supports access to keyboards or a keyboard interface, it shall satisfy the WCAG 2.1 Success Criterion 2.1.1 Keyboard.

> NOTE — This does not imply that software is required to directly support a keyboard or "keyboard interface". Nor does it imply that software is required to provide a soft keyboard. Underlying platform software may provide device independent input services to applications that enable operation via a keyboard. Software that supports operation via such platform device independent services would be operable by a keyboard and would comply.

11.2.1.1.2 *Keyboard (closed functionality)*

Where ICT is non-web software that provides a user interface which is closed to keyboards or keyboard interface, it shall meet requirement mentioned in **5.1.6.1** (operation without keyboard interface: Closed functionality).

11.2.1.1.3 *No keyboard trap*

Where ICT is non-web software that provides a user interface, it shall satisfy the Software success criterion as given below.

Software success criterion for No keyboard trap:

If keyboard focus can be moved to a component of the software using a keyboard interface, then focus can be moved away from that component using only

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a keyboard interface, and, if it requires more than unmodified arrow or tab keys or other standard exit methods, the user is advised of the method for moving focus away.

NOTES

1 Since any part of a software that does not meet this success criterion can interfere with a user's ability to use the whole software, it is necessary for all content in the software (whether or not it is used to meet other success criteria) to meet this success criterion.

2 Standard exit methods may vary by platform. For example, on many desktop platforms, the Escape key is a standard method for exiting.

3 This success criterion is identical to the WCAG 2.1 Success Criterion 2.1.2 No Keyboard Trap replacing "content", "page" and "Web page" with "software", removing "See Conformance Requirement 5: Non-Interference" and with the addition of Note 2 above and with Note 1 above re-drafted to avoid the use of the word "shall".

11.2.1.1.4 *Void*

11.2.1.1.5 *Character key shortcuts*

11.2.1.1.5.1 *Character key shortcuts (open functionality)*

Where ICT is non-web software that provides a user interface, it shall satisfy WCAG 2.1 Success Criterion 2.1.4 Character Key Shortcuts.

11.2.1.1.5.2 *Character key shortcuts (closed functionality)*

Where ICT is non-web software that provides a user interface, which is closed to keyboards or keyboard interface, it shall meet requirement **5.1.6.1** (operation without keyboard interface: Closed functionality).

11.2.2 *Enough Time*

11.2.2.1 *Timing adjustable*

Where ICT is non-web software that provides a user interface, it shall satisfy the Software success criterion as given below.

Software success criterion for Timing adjustable:

For each time limit that is set by the software, at least one of the following is true:

a) *Turn off* — The user is allowed to turn off the time limit before encountering it;

b) *Adjust* — The user is allowed to adjust the time limit before encountering it over a wide range that is at least ten times the length of the default setting;

c) *Extend* — The user is warned before time expires and given at least 20 s to extend the time limit with a simple action (for example, "press the space bar"), and the user is allowed to extend the time limit at least ten times;

d) *Real-time Exception* — The time limit is a required part of a real-time event (for example, an auction), and no alternative to the time limit is possible;

e) *Essential Exception* — The time limit is essential and extending it would invalidate the activity; or

f) *20 H Exception* — The time limit is longer than 20 h.

NOTES

1 This success criterion helps ensure that users can complete tasks without unexpected changes in content or context that are a result of a time limit. This success criterion should be considered in conjunction with WCAG 2.1 Success Criterion 3.2.1, which puts limits on changes of content or context as a result of user action.

2 This success criterion is identical to the WCAG 2.1 Success Criterion 2.2.1 Timing Adjustable replacing "the content" with "software" and with the words "WCAG 2.1" added before the word "Success Criterion" in note 1 above.

11.2.2.2 *Pause, stop, hide*

Where ICT is non-web software that provides a user interface, it shall satisfy the Software success criterion as given below.

Software success criterion for Pause, stop, hide:

For moving, blinking, scrolling, or auto-updating information, all of the following are true:

a) *Moving, blinking, scrolling* — For any moving, blinking or scrolling information that:

1) starts automatically,

2) lasts more than five seconds, and

3) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it unless the movement, blinking, or scrolling is part of an activity where it is essential.

b) *Auto-updating* — For any auto-updating information that:

1) starts automatically; and

2) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it or to control the frequency of the update unless the auto-updating is part of an activity where it is essential.

NOTES

1 For requirements related to flickering or flashing content, refer to WCAG 2.1 Guideline 2.3.

2 This success criteria is applicable to all content in the software (whether or not there is an alternate accessible mode of operation of the software) since any part of a software that does not meet this success criterion can interfere with a user's ability to use the whole software (including a user interface element that enables the user to activate the alternate accessible mode of operation).

3 Content that is updated periodically by software or that is streamed to the user agent is not required to preserve or

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present information that is generated or received between the initiation of the pause and resuming presentation, as this may not be technically possible, and in many situations could be misleading to do so.

4 An animation that occurs as part of a preload phase or similar situation can be considered essential if interaction cannot occur during that phase for all users and if not indicating progress could confuse users or cause them to think that content was frozen or broken.

5 This is to be applied to all content. Any content, whether informative or decorative, that is updated automatically, blinks, or moves may create an accessibility barrier.

6 This success criterion is identical to the WCAG 2.1 Success Criterion 2.2.2 Pause, Stop, Hide replacing "page" and "Web page" with "software", removing "See Conformance Requirement 5: Non-Interference" in Note 2 of the success criterion, with the words "WCAG 2.1" added before the word "Guideline" in note 1 above, with Note 2 above re-drafted to avoid the use of the word "must" and with the addition of Note 5 above.

11.2.3 *Seizures and Physical Reactions*

11.2.3.1 *Three flashes or below threshold*

Where ICT is non-web software that provides a user interface, it shall satisfy the Software success criterion as given below.

Software success criterion for three flashes or below threshold:

Software does not contain anything that flashes more than three times in any one second period, or the flash is below the general flash and red flash thresholds.

NOTES

1 This success criteria is applicable to all content in the software (whether or not there is an alternate accessible mode of operation of the software) since any part of a software that does not meet this success criterion can interfere with a user's ability to use the whole software (including a user interface element that enables the user to activate the alternate accessible mode of operation).

2 This success criterion is identical to the WCAG 2.1 success criterion 2.3.1 Three Flashes or Below Threshold replacing "Web pages" with "software", "the whole page" with "the whole software", "the Web page" with "the software" and removing "See Conformance Requirement 5: Non-Interference" and with note 1 above re-drafted to avoid the use of the word "must".

11.2.4 *Navigable*

11.2.4.1 *Void*

NOTES

1 The related web page requirement "Bypass blocks" does not apply to single software programs, but to a specific definition of "sets of software programs" that are extremely rare.

2 Although not a requirement, it is generally considered best practice, and to address user needs, to be able to bypass blocks of content that are repeated within software.

11.2.4.2 *Void*

NOTES

1 The related web page requirement "Page titled" does not apply to single software programs, but to a specific definition of "sets of software programs" that are extremely rare.

2 Although the name of a software product could be a sufficient title if it describes the topic or purpose, software names are trademarked and trademark names cannot by law be descriptive names. It is not practical to make software names both unique and descriptive.

11.2.4.3 *Focus order*

Where ICT is non-web software that provides a user interface, it shall satisfy the Software success criterion as given below.

Software success criterion for Focus order:

If software can be navigated sequentially and the navigation sequences affect meaning or operation, focusable components receive focus in an order that preserves meaning and operability.

NOTE — This success criterion is identical to the WCAG 2.1 Success Criterion 2.4.3 Focus order replacing "Web page" with "software".

11.2.4.4 *Link purpose (in context)*

Where ICT is non-web software that provides a user interface, it shall satisfy WCAG 2.1 Success Criterion 2.4.4 Link Purpose (In Context).

11.2.4.5 *Void*

NOTE — The related web page requirement for "multiple ways" applies to "Sets" of web pages. In software, the equivalent to "sets of web pages" would be "sets of software", but these are extremely rare and an equivalent is not included in this clause on software requirements.

11.2.4.6 *Headings and labels*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 2.4.6 Headings and Labels.

NOTE — In software, headings and labels are used to describe sections of content and controls respectively. In some cases, it may be unclear whether a piece of static text is a heading or a label. But whether treated as a label or a heading, the requirement is the same: that if they are present, they describe the topic or purpose of the item(s) they are associated with.

11.2.4.7 *Focus visible*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 2.4.7 Focus Visible.

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11.2.5 *Input Modalities*

11.2.5.1 *Pointer gestures*

Where ICT is non-web software that provides a user interface, it shall satisfy the Software success criterion as given below.

Software success criterion for pointer gestures:

All functionality that uses multipoint or path-based gestures for operation can be operated with a single pointer without a path-based gesture, unless a multipoint or path-based gesture is essential.

> NOTES
>
> **1** This requirement applies to non-web software that interprets pointer actions (that is, this does not apply to actions that are required to operate the user agent or assistive technology).
>
> **2** This success criterion is identical to the WCAG 2.1 Success Criterion 2.5.1 Pointer Gestures replacing the original WCAG 2.1 note with Note 1 above.

11.2.5.2 *Pointer cancellation*

Where ICT is non-web software that provides a user interface, it shall satisfy the Software success criterion as given below.

Software success criterion for Pointer cancellation:

For functionality that can be operated using a single pointer, at least one of the following is true:

a) *No Down-Event* — The down-event of the pointer is not used to execute any part of the function.

b) *Abort or Undo* — Completion of the function is on the up-event, and a mechanism is available to abort the function before completion or to undo the function after completion.

c) *Up Reversal* — The up-event reverses any outcome of the preceding down-event.

d) *Essential* — Completing the function on the down-event is essential.

> NOTES
>
> **1** Functions that emulate a keyboard or numeric keypad key press are considered essential.
>
> **2** This requirement applies to non-web software that interprets pointer actions (that is, this does not apply to actions that are required to operate the user agent or assistive technology).
>
> **3** This success criterion is identical to the WCAG 2.1 Success Criterion 2.5.2 Pointer Cancellation replacing the original WCAG 2.1 note with notes 1 and 2 above.

11.2.5.3 *Label in name*

11.2.5.3.1 *Label in name (open functionality)*

Where ICT is non-web software that provides a user interface, it shall satisfy WCAG 2.1 Success Criterion 2.5.3 Label in Name.

11.2.5.3.2 *Label in name (closed functionality)*

Where ICT is non-web software that provides a user interface which is closed to assistive technologies for screen reading, it should meet requirement 5.1.3.3 (Auditory output correlation).

11.2.5.4 *Motion actuation*

Where ICT is non-web software that provides a user interface, it shall satisfy WCAG 2.1 Success Criterion 2.5.4 Motion Actuation.

11.3 Understandable

11.3.1 *Readable*

11.3.1.1 *Language of software*

11.3.1.1.1 *Language of software (open functionality)*

Where ICT is non-web software that provides a user interface and that supports access to assistive technologies for screen reading, it shall satisfy the software success criterion as given below.

Software success criterion for Language of software:

The default human language of software can be programmatically determined.

> NOTES
>
> **1** Where software platforms provide a "locale/language" setting, applications that use that setting and render their interface in that "locale/language" would comply with this success criterion. Applications that do not use the platform "locale/language" setting but instead use an accessibility-supported method for exposing the human language of the software would also comply with this success criterion.
>
> Applications implemented in technologies where assistive technologies cannot determine the human language and that do not support the platform "locale/language" setting may not be able to meet this success criterion in that locale/language.
>
> **2** This success criterion is identical to the WCAG 2.1 Success Criterion 3.1.1 Language of page, replacing "each web page" with "software" and with the addition of note 1 above.

11.3.1.1.2 *Language of software (closed functionality)*

Where ICT is non-web software that provides a user interface, which is closed to assistive technologies for screen reading, it shall meet requirement **5.1.3.14** (Spoken languages).

11.3.1.2 *Void*

> NOTE — To apply the related web page requirement for "Language of parts" to software would require the marking-up of all text in all locations within the software. This would be impossible so an equivalent is not included in this clause on software requirements.

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11.3.2 *Predictable*

11.3.2.1 *On focus*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 3.2.1 On Focus.

> NOTE — Some compound documents and their user agents are designed to provide significantly different viewing and editing functionality depending upon what portion of the compound document is being interacted with (for example, a presentation that contains an embedded spreadsheet, where the menus and toolbars of the user agent change depending upon whether the user is interacting with the presentation content, or the embedded spreadsheet content). If the user uses a mechanism other than putting focus on that portion of the compound document with which they mean to interact (for example, by a menu choice or special keyboard gesture), any resulting change of context would not be subject to this success criterion because it was not caused by a change of focus.

11.3.2.2 *On input*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 3.2.2 On Input.

11.3.2.3 *Void*

> NOTE — The related web page requirement for "consistent navigation" applies to "Sets" of web pages. While consistency within software is desirable, "sets of software" in the same sense as "sets of web pages", are extremely rare and an equivalent is not included in this clause on software requirements.

11.3.2.4 *Void*

> NOTE — The related web page requirement for "consistent identification" applies to "sets" of web pages. In software, the equivalent to "sets of web pages" would be "sets of software", but these are extremely rare and an equivalent is not included in this clause on software requirements.

11.3.3 *Input Assistance*

11.3.3.1 *Error identification*

11.3.3.1.1 *Error identification (open functionality)*

Where ICT is non-web software that provides a user interface and that supports access to assistive technologies for screen reading, it shall satisfy the WCAG 2.1 Success Criterion 3.3.1 Error Identification.

11.3.3.1.2 *Error identification (closed functionality)*

Where ICT is non-web software that provides a user interface, which is closed to assistive technologies for screen reading, it shall meet requirement **5.1.3.15** (non-visual error identification).

11.3.3.2 *Labels or instructions*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 3.3.2 Labels or Instructions.

11.3.3.3 *Error suggestion*

Where ICT is non-web software that provides a user interface, it shall satisfy the WCAG 2.1 Success Criterion 3.3.3 Error Suggestion.

11.3.3.4 *Error prevention (legal, financial, data)*

Where ICT is non-web software that provides a user interface, it shall satisfy the Software success criterion as given below.

Software success criterion for Error prevention (legal, financial, data):

For software that cause legal commitments or financial transactions for the user to occur, that modify or delete user- controllable data in data storage systems, or that submit user test responses, at least one of the following is true:

a) *Reversible* — Submissions are reversible.

b) *Checked* — Data entered by the user is checked for input errors and the user is provided an opportunity to correct them.

c) *Confirmed* — A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission.

> NOTE — This success criterion is identical to the WCAG 2.1 Success Criterion 3.3.4 Error Prevention (Legal, Financial, Data) replacing "web pages" with "software".

11.4 Robust

11.4.1 *Compatible*

11.4.1.1 *Parsing*

11.4.1.1.1 *Parsing (open functionality)*

Where ICT is non-web software that provides a user interface and that supports access to any assistive technologies, it shall satisfy the success criterion as given below.

Software success criterion for Parsing:

For software that uses markup languages, in such a way that the markup is separately exposed and available to assistive technologies and accessibility features of software or to a user-selectable user agent, elements have complete start and end tags, elements are nested according to their specifications, elements do not contain duplicate attributes, and any IDs are unique, except where the specifications allow these features.

> NOTES
> **1** Start and end tags that are missing a critical character in their formation, such as a closing angle bracket or a mismatched attribute value quotation mark are not complete.
>
> **2** Markup is not always available to assistive technology or to user selectable user agents, such as browsers. In such cases, conformance to this [requirement] would have no impact on accessibility as it can for web content where it is exposed.

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3 Examples of markup that is separately exposed and available to assistive technologies and to user agents include but are not limited to: documents encoded in HTML, ODF, and OOXML. In these examples, the markup can be parsed entirely in two ways:

(a) by assistive technologies which may directly open the document, and

(b) by assistive technologies using DOM APIs of user agents for these document formats.

4 Examples of markup used internally for persistence of the software user interface that are never exposed to assistive technology include but are not limited to: XUL, and FXML. In these examples assistive technology only interacts with the user interface of generated software.

5 This success criterion is identical to the WCAG 2.1 Success Criterion 4.1.1 Parsing replacing "In content implemented using markup languages" with "For software that uses markup languages, in such a way that the markup is separately exposed and available to assistive technologies and accessibility features of software or to a user-selectable user agent" with the addition of notes 2, 3 and 4 above.

11.4.1.1.2 *Parsing (closed functionality)*

Not applicable.

NOTE — Where ICT is non-web software that provides a user interface, which is closed to all assistive technology it does not have to meet the "Parsing" success criterion mentioned under **11.4.1.1.1** because the intent of this success criterion is to provide consistency so that different user agents or assistive technologies will yield the same result.

11.4.1.2 *Name, role, value*

11.4.1.2.1 *Name, role, value (open functionality)*

Where ICT is non-web software that provides a user interface and that supports access to any assistive technologies, it shall satisfy the Software success criterion as given below.

Software success criterion for Name, role, value:

For all user interface components (including but not limited to: form elements, links and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to user agents, including assistive technologies.

NOTES

1 This success criterion is primarily for software developers who develop or use custom user interface components. Standard user interface components on most accessibility-supported platforms already meet this success criterion when used according to specification.

2 For conforming to this success criterion, it is usually best practice for software user interfaces to use the accessibility services provided by platform software. These accessibility services enable interoperability between software user interfaces and both assistive technologies and accessibility features of software in standardized ways. Most platform accessibility services go beyond programmatic exposure of name and role, and programmatic setting of states, properties and values (and notification of same), and specify additional

information that could or should be exposed and/or set (for instance, a list of the available actions for a given user interface component, and a means to programmatically execute one of the listed actions).

3 This success criterion is identical to the WCAG 2.1 success criterion 4.1.2 Name, Role, Value replacing the original WCAG 2.1 note with: "This success criterion is primarily for software developers who develop or use custom user interface components. Standard user interface components on most accessibility-supported platforms already meet this success criterion when used according to specification." and the addition of note 2 above.

11.4.1.2.2 *Name, role, value (closed functionality)*

Not applicable.

NOTE — Where ICT is non-web software that provides a user interface, which is closed to all assistive technology it does not have to meet the "Name, role, value" Software success criterion mentioned under **11.4.1.2.1** because this success criterion requires information in a programmatically determinable form.

11.4.1.3 *Status messages*

11.4.1.3.1 *Status messages (open functionality)*

Where ICT is non-web software, it shall satisfy WCAG 2.1 Success Criterion 4.1.3 Status Messages.

11.4.1.3.2 *Status messages (closed functionality)*

Not applicable.

11.5 Interoperability with assistive technology

11.5.1 Closed Functionality

Where the closed functionality of software conforms to **5.1** (closed functionality) it shall not be required to conform with **11.5.2** to **11.5.2.17**.

11.5.2 *Accessibility Services*

11.5.2.1 *Platform accessibility service support for software that provides a user interface*

Platform software shall provide a set of documented platform services that enable software that provides a user interface running on the platform software to interoperate with assistive technology.

Where a user interface concept corresponding to one of the **11.5.2.5** to **11.5.2.17** is supported within the software environment, the platform software should support that requirement. For example, selection attributes from **11.5.2.14** (Modification of focus and selection attributes) may not exist in environments that do not allow selection, which is most commonly associated with copy and paste.

NOTES

1 These define the minimum functionality of software providing user interfaces when using platform services.

2 In some platforms these services may be called accessibility services, but in some other platforms these services may be provided as part of the user interface services.

3 User interface services that provide accessibility support by default are considered to be part of the services provided to

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conform to this clause (for example, the service for creating a new user interface element provides role, state, boundary, name and description).

4 To comply with this requirement the platform software can provide its own set of services or expose the services provided by its underlying platform layers, if those services conform to this requirement.

5 Within specific programming environments, the technical attributes associated with the user interface properties described in **11.5.2.5** to **11.5.2.17** might have different names than those used within the clauses.

6 Provision to choose language setting may be supported by the platform software. It shall include choice of all Indian languages figuring in the 8th schedules of the Indian constitution.

11.5.2.2 *Platform accessibility service support for assistive technologies*

Platform software shall provide a set of documented platform accessibility services that enable assistive technology to interoperate with software that provides a user interface running on the platform software.

Where a user interface concept corresponding to one of the **11.5.2.5** to **11.5.2.17** is supported within the software environment, the platform software should support that requirement. For example, selection attributes from **11.5.2.14** (Modification of focus and selection attributes) may not exist in environments that do not allow selection, which is most commonly associated with copy and paste.

> NOTES
>
> **1** These define the minimum functionality available to assistive technologies when using platform services.
>
> **2** The definition of platform in **3.1** applies to software that provides services to other software, including but not limited to, operating systems, web browsers, virtual machines.
>
> **3** In some platforms these services may be called accessibility services, but in some other platforms these services may be provided as part of the user interface services.
>
> **4** Typically, these services belong to the same set of services that are described in **11.5.2.1**.
>
> **5** To comply with this requirement the platform software can provide its own set of services or expose the services provided by its underlying platform layers, if those services conform to this requirement.
>
> **6** The platform software shall provide for programmatically determining user interface language so that these are exposed to assistive technologies.

11.5.2.3 *Use of accessibility services*

Where the software provides a user interface, it shall use the applicable documented platform accessibility services. If the documented platform accessibility services do not allow the software to meet the applicable requirements of **11.5.2.5** to **11.5.2.17**, then software that provides a user interface shall use other documented services to interoperate with assistive technology.

> NOTE — The term "documented platform accessibility services" refers to the set of services provided by the platform according to **11.5.2.1** and **11.5.2.2**.

It is best practice to develop software using toolkits that automatically implement the underlying platform accessibility services.

11.5.2.4 *Assistive technology*

Where the ICT is assistive technology, it shall use the documented platform accessibility services.

> NOTES
>
> **1** The term "documented platform accessibility services" refers to the set of services provided by the platform according to **11.5.2.1** and **11.5.2.2**.
>
> **2** Assistive technology can also use other documented accessibility services.

11.5.2.5 *Object information*

Where the software provides a user interface it shall, by using the services as described in **11.5.2.3,** make the user interface elements' role, state(s), boundary, name, and description programmatically determinable by assistive technologies.

11.5.2.6 *Row, column, and headers*

Where the software provides a user interface it shall, by using the services as described in **11.5.2.3,** make the row and column of each cell in a data table, including headers of the row and column if present, programmatically determinable by assistive technologies.

11.5.2.7 *Values*

Where the software provides a user interface, it shall, by using the services as described in **11.5.2.3**, make the current value of a user interface element and any minimum or maximum values of the range, if the user interface element conveys information about a range of values, programmatically determinable by assistive technologies.

11.5.2.8 *Label relationships*

Where the software provides a user interface, it shall expose the relationship that a user interface element has as a label for another element, or of being labelled by another element, using the services as described in **11.5.2.3**, so that this information is programmatically determinable by assistive technologies.

11.5.2.9 *Parent-child relationships*

Where the software provides a user interface it shall, by using the services as described in **11.5.2.3**, make the relationship between a user interface element and any parent or children elements programmatically determinable by assistive technologies.

11.5.2.10 *Text*

Where the software provides a user interface it shall, by using the services as described in **11.5.2.3**, make the text contents, text attributes, and the boundary of text rendered to the screen programmatically determinable by assistive technologies.

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11.5.2.11 *List of available actions*

Where the software provides a user interface it shall, by using the services as described in **11.5.2.3**, make a list of available actions that can be executed on a user interface element, programmatically determinable by assistive technologies.

11.5.2.12 *Execution of available actions*

Where permitted by security requirements, software that provides a user interface shall, by using the services as described in **11.5.2.3**, allow the programmatic execution of the actions exposed according to **11.5.2.11** by assistive technologies.

> NOTES
>
> **1** In some cases, the security requirements imposed on a software product may forbid external software from interfering with the ICT product. Examples of systems under strict security requirements are systems dealing with intelligence activities, cryptologic activities related to national security, command and control of military forces.
>
> **2** Assistive technologies may be required to maintain the same level of security as the standard input mechanisms supported by the platform.

11.5.2.13 *Tracking of focus and selection attributes*

Where software provides a user interface it shall, by using the services as described in **11.5.2.3**, make information and mechanisms necessary to track focus, text insertion point, and selection attributes of user interface elements programmatically determinable by assistive technologies.

11.5.2.14 *Modification of focus and selection attributes*

Where permitted by security requirements, software that provides a user interface shall, by using the services as described in **11.5.2.3**, allow assistive technologies to programmatically modify focus, text insertion point, and selection attributes of user interface elements where the user can modify these items.

> NOTES
>
> **1** In some cases, the security requirements imposed on a software product may forbid external software from interfering with the ICT product and so this requirement would not apply. Examples of systems under strict security requirements are systems dealing with intelligence activities, cryptologic activities related to national security, command and control of military forces.
>
> **2** Assistive technologies may be required to maintain the same level of security as the standard input mechanisms supported by the platform.

11.5.2.15 *Change notification*

Where software provides a user interface it shall, by using the services as described in **11.5.2.3**, notify assistive technologies about changes in those programmatically determinable attributes of user interface elements that are referenced in requirements **11.5.2.5** to **11.5.2.11** and **11.5.2.13**.

11.5.2.16 *Modifications of states and properties*

Where permitted by security requirements, software that provides a user interface shall, by using the services as described in **11.5.2.3**, allow assistive technologies to programmatically modify states and properties of user interface elements, where the user can modify these items.

> NOTES
>
> **1** In some cases, the security requirements imposed on a software product may forbid external software from interfering with the ICT product and so this requirement would not apply. Examples of systems under strict security requirements are systems dealing with intelligence activities, cryptologic activities related to national security, command and control of military forces.
>
> **2** Assistive technologies may be required to maintain the same level of security as the standard input mechanisms supported by the platform.

11.5.2.17 *Modifications of values and text*

Where permitted by security requirements, software that provides a user interface shall, by using the services as described in **11.5.2.3**, allow assistive technologies to modify values and text of user interface elements using the input methods of the platform, where a user can modify these items without the use of assistive technology.

> NOTES
>
> **1** In some cases, the security requirements imposed on a software product may forbid external software from interfering with the ICT product and so this requirement would not apply. Examples of systems under strict security requirements are systems dealing with intelligence activities, cryptologic activities related to national security, command and control of military forces.
>
> **2** Assistive technologies may be required to maintain the same level of security as the standard input mechanisms supported by the platform.

11.6 Documented Accessibility Usage

11.6.1 *User Control of Accessibility Features*

Where software is a platform, it shall provide sufficient modes of operation for user control over those platform accessibility features documented as intended for users.

11.6.2 *No Disruption of Accessibility Features*

Where software provides a user interface, it shall not disrupt those documented accessibility features that are defined in platform documentation except when requested to do so by the user during the operation of the software.

11.7 User preferences

Where software is not designed to be isolated from its platform, and provides a user interface, that user interface shall follow the values of the user preferences for platform settings for: units of measurement, colour,

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contrast, font type, font size, and focus cursor except where they are overridden by the user.

NOTES

1 Software that is isolated from its underlying platform has no access to user settings in the platform and thus cannot adhere to them.

2 For web content, the underlying platform is the user agent.

3 This does not preclude the software from having additional values for a setting as long as there is one mode where the application will follow the system settings even if more restricted.

4 User preference setting may include default language settings. In turn, these may be programmatically determined so that assistive technologies are aware of the settings to respond to user's choice.

11.8 Authoring Tools

11.8.1 *General (Informative)*

For those creating web content authoring tools, ATAG 2.0 provides information that can be of interest to those who want to go beyond these requirements.

NOTE — This is applicable both to standalone and to web-based authoring tools.

11.8.2 *Content Technology*

Authoring tools shall conform to **11.8.2** to **11.8.5** to the extent that information required for accessibility is supported by the format used for the output of the authoring tool.

11.8.3 *Accessible Content Creation*

Authoring tools shall enable and guide the production of content that conforms to **9** (Web content) or 10 (non-Web content) as applicable.

NOTE — Authoring tools may rely on additional tools where conformance with specific requirements is not achievable by a single tool. For example, a video editing tool may enable the creation of video files for distribution *via* broadcast television and the web, but authoring of caption files for multiple formats may be provided by a different tool.

11.8.4 *Preservation of Accessibility Information in Transformations*

If the authoring tool provides restructuring transformations or re-coding transformations, then accessibility information shall be preserved in the output if equivalent mechanisms exist in the content technology of the output.

NOTES

1 Restructuring transformations are transformations in which the content technology stays the same, but the structural features of the content are changed (or example, linearizing tables, splitting a document into pages).

2 Re-coding transformations are transformations in which the technology used to encode the content is changed.

11.8.5 *Repair Assistance*

If the accessibility checking functionality of an authoring tool can detect that content does not meet a requirement of **9** (Web) or **10** (non-web documents) as applicable, then the authoring tool shall provide repair suggestion(s).

NOTE — This does not preclude automated and semi-automated repair which is possible (and encouraged) for many types of content accessibility problems.

11.8.6 *Templates*

When an authoring tool provides templates, at least one template that supports the creation of content that conforms to the requirements of 9 (Web) or **10** (non-web documents) as applicable shall be available and identified as such.

NOTE — The template may include fields to indicate language setting of the user.

12 DOCUMENTATION AND SUPPORT SERVICES

12.1 Product Documentation

12.1.1 *Accessibility and Compatibility Features*

Product documentation provided with the ICT whether provided separately or integrated within the ICT shall list and explain how to use the accessibility and compatibility features of the ICT.

NOTES

1 Accessibility and compatibility features include accessibility features that are built-in and accessibility features that provide compatibility with assistive technology.

2 It is best practice to use WebSchemas/Accessibility 2.0 to provide meta data on the accessibility of the ICT.

3 The accessibility statement and help pages are both examples of the provision of product information.

4 Where Indian language is supported, product documentation may also be offered in the language opted by the user.

12.1.2 *Accessible Documentation*

Product documentation provided with the ICT shall be made available in at least one of the following electronic formats:

a) a Web format that conforms to the requirements of **9**; or

b) a non-web format that conforms to the requirements of **10**.

NOTES

1 This does not preclude the possibility of also providing the product documentation in other formats (electronic, printed or audio) that are not accessible.

2 It also does not preclude the possibility of providing alternate formats that meet the needs of some specific type of users (for example, Braille documents for blind people or easy-to-read information for persons with limited cognitive, language and learning abilities).

3 Where documentation is incorporated into the ICT, the documentation falls under the requirements for accessibility in this standard.

4 A user agent that supports automatic media conversion would be beneficial to enhancing accessibility.

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5 Where product documentation is offered in an Indian language of choice to the end-user, alternate media shall also be in the same language.

12.2 Support Services

12.2.1 *General (Informative)*

ICT support services include, but are not limited to: help desks, call centres, technical support, relay services and training services.

NOTES

1 In respect of an Indian language user, ICT support services shall also be provided in the same language of choice of the end-user to the maximum extent across all channels of support.

2 Support service representatives shall be trained to meet the needs of persons with disabilities.

Examples

1 Trouble shooting for assistive technology users – such representatives shall be able to outline instructions to clients for troubleshooting a problem using screen readers.

2 customer appropriate instructions – such as asking them to double tap the third button from the top, as opposed to saying a red-coloured icon, when the customer is blind/ visually-impaired.

12.2.2 *Information on Accessibility and Compatibility Features*

ICT support services shall provide information on the accessibility and compatibility features that are mentioned in the product documentation.

NOTE — Accessibility and compatibility features include accessibility features that are built-in and accessibility features that provide compatibility with assistive technology.

12.2.3 *Effective Communication*

ICT support services shall accommodate the communication needs of individuals with disabilities either directly or through a referral point.

NOTE — One of the forms of communication with individuals with disabilities could be choice of Indian language, in whatever form – text, images, video, voice or captioning.

12.2.4 *Accessible Documentation*

Documentation provided by support services shall be made available in at least one of the following electronic formats:

a) a Web format that conforms to **9**; or

b) a non-web format that conforms to **10**.

NOTES

1 This does not preclude the possibility of also providing the documentation in other formats (electronic or printed) that are not accessible.

2 It also does not preclude the possibility of providing alternate formats that meet the needs of some specific type of users (for example, Braille documents for blind people or easy-to-read information for persons with limited cognitive, language and learning abilities).

3 Where the support documentation is incorporated into the ICT, the documentation falls under the requirements for accessibility in this standard.

4 A user agent that supports automatic media conversion would be beneficial to enhancing accessibility. ICT providing relay or emergency service access.

13 ICT PROVIDING RELAY OR EMERGENCY SERVICE ACCESS

13.1 Relay Services Requirements

13.1.1 *General (Informative)*

Relay services enable users of different modes of communication for example, text, sign, speech, to interact remotely through ICT with two-way communication by providing conversion between the modes of communication, normally by a human operator.

It is best practice to meet the applicable relay service requirements of ETSI ES 202 975.

NOTE — Relay services need to support users of a chosen Indian language across different modes of communication namely, text, sign, speech.

13.1.2 *Text Relay Services*

Where ICT is intended to provide a text relay service, the text relay service shall enable text users and speech users to interact by providing conversion between the two modes of communication.

NOTE — Text relay services may support Indian language users maximally.

13.1.3 *Sign Relay Services*

Where ICT is intended to provide a sign relay service, the sign relay service shall enable sign language users and speech users to interact by providing conversion between the two modes of communication.

NOTES

1 Sign relay services are also sometimes referred to as sign language relay services or video relay services.

2 Sign relay services shall follow Indian Sign Language (ISL).

13.1.4 *Lip-reading Relay Services*

Where ICT is intended to provide a lip-reading relay service, the lip-reading service shall enable lip-readers and voice telephone users to interact by providing conversion between the two modes of communication.

13.1.5 *Captioned Telephony Services*

Where ICT is intended to provide a captioned telephony service, the captioned telephony service shall assist a deaf or hard of hearing user in a spoken dialogue by providing text captions translating the incoming part of the conversation.

NOTE — The captions shall be as per this standard and shall support Indian languages.

13.1.6 *Speech to Speech Relay Services*

Where ICT is intended to provide a speech-to-speech relay service, the speech-to-speech relay service shall enable telephone users who are speech impaired, have

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limited cognitive, language and learning abilities, as well as any other user, to communicate by providing assistance between them.

> NOTE — Speech to speech relay service may also enable users speaking different Indian languages to communicate using the assistance provided between them.

13.2 Access to Relay Services

Where ICT systems support two-way communication, and the system is specified for use with relay services, access to those relay services shall not be prevented for outgoing and incoming calls involving: voice, RTT, or video, either individually or in combinations supported by both the relay service and the ICT system.

> NOTES
>
> **1** The purpose of this requirement is to achieve functionally equivalent communication access by persons with disabilities.
>
> **2** The system may be specified as needing to work with relay services by, for example, procurers, regulators, or product specifications.

13.3 Access to Emergency Services

Where ICT systems support two-way communication, and the system is specified for use with emergency services, access to those emergency services shall not be prevented for outgoing and incoming calls involving: voice, RTT, or video, either individually or in combinations supported by both the emergency service and the ICT system.

> NOTES
>
> **1** The purpose of this requirement is to achieve functionally equivalent communication access to the emergency service by persons with disabilities.
>
> **2** The system may be specified as needing to work with emergency services by, for example: procurers, regulators, or product specifications.
>
> **3)** Support to Indian language input and display and to Indian Sign Language must be ensured.

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ANNEX A

(*Foreword*)

(*Informative*)

RELATIONSHIP OF THIS STANDARD WITH OTHER DEPARTMENTS UNDER GOI

This standard brings out the current Indian legal context of accessibility, –including those pertaining to ICT, especially as provided by *Rights of Persons with Disabilities Act*, 2016.

There are also various other sectoral standards, guidelines, rules and compliance requirements that have been announced by various ministries, departments and government agencies, many in response to *RPwD Act*, 2016. Some have existed even prior to the coming into being of the above. Of consequence here are those relating to various components of ICT and the use of ICT in various sectors.

Compliance to Guidelines for Indian Government Apps and Websites (GIGW 2.0), and hence WCAG 2.0 has been made mandatory by Department of Administrative Reforms and Public Grievances (DARPG) for all government websites and Department of Empowerment of Persons with Disabilities (DEPwD) has set goals, currently, based on that. The main difference this standard brings in that context, is the choice of WCAG 2.1 AA compliance criteria in lieu of WCAG 2.0 AA expected in GIGW 2.0. Compliance to this standard is backward compatible with GIGW 2.0. Additional success criteria have been brought in here. In addition, the context of the applicability of this standard for wider-users, government, private and non-government as mandated by the *RPwD Act*, 2016 should be kept in mind. As also the wider scope of this standard in terms of functionalities, cutting across all ICT products and services, practically.

RBI had mandated certain guidelines for compliance of banking sector to accessibility and one can expect that sector also to upgrade their requirements.

Department of Telecommunications (DoT), through a TRAI guideline, has mandated all mobile handset suppliers to support Indian language keyboards in shipping of mobile handsets (*source:* IS 16333-3, IS 16350 : 2016).

MoI&B has announced targets for use of Indian Sign Language and Captioning and Subtitling in respect of all broadcast service providers [*source* MoI & B Accessibility Standard].

Ministry of Education has also taken steps in respect of Education sector. One can expect that sector to be an important and early adopter.

This standard is intended to rally support of all stakeholders and trigger widespread availability and adoption of ICT products and services compliant to this standard.

Indian IT sector, Telecom sector, Start-up sector, R&D labs, Academia and NGOs will play a key role in bringing out affordable, innovative and compliant ICT products and services to the market and large-scale adoption to the benefit of PwD users and other sections who will also benefit.

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ANNEX B

(*Informative*)

(*Clause* 4.1)

RELATIONSHIP BETWEEN REQUIREMENTS AND FUNCTIONAL PERFORMANCE STATEMENTS

B-1 RELATIONSHIPS BETWEEN CLAUSES 5 TO 13 AND THE FUNCTIONAL PERFORMANCE STATEMENTS

Table 4 shows which of the requirements set out in clauses **5** to **13** support each of the functional performance statements set out in clause **4.2**.

To allow Table 4 to fit the page, the abbreviations shown in Table 3 have been used in the column headers of Table 4.

The following abbreviations have been used to represent the relationship between the requirements in clauses **5** to **13** and the functional performance statements:

a) P = Primary relationship. The requirement supports the functional performance statement.

b) S = Secondary relationship. The requirement provides partial support for the functional performance statement because some users may use the feature in specific situations.

Table 3 Key to the Column Header Designations Used in Table 4

(*Clause* B-1)

Clause Number	Column Header Abbreviation	Functional Performance Statement
4.2.1	WV	Usage without vision
4.2.2	LV	Usage with limited vision
4.2.3	WPC	Usage without perception of colour
4.2.4	WH	Usage without hearing
4.2.5	LH	Usage with limited hearing
4.2.6	WVC	Usage without vocal capability
4.2.7	LMS	Usage with limited manipulation or strength
4.2.8	LR	Usage with limited reach
4.2.9	PST	Minimize photosensitive seizure triggers
4.2.10	LC	Usage with limited cognition
4.2.11	PR	Privacy
4.2.12	IL	Indian language support

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Table 4 Requirements in Clauses 5 to 13 Supporting the Accessibility Needs Expressed in the Functional Performance Statements

(*Clause* B-1)

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 PR	4.2.12 IL
5.1.2.1 Closed functionality	–	–	–	–	–	–	–	–	–	–	–	–
5.1.2.2 Assistive technology	–	–	–	–	–	–	–	–	–	–	S	P
5.1.3.1 General (belongs to 5.1.3 Non-visual access)	P	S	–	–	–	–	–	–	–	S	–	S
5.1.3.2 Auditory output delivery including speech	P	S	–	–	–	–	–	–	–	S	–	S
5.1.3.3 Auditory output correlation	–	P	–	–	–	–	–	–	–	S	–	–
5.1.3.4 Speech output user control	P	S	–	–	–	–	–	–	–	S	–	S
5.1.3.5 Speech output automatic interruption	P	S	–	–	–	–	–	–	–	S	–	–
5.1.3.6 Speech output for non-text content	P	S	–	–	–	–	–	–	–	S	–	S
5.1.3.7 Speech output for video information	P	S	–	–	–	–	–	–	–	S	–	S
5.1.3.8 Masked entry	P	S	–	–	–	–	–	–	–	S	P	S
5.1.3.9 Private access to personal data	P	S	–	–	–	–	–	–	–	S	P	–
5.1.3.10 Non-interfering audio output	P	S	–	–	–	–	–	–	–	S	–	–
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S	–
5.1.3.12 Speaker volume	P	S	–	–	S	–	–	–	–	S	–	S
5.1.3.13 Volume reset	P	S	–	–	S	–	–	–	–	S	–	S
5.1.3.14 Spoken languages	P	S	–	–	–	–	–	–	–	S	–	S
5.1.3.15 Non-visual error identification	P	S	–	–	–	–	–	–	–	S	–	–
5.1.3.16 Receipts, tickets, and transactional outputs	P	S	–	–	–	–	–	–	–	S	–	S
5.1.4 Functionality closed to text enlargement	–	P	–	–	–	–	–	–	–	–	–	–
5.1.5 Visual output for auditory information	–	–	–	P	P	–	–	–	–	S	–	S
5.1.6.1 Operation without keyboard interface (closed functionality)	P	P	–	–	–	S	P	–	–	–	–	S
5.1.6.2 Operation without keyboard interface (Input focus)	P	P	–	–	–	S	P	–	–	–	–	S
5.1.7 Access without speech	–	–	–	–	–	P	–	P	–	–	–	S
5.2 Activation of accessibility features	P	P	P	P	P	–	P	–	–	–	–	–
5.3 Biometrics	P	P	–	P	P	P	P	P	–	–	P	P

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Table 4 (*Continued*)

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 PR	4.2.12 IL
5.4 Preservation of accessibility information during conversion	P	P	–	P	P	–	–	–	–	S	–	P
5.5.1 Means of operation	–	–	–	–	–	–	P	–	–	–	–	–
5.5.2 Operable part discernibility	P	S	–	–	–	–	–	–	–	–	–	–
5.6.1 Tactile or auditory status (belongs to 5.6 locking or toggle controls)	P	P	–	–	–	–	–	–	–	S	–	–
5.6.2 Visual status	–	–	–	P	P	–	P	P	–	S	–	–
5.7 Key repeat	–	–	–	–	–	–	P	–	–	S	–	–
5.8 Double-strike key acceptance	–	–	–	–	–	–	P	P	–	S	–	–
5.9 Simultaneous user actions	–	–	–	–	–	–	P	P	–	S	–	–
5.10 Support to Indian languages	P	P	–	S	S	S	–	–	–	S	–	P
5.11 Indian sign language	–	–	–	P	P	–	P	–	–	–	–	–
5.12 Captioning and sub-titling	–	–	–	P	P	–	–	–	–	–	–	S
6.1 Audio bandwidth for speech (informative recommendation)	–	–	–	–	P	–	–	–	–	–	–	–
6.2.1.1 RTT communication	–	–	–	P	S	S	–	–	–	–	–	P
6.2.1.2 Concurrent voice and text	–	–	–	P	P	S	–	–	–	–	–	P
6.2.2.1 Visually distinguishable display	–	–	–	P	S	S	–	–	–	–	–	–
6.2.2.2 Programmatically determinable send and receive direction	–	–	–	P	S	S	–	–	–	–	–	P
6.2.2.3 Speaker identification	–	–	–	P	S	S	–	–	–	–	–	P
6.2.2.4 Visual indicator of Audio with RTT	–	–	–	P	S	S	–	–	–	–	–	–
6.2.3 Interoperability	–	–	–	P	S	S	–	–	–	–	–	–
6.2.4 Real-time text responsiveness	–	–	–	P	S	S	–	–	–	–	–	–
6.3 Caller ID	P	P	–	–	–	–	–	–	–	S	–	–
6.4 Alternatives to voice-based services	–	–	–	P	P	P	–	–	–	–	–	–
6.5.2 (Video) Resolution	–	–	–	P	P	S	–	–	–	–	–	–
6.5.3 (Video) Frame rate	–	–	–	P	P	S	–	–	–	–	–	–
6.5.4 Synchronization between audio and video	–	–	–	P	P	S	–	–	–	–	–	–
6.5.5 Visual indicator of audio with video	–	–	–	P	P	S	–	–	–	–	–	–

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Table 4 (*Continued*)

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 PR	4.2.12 IL
6.5.6 Speaker identification with video (sign language) communication	–	–	–	P	P	S	–	–	–	–	–	P
6.6 Alternatives to video-based services	P	S	–	P	P	P	–	–	–	–	–	–
7.1.1 Captioning playback	–	–	–	P	P	–	–	–	–	S	–	–
7.1.2 Captioning synchronization	–	–	–	P	P	–	–	–	–	S	–	–
7.1.3 Preservation of captioning	–	–	–	P	P	–	–	–	–	S	–	–
7.1.4 Captions characteristics	–	S	S	P	P	–	–	–	–	S	–	S
7.1.5 Spoken subtitles	P	P	S	–	–	–	–	–	–	S	–	S
7.2.1 Audio description playback	P	P	–	–	–	–	–	–	–	S	–	–
7.2.2 Audio description synchronization	P	P	–	–	–	–	–	–	–	S	–	–
7.2.3 Preservation of audio description	P	P	–	–	–	–	–	–	–	S	–	–
7.3 User controls for captions and audio description	P	P	–	–	–	–	–	–	–	S	–	–
8.1.2 Standard connections	P	P	–	–	–	–	–	–	–	P	–	–
8.1.3 Colour	–	S	P	–	–	–	–	–	–	S	–	–
8.2.1.1 Speech volume range	–	–	–	–	P	–	–	–	–	–	–	–
8.2.1.2 Incremental volume control	–	–	–	–	P	–	–	–	–	–	–	–
8.2.2.1 Fixed-line devices (8.2.2 Magnetic coupling)	–	–	–	–	P	–	–	–	–	–	–	–
8.2.2.2 Wireless communication devices	–	–	–	–	P	–	–	–	–	–	–	–
8.3.0 Stationary ICT, General (informative recommendation)	–	–	–	–	–	–	–	P	–	–	–	–
8.3.1 Forward or side reach	–	–	–	–	–	–	–	P	–	–	–	–
8.3.2.1 Unobstructed high forward reach	–	–	–	–	–	–	–	P	–	–	–	–
8.3.2.2 Unobstructed low forward reach	–	–	–	–	–	–	–	P	–	–	–	–
8.3.2.3.1 Obstructed forward reach - Clear space	–	–	–	–	–	–	–	P	–	–	–	–
8.3.2.3.2 Obstructed (<510 mm) forward reach	–	–	–	–	–	–	–	P	–	–	–	–
8.3.2.3.3 Obstructed (<635 mm) forward reach	–	–	–	–	–	–	–	P	–	–	–	–
8.3.2.4 Knee and Toe clearance width	–	–	–	–	–	–	–	P	–	–	–	–
8.3.2.5 Toe Clearance	–	–	–	–	–	–	–	P	–	–	–	–

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Table 4 (*Continued*)

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 PR	4.2.12 IL
8.3.2.6 Knee Clearance	–	–	–	–	–	–	–	P	–	–	–	–
8.3.3.1 Unobstructed high side reach	–	–	–	–	–	–	–	P	–	–	–	–
8.3.3.2 Unobstructed low side reach	–	–	–	–	–	–	–	P	–	–	–	–
8.3.3.3.1 Obstructed ($\leq$ 255 mm) side reach	–	–	–	–	–	–	–	P	–	–	–	–
8.3.3.3.2 Obstructed ($\leq$ 610 mm) side reach	–	–	–	–	–	–	–	P	–	–	–	–
8.3.4.1 Change in level	–	–	–	–	–	–	–	P	–	–	–	–
8.3.4.2 Clear floor or ground space	–	–	–	–	–	–	–	P	–	–	–	–
8.3.4.3.1 Approach - General	–	–	–	–	–	–	–	P	–	–	–	–
8.3.4.3.2 Forward approach	–	–	–	–	–	–	–	P	–	–	–	–
8.3.4.3.3 Parallel approach	–	–	–	–	–	–	–	P	–	–	–	–
8.3.5 Visibility	–	–	–	–	–	–	–	P	–	–	–	–
8.3.6 Installation instructions	–	–	–	–	–	–	–	P	–	–	–	–
8.4.1 Numeric keys	P	S	–	–	–	–	–	–	–	–	–	–
8.4.2.1 Means of operation of mechanical parts	–	–	–	–	–	–	P	–	–	–	–	–
8.4.2.2 Force of operation of mechanical parts	–	–	–	–	–	–	P	–	–	–	–	–
8.4.3 Keys, tickets and fare cards	P	S	–	–	–	–	–	–	–	–	–	–
8.5 Tactile indication of speech mode	P	–	–	–	–	–	–	–	–	–	–	–
9.1.1.1 Non-text content	P	P	–	–	S	–	–	–	–	S	S	–
9.1.2.1 Audio-only and video-only (pre-recorded)	P	P	–	P	P	–	–	–	–	S	S	S
9.1.2.2 Captions (pre-recorded)	–	–	–	P	P	–	–	–	–	S	–	–
9.1.2.3 Audio description or media alternative (pre-recorded)	P	S	–	–	–	–	–	–	–	S	–	S
9.1.2.4 Captions (live)	–	–	–	P	P	–	–	–	–	S	–	S
9.1.2.5 Audio description (pre-recorded)	P	S	–	–	–	–	–	–	–	S	–	S
9.1.3.1 Info and relationships	P	S	–	–	–	–	–	–	–	S	–	–
9.1.3.2 Meaningful sequence	P	S	–	–	–	–	–	–	–	S	–	–
9.1.3.3 Sensory characteristics	P	P	P	P	P	–	–	–	–	S	–	–

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Table 4 (*Continued*)

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 PR	4.2.12 IL
9.1.3.4 Orientation	–	–	–	–	–	–	P	P	–	S	–	–
9.1.3.5 Identify input purpose	–	P	–	–	–	–	–	–	–	–	–	–
9.1.4.1 Use of colour	P	P	P	–	–	–	–	–	–	S	–	–
9.1.4.2 Audio control	P	–	–	–	P	–	–	–	–	S	–	–
9.1.4.3 Contrast (minimum)	–	P	P	–	–	–	–	–	–	S	–	–
9.1.4.4 Resize text	–	P	–	–	–	–	–	–	–	–	–	–
9.1.4.5 Images of text	–	P	P	–	–	–	–	–	–	S	–	–
9.1.4.10 Reflow	–	P	–	–	–	–	–	–	–	–	–	–
9.1.4.11 Non-text contrast	–	P	P	–	–	–	–	–	–	S	–	–
9.1.4.12 Text spacing	–	P	–	–	–	–	–	–	–	P	–	–
9.1.4.13 Content on hover or focus	–	P	–	–	–	–	–	–	–	P	–	–
9.2.1.1 Keyboard	P	P	–	–	–	S	P	–	–	–	–	–
9.2.1.2 No keyboard trap	P	P	–	–	–	S	P	–	–	–	–	–
9.2.1.4 Character key shortcuts	–	–	–	–	–	–	P	P	–	S	–	–
9.2.2.1 Timing adjustable	P	P	–	P	P	–	P	–	–	P	–	–
9.2.2.2 Pause, stop, hide	P	P	–	P	P	–	P	–	–	P	–	–
9.2.3.1 Three flashes or below threshold	–	–	–	–	–	–	–	–	P	–	–	–
9.2.4.1 Bypass blocks	P	P	–	–	–	S	P	–	–	P	–	–
9.2.4.2 Page titled	P	P	–	–	–	–	P	–	–	P	–	–
9.2.4.3 Focus order	P	P	–	–	–	–	P	–	–	P	–	–
9.2.4.4 Link purpose (in context)	P	P	–	–	–	S	P	–	–	P	–	–
9.2.4.5 Multiple ways	P	P	–	–	–	S	P	–	–	P	–	–
9.2.4.6 Headings and labels	P	P	–	S	–	S	P	–	–	P	–	–
9.2.4.7 Focus visible	P	P	–	–	–	S	P	–	–	P	–	–
9.2.5.1 Pointer gestures	–	–	–	–	–	–	P	P	–	P	–	–
9.2.5.2 Pointer cancellation	–	P	–	–	–	–	P	P	–	P	–	–
9.2.5.3 Label in name	–	–	–	–	–	–	P	P	–	S	–	–

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Table 4 (*Continued*)

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 PR	4.2.12 IL
9.2.5.4 Motion actuation	S	S	–	–	–	–	P	P	–	S	–	–
9.3.1.1 Language of page	P	S	–	S	S	–	–	–	–	S	–	P
9.3.1.2 Language of parts	P	S	–	S	S	–	–	–	–	S	–	P
9.3.2.1 On focus	P	P	–	–	–	–	P	–	–	P	–	–
9.3.2.2 On Input	P	P	–	–	–	–	P	–	–	P	–	–
9.3.2.3 Consistent navigation	P	P	–	–	–	–	–	–	–	P	–	–
9.3.2.4 Consistent identification	S	P	–	–	–	–	–	–	–	P	–	–
9.3.3.1 Error identification	P	P	P	–	–	–	–	–	–	P	–	S
9.3.3.2 Labels or instructions	P	P	–	–	–	S	S	–	–	P	–	–
9.3.3.3 Error suggestion	P	P	–	–	–	S	S	–	–	P	–	S
9.3.3.4 Error prevention (legal, financial, data)	P	P	–	–	–	–	S	–	–	P	–	P
9.4.1.1 Parsing	P	S	–	–	–	–	–	–	–	–	–	S
9.4.1.2 Name, role, value	P	P	–	–	–	–	S	–	–	–	–	S
9.4.1.3 Status messages	P	P	P	P	P	S	P	P	P	P	–	S
9.6 WCAG Conformance requirements	P	P	P	P	P	S	P	P	P	P	S	P
10.1.1.1 Non-text content	P	P	–	P	S	–	–	–	–	S	S	P
10.1.2.1 Audio-only and video-only (pre-recorded)	P	P	–	P	P	–	–	–	–	S	–	–
10.1.2.2 Captions (pre-recorded)	–	–	–	P	P	–	–	–	–	S	–	S
10.1.2.3 Audio description or media alternative (pre-recorded)	P	S	–	P	–	–	–	–	–	S	–	S
10.1.2.4 Captions (live)	–	–	–	P	P	–	–	–	–	S	–	P
10.1.2.5 Audio description (pre-recorded)	P	S	–	–	–	–	–	–	–	S	–	S
10.1.3.1 Info and relationships	P	S	–	–	–	–	–	–	–	S	–	–
10.1.3.2 Meaningful sequence	P	S	–	–	–	–	–	–	–	S	–	–
10.1.3.3 Sensory characteristics	P	P	P	P	P	–	–	–	–	S	–	S
10.1.3.4 Orientation	–	–	–	–	–	–	P	P	–	S	–	–
10.1.3.5 Identify input purpose	–	P	–	–	–	–	–	–	–	–	–	–

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Table 4 (*Continued*)

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 PR	4.2.12 IL
10.1.4.1 Use of colour	P	P	P	–	–	–	–	–	–	S	–	–
10.1.4.2 Audio control	P	–	–	–	P	–	–	–	–	S	–	–
10.1.4.3 Contrast (minimum)	–	P	P	–	–	–	–	–	–	S	–	–
10.1.4.4 Resize text	–	P	–	–	–	–	–	–	–	–	–	–
10.1.4.5 Images of text	–	P	P	–	–	–	–	–	–	S	–	–
10.1.4.10 Reflow	–	P	–	–		–	–	–	–	–	–	–
10.1.4.11 Non-text contrast	–	P	P	–	–	–	–	–	–	S	–	–
10.1.4.12 Text spacing	–	P	–	–	–	–	–	–	–	P	–	P
10.1.4.13 Content on hover or focus	–	P	–	–	–	–	–	–	–	P	–	–
10.2.1.1 Keyboard	P	P	–	–	–	S	P	–	–	–	–	P
10.2.1.2 No keyboard trap	P	P	–	–	–	S	P	–	–	–	–	S
10.2.1.4 Character key shortcuts	–	–	–	–	–	–	P	P	–	S	–	S
10.2.2.1 Timing adjustable	P	P	–	P	P	–	P	–	–	P	–	–
10.2.2.2 Pause, stop, hide	P	P	–	P	P	–	P	–	–	P	–	–
10.2.3.1 Three flashes or below threshold	–	–	–	–	–	–	–	–	P	–	–	–
10.2.4.2 Document titled	P	P	–	–	–	–	P	–	–	P	–	–
10.2.4.3 Focus order	P	P	–	–	–	–	P	–	–	P	–	–
10.2.4.4 Link purpose (in context)	P	P	–	–	–	S	P	–	–	P	–	–
10.2.4.6 Headings and labels	P	P	–	S	–	S	P	–	–	P	–	–
10.2.4.7 Focus visible	P	P	–	–	–	S	P	–	–	P	–	–
10.2.5.1 Pointer gestures	–	–	–	–	–	–	P	P	–	P	–	–
10.2.5.2 Pointer cancellation	–	P	–	–	–	–	P	P	–	P	–	–
10.2.5.3 Label in name	–	–	–	–	–	–	P	P	–	P	–	–
10.2.5.4 Motion actuation	S	S	–	–	–	–	P	P	–	S	–	–
10.3.1.1 Language of page	P	S	–	S	S	–	–	–	–	S	–	P
10.3.1.2 Language of parts	P	S	–	S	S	–	–	–	–	S	–	P

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Table 4 (*Continued*)

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 PR	4.2.12 IL
10.3.2.1 On focus	P	P	–	–	–	–	P	–	–	P	–	–
10.3.2.2 On input	P	P	–	–	–	–	P	–	–	P	–	–
10.3.3.1 Error identification	P	P	P	–	–	–	–	–	–	P	–	–
10.3.3.2 Labels or instructions	P	P	–	–	–	S	S	–	–	P	–	–
10.3.3.3 Error suggestion	P	P	–	–	–	S	S	–	–	P	–	S
10.3.3.4 Error prevention (legal, financial, data)	P	P	–	–	–	–	S	–	–	P	–	P
10.4.1.1 Parsing	P	S	–	–	–	–	–	–	–	–	–	S
10.4.1.2 Name, role, value	P	P	–	–	–	–	S	–	–	–	–	S
10.4.1.3 Status messages	P	P	P	P	P	P	P	P	P	P	–	P
10.5 Caption positioning	–	S	–	P	P	–	–	–	–	S	–	–
10.6 Audio description timing	P	–	–	–	S	–	–	–	–	S	S	–
11.1.1.1.1 non-text content (open functionality)	P	P	–	P	S	–	–	–	–	S	S	S
11.1.1.1.2 non-text content (closed functionality)	P	P	–	P	S	–	–	–	–	S	S	S
11.1.2.1.1 Audio-only and video-only (pre-recorded - open functionality)	P	P	–	P	P	–	–	–	–	S	–	S
11.1.2.1.2.1 Pre-recorded audio-only (closed functionality)	–	–	–	P	P	–	–	–	–	S	–	S
11.1.2.1.2.2 Pre-recorded video-only (closed functionality)	P	S	–	–	–	–	–	–	–	S	–	S
11.1.2.2 Captions (pre-recorded)	–	–	–	P	P	–	–	–	–	S	–	S
11.1.2.3.1 Audio description or media alternative (pre-recorded - open functionality)	P	S	–	–	–	–	–	–	–	S	–	S
11.1.2.3.2 Audio description or media alternative (pre-recorded - closed functionality)	P	S	–	–	–	–	–	–	–	S	–	S
11.1.2.4 Captions (live)	–	–	–	P	P	–	–	–	–	S	–	P
11.1.2.5 Audio description (pre-recorded)	P	S	–	–	–	–	–	–	–	S	–	P
11.1.3.1.1 Info and relationships (open functionality)	P	S	–	–	–	–	–	–	–	S	–	–
11.1.3.1.2 Info and relationships (closed functionality)	P	S	–	–	–	–	–	–	–	S	–	–
11.1.3.2.1 Meaningful sequence (open functionality)	P	S	–	–	–	–	–	–	–	S	–	–
11.1.3.2.2 Meaningful sequence (closed functionality)	P	S	–	–	–	–	–	–	–	S	–	–

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Table 4 (*Continued*)

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 PR	4.2.12 IL
11.1.3.3 Sensory characteristics	P	P	P	P	P	–	–	–	–	S	–	–
11.1.3.4 Orientation	–	–	–	–	–	–	P	P	–	S	–	–
11.1.3.5.1 Identify input purpose (open functionality)	–	P	–	–	–	–	–	–	–	–	–	–
11.1.3.5.2 Identify input purpose (closed functionality)	–	P	–	–	–	–	–	–	–	–	–	–
11.1.4.1 Use of colour	P	P	P	–	–	–	–	–	–	S	–	–
11.1.4.2 Audio control	P	–	–	–	P	–	–	–	–	S	–	–
11.1.4.3 Contrast (minimum)	–	P	P	–	–	–	–	–	–	S	–	–
11.1.4.4.1 Resize text (open functionality)	–	P	–	–	–	–	–	–	–	–	–	–
11.1.4.4.2 Resize text (closed functionality)	–	P	–	–	–	–	–	–	–	–	–	–
11.1.4.5.1 Images of text (open functionality)	–	P	P	–	–	–	–	–	–	S	–	–
11.1.4.5.2 Images of text (closed functionality)	–	–	–	–	–	–	–	–	–	–	–	–
11.1.4.10 Reflow	–	P	–	–	–	–	–	–	–	–	–	–
11.1.4.11 Non-text contrast	–	P	P	–	–	–	–	–	–	S	–	–
11.1.4.12 Text spacing	–	P	–	–	–	–	–	–	–	P	–	S
11.1.4.13 Content on hover or focus	–	P	–	–	–	–	–	–	–	P	–	–
11.2.1.1.1 Keyboard (open functionality)	P	P	–	–	–	S	P	–	–	–	–	P
11.2.1.1.2 Keyboard (closed functionality)	P	P	–	–	–	S	P	–	–	–	–	P
11.2.1.2 No keyboard trap	P	P	–	–	–	S	P	–	–	–	–	–
11.2.1.4.1 Character key shortcuts (open functionality)	–	–	–	–	–	–	P	P	–	S	–	P
11.2.1.4.2 Character key shortcuts (closed functionality)	–	–	–	–	–	–	P	P	–	S	–	P
11.2.2.1 Timing adjustable	P	P	–	–	P	–	P	–	–	P	–	–
11.2.2.2 Pause, stop, hide	P	P	–	P	P	–	P	–	–	P	–	–
11.2.3.1 Three flashes or below threshold	–	–	–	–	–	–	–	–	P	–	–	–
11.2.4.3 Focus order	P	P	–	–	–	–	P	–	–	P	–	–
11.2.4.4 Link purpose (in context)	P	P	–	–	–	S	P	–	–	P	–	–
11.2.4.6 Headings and labels	P	P	–	S	–	S	P	–	–	P	–	–

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Table 4 (*Continued*)

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 PR	4.2.12 IL
11.2.4.7 Focus visible	P	P	–	–	–	S	P	–	–	P	–	–
11.2.5.1 Pointer gestures	–	–	–	–	–	–	P	P	–	P	–	–
11.2.5.2 Pointer cancellation	–	P	–	–	–	–	P	P	–	P	–	–
11.2.5.3.1 Label in name (open functionality)	–	–	–	–	–	–	P	P	–	S	–	–
11.2.5.3.2 Label in name (closed functionality)	–	–	–	–	–	–	P	P	–	S	–	–
11.2.5.4 Motion actuation	S	S	–	–	–	–	P	P	–	S	–	–
11.3.1.1.1 Language of software (open functionality)	P	S	–	S	S	–	–	–	–	S	–	S
11.3.1.1.2 Language of software (closed functionality)	P	S	–	S	S	–	–	–	–	S	–	S
11.3.2.1 On focus	P	P	–	–	–	–	P	–	–	P	–	–
11.3.2.2 On input	P	P	–	–	–	–	P	–	–	P	–	–
11.3.3.1.1 Error identification (open functionality)	P	P	P	–	–	–	–	–	–	P	–	S
11.3.3.1.2 Error Identification (closed functionality)	P	P	P	–	–	–	–	–	–	P	–	S
11.3.3.2 Labels or instructions	P	P	–	–	–	S	S	–	–	P	–	S
11.3.3.3 Error suggestion	P	P	–	–	–	S	S	–	–	P	–	S
11.3.3.4 Error prevention (legal, financial, data)	P	P	–	–	–	–	S	–	–	P	–	P
11.4.1.1.1 Parsing (open functionality)	P	S	–	–	–	–	–	–	–	–	–	S
11.4.1.1.2 Parsing (closed functionality)	–	–	–	–	–	–	–	–	–	–	–	S
11.4.1.2.1 Name, role, value (open functionality)	P	P	–	–	–	–	S	–	–	–	–	S
11.4.1.2.2 Name, role, value (closed functionality)	–	–	–	–	–	–	–	–	–	–	–	–
11.4.1.3.1 Status messages (open functionality)	P	P	P	P	P	P	P	P	P	P	–	P
11.5.1 Closed functionality	–	–	–	–	–	–	–	–	–	–	–	–
11.5.2.1 Platform accessibility service support for software that provides a user interface	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.2 Platform accessibility service support for assistive technologies	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.3 Use of accessibility services	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.4 Assistive technology	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.5 Object information	P	P	–	–	–	–	P	–	–	S	–	–

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Table 4 (*Continued*)

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 PR	4.2.12 IL
11.5.2.6 Row, column, and headers	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.7 Values	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.8 Label relationships	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.9 Parent-child relationships	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.10 Text	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.11 List of available actions	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.12 Execution of available actions	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.13 Tracking of focus and selection attributes	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.14 Modification of focus and selection attributes	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.15 Change notification	P	P	–	–	–	–	P	–	–	S	–	S
11.5.2.16 Modifications of states and properties	P	P	–	–	–	–	P	–	–	S	–	–
11.5.2.17 Modifications of values and text	P	P	–	–	–	–	P	–	–	S	–	–
11.6.1 User control of accessibility features	P	P	P	P	P	–	P	–	–	–	–	S
11.6.2 No disruption of accessibility features	P	P	P	P	P	–	P	–	–	–	–	–
11.7 User preferences	–	P	P	–	–	–	–	–	–	S	–	P
11.8.1 Content technology	P	P	P	P	P	S	P	P	P	P	S	–
11.8.2 Accessible content creation	P	P	P	P	P	S	P	P	P	P	S	P
11.8.3 Preservation of accessibility information in transformations	P	P	P	P	P	S	P	P	P	P	S	–
11.8.4 Repair assistance	P	P	P	P	P	S	P	P	P	P	S	–
11.8.5 Templates	P	P	P	P	P	S	P	P	P	P	S	–
12.1.1 Accessibility and compatibility features	P	P	P	P	P	–	P	–	–	S	–	–
12.1.2 Accessible documentation	P	P	P	P	P	S	P	P	P	P	S	P
12.2.2 Information on accessibility and compatibility features	P	P	P	P	P	–	P	–	–	S	–	P
12.2.3 Effective communication	–	–	–	P	P	P	–	–	–	S	–	P
12.2.4 Accessible documentation	P	P	P	P	P	S	P	P	P	P	S	P

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Table 4 (*Concluded*)

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 PR	4.2.12 IL
13.1.2 Text relay services	–	–	–	P	P	P	–	–	–	S	–	P
13.1.3 Sign relay services	–	–	–	P	P	P	–	–	–	–	–	S
13.1.4 Lip-reading relay services	–	–	–	P	P	P	–	–	–	–	–	S
13.1.5 Captioned telephony services	–	–	–	P	P	P	–	–	–	–	–	S
13.1.6 Speech to speech relay services	–	–	–	–	–	–	–	–	–	P	–	P
13.2 Access to relay services	–	–	–	P	P	P	–	–	–	S	–	S
13.3 Access to emergency services	–	–	–	P	P	P	–	–	–	S	–	P

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B-2 INTERPRETATION OF TABLE 4

B.2.0 *General*

Table 4 illustrates the impact a specific accessibility issue might have on different users. It does this by mapping the requirements in this standard with the functional performance statements in **4**. A requirement can be Primary (P) or Secondary (S).

The technical requirements are listed in a vertical column and the functional performance statements horizontally.

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P

The table indicates which functional performance statements, and corresponding user needs, are covered by each requirement.

B-2.1 *Example*

B-2.1.1 *Step 1*

For requirement **5.1.3.11**, which relates to the possibility of changing the volume when the user is listening in a private headset, the table can be read like this:

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S

The requirement for private listening volume has a "P" for primary support in the column "WV", which stands for "without vision".

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S

This means that private listening volume supports the functional performance statements for users who cannot see. In other words, the possibility for the user to control the volume when listening via a private headset is necessary for blind users.

B-2.1.2 *Step 2*

The third column shows that, for users with low vision, the possibility to control the volume when listening *via* a private headset is not as necessary as for blind users, it has an S for Secondary, where the first column had a P for Primary.

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S

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Secondary support means that some users in this group may use the accessibility feature in specific situations.

B-2.1.3 *Step 3*

In this way it is possible to assess the impact on functional performance statements if a particular requirement is not met.

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S

The fourth column considers users who are colour blind; the requirement on private listening volume is not marked at all. Of course, the possibility of changing the volume when listening in private headset is nice to have for all users, no matter their ability to distinguish between colours, but the listening volume does not compensate for the colour blindness.

B-.2.1.4 *Step 4*

The table can also be read the other way around:

Since blind users cannot see the screen, they need an alternative way to use the interface. If this alternative is audio *via* private headset, blind users need the possibility to change the volume.

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S

Some users who can see, but not well, need or prefer to use audio as an alternative way to use the interface. If this alternative is audio via private headset, some low vision users will benefit from the possibility to change the volume.

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S

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ANNEX C

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ANNEX D

(*Informative*)

(*Foreword*)

FURTHER RESOURCES FOR COGNITIVE ACCESSIBILITY

It is evident that people with limited cognitive, language and learning abilities have diverse accessibility needs and preferences and that there is a need for further guidelines and standards. Research in this area is ongoing.

Relevant standardisation work is currently being undertaken by the W3C Web Accessibility Initiative (WAI). WAI are working to improve the requirements and technical guidance for developers, to better address Web accessibility for people with limited cognitive, language and learning abilities. Current W3C activity in this area can be found at https://www.w3.org/WAI/cognitive/.

ANNEX E

(*Informative*)

(*Foreword*)

GUIDANCE FOR USERS OF THIS STANDARD

E-1 INTRODUCTION

This explanatory annex is designed to enable developers, industry, end users, procurement agencies – public and private, testing and certifying agencies to understand the scope and context of the standard and make best use of it.

This standard contains a wide range of requirements to cover a variety of ICT products, services and solutions. There are requirements on functional, physical and software characteristics. For example, it is necessary to understand which requirements are relevant for a specific product or service in a specific situation or context.

In a way, this standard is an efficient and consistent aggregator of functional performance statements to reflect the needs of people with different disabilities using ICT; and technical requirements that state how different components of ICT ecosystem – telecom, hardware, software, web, non-web, documents and other such, have to meet these. Many individual parts may have been covered in various standards or addressed in different forums. This standard does not aim to contradict any of them but to provide an up-to-date single point source for accessibility requirements as far as ICT is concerned.

The extensive cross-referencing to International and Indian standards, guidelines, rules, policies etc. given in this standard aims to harmonize all of them and is consistent with W3C/WAI/WCAG 2.1 and EN 301 549 V3.2.1.

Those who adhere to any of the existing or upcoming International and Indian standards can easily relate to this standard. If they need further guidance and have suggestions on how to ensure compliance to this standard may refer to the Part 2 of this standard dealing with Determination of Conformance.

As will be seen in Part 2 of this standard, testing for accessibility requirements does not always result in a yes or no. It is important to understand the requirements and alternatives available for different end-users. All these issues will be further elaborated in Part 2.

E-2 OVERVIEW

This Standard consists of thirteen sections (equivalent to chapters in a book) and five annexures.

Clauses 0 to 3 contain background information, scope of the standard, references, definitions of terminology and explanations of abbreviations. These clauses have a lot of valuable information, but it can be hard to read the standard from A to Z.

Clause 4 covers functional performance statements, which are directly related to end-user needs. The clause explains what functionality is needed to enable end users to locate, identify and operate functions in technology, no matter their abilities. This is an important section where you can learn about what challenges accessibility requirements aim to solve.

Clauses 5 to 13 are the actual technical requirements. Most readers start here, but clause **4** can possibly be a better place to begin, to really understand how to use the detailed technical parts.

The technical requirements cover many different kinds of ICT divided into separate sections, but it is always a

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good idea to have a look at clause **5**, since this is where the general requirements are.

Clauses 9, 10 and 11 are the ones that are most relevant to IT software industry and IT use in government, offices and homes – they cover web, non-web documents and software, including mobile and web apps.

Annex B describes how the functional performance statements of clause **4** relate to the technical requirements in clauses **5** to **13**. This is a useful tool that will, for example, help you to use the standard in finalizing requirements at the time of procurement to identify the impact that specific requirements have on end users when comparing proposals.

Annex D provides a link to further resources for cognitive accessibility.

E-3 CLAUSE 4

Clause **4** is in a sense the heart of the standard. The end users, with their different needs, are the reason accessibility matters. The user needs behind each functional performance statement are also the reason for each of the requirements in this standard.

Clause **4** does not include any requirements in itself, just descriptions. This may make it seem less important but, in reality, it is the other way around. The aim of the whole standard is to ensure that end users with the varying abilities described in this clause can use products and services.

In this clause, eleven functional performance statements based on variations of impairments are described, plus privacy and support for Indian languages. The impairments can be permanent, temporary or situational. End users with multiple impairments might need specific combinations of accessibility solutions. Therefore, it is necessary to consider all different functional performance statements as well as a combination of them.

The concept behind the standard is to let technology help compensate the challenges that end users can have. The end user can look at accessibility as alternative ways to use technology. For example: if the end user cannot see, technology can provide sound. If the end user cannot hear, the technology can provide text. This is what clause **4** is describing for each user group, in detail.

Clause **4** help the used with a better understanding of the logic of the requirements in the standard.

E-4 HOW TO USE THE STANDARD

E-4.1 Self Scoping Requirements

The requirements in the present standard are called self-scoping. This means that they consist of two parts; the first part is a precondition for the second part, which holds the actual requirement. If the first part is true, you need to meet the second part of the requirement. If the first part is not true, this means that the requirement is not applicable.

For example, a requirement saying "Where ICT hardware has speech output, it shall provide [...]" can be met in two ways:

If your product or service provides speech, you need to fulfil the second part of the requirement.

If your product or service does not provide speech, you do not need to think about the second part of the requirement. The requirement is not applicable.

To meet the standard means that all applicable requirements in the standard are met.

To get an overview of the requirements in scope of your product or service, the user can focus on the requirements with the same scoping statements. There are online tools that can help you filter out requirements that are automatically met.

E-4.2 Connection between Requirements and Functional Performance Statements

The table in Annex B helps the user to understand the connection between the requirements and the functional performance statements. There is an instruction on how to use the table under **B-2**.

Before making a decision about the most suitable solution, you also need to think about the context. Here are some examples:

a) In what situation is the solution going to be used?

b) Which failed requirements are possible to compensate with other alternatives, like for example a service desk?

c) What would it cost to solve an issue with an alternative like that?

d) Will the failed requirements be possible to fix in the next version of the solution?

Suppliers may show how their product or service addresses the functional performance statements in clause 4 in addition to meeting the requirements in **5** to **13**. This can help you choose which product or service is most suitable.

E-5 VOID

E-6 ANNEX D: FURTHER RESOURCES FOR COGNITIVE ACCESSIBILITY

Annex D provides a link to W3C resources that can be used as guidance to improve the inclusion of accessibility for people with limited cognitive, language and learning abilities when using ICT products and services.

ANNEX F

(*Foreword*)

COMMITTEE COMPOSITION

Active Assisted Living Sectional Committee, LITD 35

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[b.4] The National Policy for Persons with Disabilities, 2006

[b.5] National Policy on Universal Electronic Accessibility, 2013, MeitY

[b.6] TRAI recommendations on Making ICT accessible for Persons with Disabilities

[b.7] National Digital Communications Policy, 2018

[b.8] Need for Bank Branches / ATMs to be made accessible to persons with disabilities, 09-Nov-17, RBI

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IS 17802 (Part 2) : 2022

आइसीटी उत्पादों और सेवाओं के लिए अभिगम्यता

भाग 2 अनुरूपता का निर्धारण

Accessibility for the ICT Products and Services

Part 2 Determination of Conformance

ICS 35.240.80, 11.180

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Active Assisted Living Sectional Committee, LITD 35

FOREWORD

This Indian Standard (Part 2) was adopted by the Bureau of Indian Standards, after the draft is finalized by the Active Assisted Living Sectional Committee, had been approved by the Electronics and Information Technology Division Council of BIS is obtained.

This Indian Standard is published in two parts. The other part in the series is:

> Part 1 Requirements

The development of the Indian standard on Accessibility for ICT products and services was initiated by Ministry of Electronics and Information Technology (MeitY) under the 'Knowledge and Resource Centre for Accessibility in ICT (KAI) Project' led by Centre for Development of Advanced Computing (CDAC). During the preparation of this standard, several consultations, meetings and discussions were held with a wide cross section of stakeholders Ministry of Electronics and Information Technology (MeitY), Department of Empowerment of Persons with Disabilities (DEPwD), Ministry of Housing and Urban Affairs (MoHUA) and Department of Telecommunications (DoT). This Indian Standard is developed to provide a set of accessibility requirements that specify how to make content accessible, primarily for the people with disabilities and also for all the end users.

The present Indian Standard (Part 2) is the technical adoption of the European Standard EN 301 549 v 3.2.1 "Accessibility requirements for ICT products and services" developed by CEN, CENELEC and ETSI. Modifications have been made to adapt it to India and are limited to referencing the relevant regulatory context (*Rights of Persons with Disabilities Act*, 2016) and the official languages of India. The technical coverage is otherwise identical.

This Indian Standard (Part 2) is to be read in conjunction with the Part 1 of this standard to understand the functional performance statements and their relation with the specific accessibility requirements for various functions of ICT Products and Services.

The mapping of real-world ICT products and services with requirement clauses mentioned in part1 of this standard is given in Annex A (*informative*).

A guidance document for Accessibility conformity report is given in Annex B (*informative*).

The Composition of the panel, LITD 35/P1 and the sectional committee, LITD 35 responsible for the formulation of this standard is given at Annex C.

CONTENTS

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Indian Standard

ACCESSIBILITY FOR
THE ICT PRODUCTS AND SERVICES
PART 2 DETERMINATION OF CONFORMANCE

1 SCOPE

This Indian Standard (Part 2) specifies the test procedures and evaluation methodology for the accessibility requirements of ICT products and services mentioned in Part 1 of this standard. This standard (Part 2) also gives guidance in preparing the accessibility conformance report for ICT products and services against each requirement.

2 REFERENCES

The standards or other publications given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards or other publications are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards or other publications.

IS/ISO/IEC/ Other Publications	*Title*
17802 (Part 1) : 2021	Accessibility for the ICT Products and services: Part 1 Requirements
EN 301 549 v 3.2.1	Accessibility requirements for ICT products and services, March, 2021
W3C/WAI/WCAG 2.1	Web Content Accessibility Guidelines, 2018
ISO/IEC 40500 : 2012	Information technology — W3C web content accessibility guidelines (WCAG) 2.0
WCAG 2.0	WCAG 2.0, Understanding Conformance
CEN/CLC/ETSI TR 101 552	Guidance for the application of conformity assessment to accessibility requirements for public procurement of ICT products and services in Europe, March, 2014
ISO/IEC 10646 : 2020	Information technology — Universal coded character set (UCS)

IS/ISO/IEC/ Other Publications	*Title*
16333 (Part 3) : 2017	Mobile phone handsets: Part 3 Indian language support for mobile phone handsets — Specific requirements (*first revision*)
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16350 : 2016	Indian language Inputting and Keyboard Standard computers, "Enhanced INSCRIPT Keyboard Layouts

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IS/ISO/IEC/ Other Publications	Title
Recommendation ITU-T V.18 (2000)	Operational and interworking requirements for DCEs operating in the text telephone mode
IETF RFC 4103 (2005):	RTP Payload for Text Conversation
ETSI TS 126 114	Universal Mobile Telecommunications System (UMTS); LTE; IP Multimedia Subsystem (IMS); Multimedia telephony; Media handling and interaction (3GPP TS 26.114)
ETSI EG 201 013	Human Factors (HF); Definitions, abbreviations and symbols
ETSI TS 122 173	Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; IPMultimedia Core Network Subsystem (IMS) Multimedia Telephony Service and supplementary services; Stage 1 (3GPP TS 22.173)
ETSI TS 134 229	Universal Mobile Telecommunications System (UMTS); LTE; Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification (3GPP TS 34.229)
IETF RFC 4103	RTP Payload for Text Conversation
ANSI/TIA-4965	Receive volume control requirements for digital and analogue wireline terminals
TIA-1083-A (2010)	Telecommunication s ; Telephone Terminal equipment; Handset magnetic measurement procedures and performance requirements
ETSI ETS 300 381 (Edition 1) (December 1994)	Telephony for hearing impaired people; Inductive coupling of telephone earphones to hearing aids

IS/ISO/IEC/ Other Publications	Title
ETSI ES 200 381-2 (V1.1.1) (October 2012)	Telephony for hearing impaired people; Inductive coupling of telephone earphones to hearing aids; Part 2: Cellular speech terminals
ANSI/IEEE C63.19 (2011)	American National Standard Method of Measurement of Compatibility between Wireless Communication Devices and Hearing Aids
ETSI ES 200 381-1 (V1.2.1) (October 2012)	Telephony for hearing impaired people; Inductive coupling of telephone earphones to hearing aids; Part 1: Fixed-line speech terminals

Voluntary Product Accessibility Template® (VPAT®) EN 301 549 Edition V2.4

3 TERMINOLOGY AND ABBREVIATIONS

3.1 Terminology

For the purpose of this standard, the definitions given in IS 17802 (Part 1) : 2021, WCAG 2.1, ETSI EG 201 013 and the following shall apply.

3.1.1 *Accessible Design* — Design focused on principles of extending standard design to persons with some type of performance limitation to maximize the number of potential customers who can readily use a product, building or service, which may be achieved by:

a) designing products, services and environments that are readily usable by most users without any modification;

b) making products or services adaptable to different users (adapting user interfaces); and

c) having standardized interfaces to be compatible with special products for persons with disabilities.

NOTES

1 Terms, such as design for all, barrier-free design, inclusive design and transgenerational design are used similarly but in different contexts.

2 Accessible design is a subset of universal design, where products and environments are usable by all persons, to the greatest extent possible, without the need for adaptation or specialized design. [Source: ISO/IEC Guide 71 : 2001; CEN/CENELEC Guide 6:2002, 3.2] (*see* [**26**] and [**1**])

3.1.2 *Accessibility Supported* — Supported by users' assistive technologies as well as the accessibility features in browsers and other user agents.

3.1.3 *Common Web Pages* — Web pages and web page states that are relevant to the entire website. This

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includes the homepage, login page, and other entry pages, and, where applicable, the sitemap, contacts page, site help, legal information, and similar web pages that are typically linked from all other web pages (usually from the header, footer, or navigation menu of a web page).

3.1.4 *Complete Processes* — When a web page is one of a series of web pages presenting a process (that is, a sequence of steps that need to be completed in order to accomplish an activity), all web pages in the process conform at the specified level or better (conformance is not possible at a particular level if any page in the process does not conform at that level or better).

3.1.5 *Captcha* — Initialism for "Completely Automated Public Turing test to tell Computers and Humans Apart".

3.1.6 Conformance — Satisfying all the requirements of a given standard, guideline or specification.

3.1.7 *Conforming Alternate Version* — Version that:

a) conforms at the designated level;

b) provides all of the same information and Functionality in the same human language;

c) is as up to date as the non-conforming content; and

d) for which at least one of the following is true:

1) the conforming version can be reached from the non-conforming page via an accessibility-supported mechanism,

2) the non-conforming version can only be reached from the conforming version, or

3) the non-conforming version can only be reached from a conforming page that also provides a mechanism to reach the conforming version.

3.1.8 *Conformity Assessment* — Demonstration that specified requirements relating to a product, process, system, person or body are fulfilled [source: ISO/IEC 17000 : 2004).

3.1.9 *Context-sensitive Help* — Help text that provides information related to the function currently being performed.

3.1.10 *Contrast Ratio* — (L1 + 0.05)/(L2 + 0.05), where L1 is the relative luminance of the lighter of the colours, and L2 is the relative luminance of the darker of the colours.

3.1.11 *Correct Reading Sequence* — Any sequence where words and paragraphs are presented in an order that does not change the meaning of the content.

3.1.12 *Essential* — If removed, would fundamentally change the information or functionality of the content, and information and functionality cannot be achieved in another way that would conform.

3.1.13 *Essential Functionality* — Functionality of a website that, if removed, fundamentally changes the use or purpose of the website for users. This includes information that users of a website refer to and tasks that they carry out to perform this functionality.

3.1.14 *Functionality* — Processes and outcomes achievable through user action.

3.1.15 *Informative* — For information purposes and not required for conformance.

3.1.16 *Input Error* — Information provided by the user that is not accepted.

3.1.17 *Keyboard Interface* — Interface used by software to obtain keystroke input.

3.1.18 *Keyboard Shortcut* — Alternative means of triggering an action by the pressing of one or more keys.

3.1.19 *Label* — Text or other component with a text alternative that is presented to a user to identify a component within web content.

3.1.20 *Large Scale (Text)* — With at least 18 point or 14 point bold or font size that would yield equivalent size for Indian language [Chinese, Japanese and Korean (CJK)] fonts.

3.1.21 *Link Purpose* — Nature of the result obtained by activating a hyperlink.

3.1.22 *Live* — Information captured from a real-world event and transmitted to the receiver with no more than a broadcast delay.

3.1.23 *Media Alternative for Text* — Media that presents no more information than is already presented in text (directly or via text alternatives).

3.1.24 *Navigated Sequentially* — Navigated in the order defined for advancing focus (from one element to the next) using a keyboard interface.

3.1.25 *Non-text Content* — Any content that is not a sequence of characters that can be programmatically determined or where the sequence is not expressing something in human language.

3.1.26 *Normative* — Required for conformance.

3.1.27 *Paused* — Stopped by user request and not resumed until requested by user.

3.1.28 *Pointer Input* — Input device that can target a specific coordinate (or set of coordinates) on a screen, such as a mouse, pen, or touch contact.

3.1.29 *Pre-recorded* — Information that is not live.

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3.1.30 *Process* — Series of user actions where each action is required to complete an activity.

3.1.31 *Programmatically Determined (Programmatically Determinable)* — Determined by software from author-supplied data provided in a way that different user agents, including assistive technologies, can extract and present this information to users in indifferent modalities.

3.1.32 *Programmatically Determined Link Context* — Additional information that can be programmatically determined from relationships with a link, combined with the link text, and presented to users in different modalities.

3.1.33 *Programmatically Set* — Set by software using methods that are supported by user agents, including assistive technologies.

3.1.34 *Pure Decoration* — Serving only an aesthetic purpose, providing no information, and having no functionality.

3.1.35 *Real-time Event* — Event that a) occurs at the same time as the viewing and b) is not completely generated by the content.

3.1.36 *Relationships* — Meaningful associations between distinct pieces of content.

3.1.37 *Relative Luminance* — The relative brightness of any point in a colourspace, normalized to 0 for darkest black and 1 for lightest white.

3.1.38 *Relied Upon (Technologies that are)* — The content would not conform if that technology is turned off or is not supported.

3.1.39 *Role* — Text or number by which software can identify the function of a component within web content.

3.1.40 *Same Functionality* — Same result when used.

3.1.41 *Same Relative Order* — Same position relative to other items.

3.1.42 *Satisfies a Success Criterion* — The success criterion does not evaluate to 'false' when applied to the page.

3.1.43 *Set of Web Pages* — Collection of web pages that share a common purpose and that are created by the same author, group or organization.

3.1.44 *State* — Dynamic property expressing characteristics of a user interface component that may change in response to user action or automated processes.

> States do not affect the nature of the component, but represent data associated with the component

or user interaction possibilities. Examples include focus, hover, select, press, check, visited/unvisited, and expand/collapse.

3.1.45 *Status Message* — Change in content that is not a change of context, and that provides information to the user on the success or results of an action, on the waiting state of an application, on the progress of a process, or on the existence of errors.

3.1.46 *Structure*

a) The way the parts of a web page are organized in relation to each other; and

b) The way a collection of web pages is organized.

3.1.47 *Supplemental Content* — Additional content that illustrates or clarifies the primary content.

3.1.48 *Synchronized Media* — Audio or video synchronized with another format for presenting information and/or with time-based interactive components, unless the media is a media alternative for text that is clearly labelled as such.

3.1.49 *Technology (Web Content)* — Mechanism for encoding instructions to be rendered, played or executed by user agents.

3.1.50 *Templates* — Content patterns that are filled in by authors or the authoring tool to produce web content for end users (for example, document templates, content management templates, presentation themes). Often templates will pre-specify at least some authoring decisions. ATAG 2.0 definition for "templates".

3.1.51 *Text* — Sequence of characters that can be programmatically determined, where the sequence is expressing something in human language.

3.1.52 *Text Alternative* — Text that is programmatically associated with non-text content or referred to from text that is programmatically associated with non-text content. Programmatically associated text is a text whose location can be programmatically determined from the non-text content.

3.1.53 *Unicode* — UNICODE, formally the UNICODE Standard, is an information technology standard for the consistent encoding, representation, and handling of text expressed in most o f the world's writing systems.

3.1.54 *Up-event* — *Platform event that occurs when the trigger stimulus of a pointer is released.*

> The up-event may have different names on different platforms, such as "touchend" or "mouseup".

3.1.55 *Used in an Unusual or Restricted Way* — Words used in such a way that requires users to know exactly which definition to apply in order to understand the content correctly.

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3.1.56 *UserAgent* — Any software that retrieves and presents Web content for users.

3.1.57 *User-controllable — Data that is intended to be accessed by users.*

3.1.58 *User Interface Component* — A part of the content that is perceived by users as a single control for a distinct function.

3.1.59 *User Inactivity* — Any continuous period of time where no user actions occur. The method of tracking will be determined by the web site or application.

3.1.60 *Video* — The technology of moving or sequenced pictures or images.

3.1.61 *Video-only* — A time-based presentation that contains only video (no audio and no interaction).

3.1.62 *Visually Customized* — The font, size, colour, and background can be set.

3.1.63 *Web Page* — A non-embedded resource obtained from a single URI using HTTP plus any other resources that are used in the rendering or intended to be rendered together with it by a user agent.

3.1.64 *Web Page States* — Dynamically generated web pages sometimes provide significantly different content, functionality, and appearance depending on the user, interaction, device, and other parameters. In the context of this methodology, such web page states can be treated as an cillary to web pages (recorded as an additional state of a web page in a web page sample) or as individual web pages.

3.2 Abbreviations and Acronyms

ACR	Accessibility Conformance Report
CEN	European Committee for Standardization
CENELEC	European Committee for Electrotechnical Standardization
EN	European Norm
ETSI	European Telecommunications Standards Institute (France)
ICT	Information and Communication Technology
IEC	International Electrotechnical Commission
ISL	Indian Sign Language
ISO	International Organization for Standardization
PDF	Portable Document Format
TR	Technical Report

VPAT	Voluntary Product Accessibility Template
W3C	World Wide Web Consortium
WAI	Web Accessibility Initiative
WCAG	Web Content Accessibility Guidelines
QVGA	Quarter Video Graphics Array

4 ICT PRODUCTS AND SERVICES

4.1 Type of ICT Products and Services

4.1.1 The ICT market is continuously and rapidly evolving. Furthermore, it is characterized by a great diversity:

a) *ICT consists of many products and services* — Hardware such as desktop or laptop or tablet or smartphone or e-book reader devices for personal use; peripherals such as printers and scanners; kiosks and PoS terminals – including touch-based and contactless, display boards, non-web contents, documents, office software or accounting software or other specialized software; websites and portals other on-line services, mobile apps, support and emergency services.

b) *ICT is developed, produced and sold by a variety of companies* — Product developers, manufacturers, system integrators, service providers, software developers, web designers, retailers, payment system participants etc. Most products and services pass through many links of a value chain before they reach their final design and are delivered to the customer.

c) *Many business models are applied* — Selling off-the-shelf products over the counter, bundling of hardware and services such as cloud-based services, Software as a Service (SaaS), Anything as a Service (XaaS) etc.

4.1.2 Since an ICT product or service is presumed to pass through a number of stages in a value chain and has functions, characteristics and other value added during this process, characteristics and features providing accessibility may be created and added during several stages. Since it is in the supplier's responsibility to demonstrate the fulfilment of given functional accessibility requirements of the complete offered solution, conformity assessment of accessibility should be made at the stage when the final delivery and use happens.

4.1.3 The nature of ICT could be of any one of the following types:

a) Off-the-shelf products;

b) Customized products;

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c) Integrated products or systems;

d) Proprietary software;

e) Open-source software and open standards;

f) Services;

g) Web sites;

h) Cloud-based and distributed application platforms and services (including SaaS and XaaS); and

j) Development of bespoke applications.

4.1.4 A few ICT categories and its set of applicable clauses for conformance are given in Annex A (*Informative*).

4.2 Maturity of the Technology

IS 17802 (Part 1) covers requirements for functions relating to all kinds of ICT products and services; therefore, the conformity assessment of the diverse ICT products and services in the procurement process can be very different. Maturity of the technology can be a factor affecting the procurement of accessible ICT products and services. While mature products (such as computers, web sites, mobile phones) could imply an easier assessment of accessibility, newer products and bespoke applications or those involving innovation or cutting-edge technology (AI/ML, Robotics, NLP, Blockchain, IoT, AR/VR and the like) would generally require more knowledge to be able to carry out an efficient conformity assessment.

5 CONFORMITY IN THE CONTEXT OF ICT ACCESSIBILITY

5.1 Success Criteria - Conformance in Respect of Accessibility as per WCAG 2.1

5.1.1 'Understanding conformance' is clearly stated in WCAG 2.0 and is applicable across the WCAG series, which includes WCAG 2.1. It states that the 'requirements' are the 'success criteria'. As such, to conform to clauses of WCAG 2.1 and to Web, Non-Web documents and software [refer to clasues **9**, **10** and **11** of IS 17802 (Part 1) respectively], one needs to satisfy the success criteria in respect of each clause, wherever stated, as it is. There is no content, non-web document (or) software which violates the success-criteria.

NOTE — This means that if there is no content to which a success criterion applies, the success criterion is satisfied.

5.1.2 Success criteria for each guideline are testable success criteria, provided to allow WCAG 2.0 conformity principles to be used where requirements and conformance testing are necessary such as in design specification, purchasing, regulation, and contractual agreements. In order to meet the needs of different groups and different situations, three levels of conformance are defined in WCAG 2.0: A (lowest), AA, and AAA (highest). (In this standard, though, only level AA has been made applicable for the purpose of conformity).

5.1.3 Success criteria are written as testable criteria for objectively determining if content satisfies them. Testing the success criteria can involve a combination of automated testing and human evaluation. The testing should be able to determine if a success criterion has been satisfied with a high level of confidence. The content should be tested by those who understand how people with different type of disabilities use the web.

5.1.4 Testing and testable in this context refer to functional testing, that is, verifying that the content functions as expected, or in this case, that it satisfies the success criteria. Although content may satisfy all success criteria, the content may not always be usable by people with multiple disabilities. Therefore, usability testing is recommended, in addition to the required functional testing. Usability testing aims to determine how well people can use the content for its intended purpose. It is recommended that users with disabilities be included in test groups when performing usability testing.

5.1.5 There are a number of conditions that must be met for a success criterion to be included at all. These include **5.1.5.1** and **5.1.5.2**.

5.1.5.1 All success criteria must be important access issues for people with disabilities that address problems beyond the usability problems that might be faced by all users. In other words, the access issue must cause a proportionately greater problem for people with disabilities than it causes people without disabilities in order to be considered an accessibility issue (and covered under these accessibility guidelines).

5.1.5.2 In order to accommodate different situations that may require or allow greater levels of accessibility than others, WCAG 2.0 has three levels of conformance and, therefore, three levels of Success Criteria. Accordingly, Success Criteria have one of the respective levels of conformance. This standard specifies normative conformance criteria for Level as AA [IS 17802 (Part 1)]. Conformity to AAA is encouraged, wherever possible.

5.2 Conformance of a Web Page

In order for a web page to conform to WCAG 2.1, all of the following conformance requirements(Success Criteria) must be satisfied. [Source: WCAG 2.1: 2018].

5.2.1 *Full Pages*

Conformance (and conformance level) is for full web page(s) only and cannot be achieved if part of a web page is excluded.

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5.2.2 *Complete Processes*

When a web page is one of a series of web pages presenting a process (that is, a sequence of steps that need to be completed in order to accomplish an activity), all web pages in the process conform to the specified level or better. (Conformance is not possible at a particular level if any page in the process does not conform at that level or better.)

5.2.3 *Only Accessibility-supported Ways of Using Technologies*

Only accessibility-supported ways of using technologies are relied upon to satisfy the success criteria. Any information or functionality that is provided in a way that is not accessibility supported is also available in a way that is accessibility supported. (See understanding accessibility support).

5.2.4 *Non-interference*

If technologies are used in a way that is not accessibility supported, or if they are used in a non-conforming way, then they do not block the ability of users to access the rest of the page. In addition, the web page as a whole continues to meet the conformance requirements under each of the following conditions:

a) when any technology that is not relied upon is turned on in a user agent,

b) when any technology that is not relied upon is turned off in a user agent, and

c) when any technology that is not relied upon is not supported by a user agent.

In addition, the following success criteria apply to all content on the page, including content that is not otherwise relied upon to meet conformance, because failure to meet them could interfere with any use of the page:

1) Audio control;

2) No keyboard trap;

3) Three flashes or below threshold; and

4) Pause, stop, hide.

5.3 Statement of Partial Conformance - Language

An example of partial compliance will be: "statement of partial conformance due to language" may be made when the page does not conform, but would conform if accessibility support existed for (all of) the language(s) used on the page. The form of that statement would be, "This page does not conform, but would conform to WCAG 2.1 at level X if accessibility support existed for the following language(s)".

In the light of the above discussion, requirements for other ICT products and services have been covered in IS 17802 (Part 1).

6 DETERMINATION OF CONFORMANCE

6.1 Conformance to the requirements specified in IS 17802 (Part 1) is achieved by meeting all the applicable requirements, these are clauses containing the word "shall". Those clauses containing the word "should" are recommendations and are not required for conformance.

6.2 All clauses except those in clause **12** of IS 17802 (Part 1) are self-scoping — in the sense that the test procedure and/or success criteria is met when the specified function/feature is supported and the concerned inputs/outputs are made available and the corresponding test is passed. When one of the functions/features is not supported or concerned inputs/outputs are not made available, the requirement is to be deemed as not applicable.

6.3 ICT is often an assembly of two or more items of ICT. In some cases, two or more interoperable items of ICT may together meet more requirements of the standard when one item complements the functionality of the other and the sum together meets more of the accessibility requirements. However, combining two items of ICT, both of which fail to meet any particular requirement, will not lead to a combined ICT system that meets that requirement.

6.4 This standard does not prioritize requirements.

NOTES

1 Conformance with the accessibility requirements could be affected by subsequent implementation or maintenance.

2 Sampling is frequently required on complex ICT when there are too many instances of the object to be tested. This standard cannot recommend specific ICT evaluation sampling techniques as these are context specific.

6.5 The inherent nature of certain situations makes it impossible to make reliable and definitive statements that accessibility requirements have been met. In those situations, therefore, the requirements in this standard are not applicable:

a) when the product is in a failure, repair or maintenance state where the ordinary set of input or output functions are not available; and

b) during those parts of start-up, shutdown, and other state transitions that can be completed without user interaction.

NOTE — Even in the above situations, it is best practice to apply requirements in this standard wherever it is feasible and safe to do so.

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6.6 Determination of conformance and success criteria for various requirements specified in clause **5** to clause **13** of IS 17802 (Part 1) are given as below:

  a) For generic requirements, refer to Table 1(a);

  b) For ICT with two-way voice communication, refer to Table 1(b);

  c) For ICT with video capabilities, refer to Table 1(c);

  d) For hardware, refer to Table 1(d);

  e) For web, refer to Table 1(e);

  f) For non-web documents, refer to Table 1(f);

  g) For software, refer to Table 1(g);

  h) For documentation and support services, refer to Table 1(h); and

  j) For ICT providing relay or emergency service access, refer to Table 1(i).

6.7 The requirements mentioned in clause **9, 10** and **11** of IS 17802 (Part 1) refers to 'WCAG 2.1 Success Criteria'. WCAG 2.1 provides 'sufficient and advisory techniques' to meet the success criteria. 'Other techniques' may also be sufficient if they meet the success criterion.

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Table 1 (a) Generic Requirements

(*Clause* 6.6)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
5.1.1 Introduction		Clause **5.1.1** of IS 17802 (Part 1) is informative and does not contain requirements that require testing
5.1.2 General		
5.1.2.1 Closed functionality	NIL	*See* Table 1(a) to table 1(i), as applicable.
5.1.2.2 Assistive technology	Testing	Check that the ICT has closed functionality. Determine the closed functions of the ICT. 1. Check that the tests for **5.1.3** to **5.1.6** mentioned in Table 1(a) can be carried out without the attachment or installation of any assistive technology except personal headsets or inductive loops.
5.1.3 Non-Visual Access		
5.1.3.1 Non-visual output of visual information	Testing	Check that the ICT needs Visual information to enable the use of those functions of the ICT (such as operating instructions and orientation, transaction prompts, user input verification, error messages and non-text content) that are closed to assistive technology such as screen reading. 1. Check that atleast one alternative mode, such as audio, or haptic or tactile form (such as braille), is provided for each function. 2. Check that the functions are operable using the provided alternative mode, such as audioor haptic or tactile form (such as braille).output access. 3. *Check that same Indian language chosen by the user is supported.
5.1.3.2 Auditory output delivery including speech	Inspection	Check that the ICT delivers auditory output in respect of closed functions by a mechanism included in or provided with the ICT (Mechanisms included in or provided with ICT may be, but are not limited to, a loudspeaker, a built-in handset/headset, or other industry standard coupled peripheral). 1. Check that the auditory output is delivered by a personal headset that can be connected through a 3.5 mm audio jack or an industry standard connection (could be a wireless connection or inductive loop) without requiring the use of vision. 2. *Choose an Indian language. Check that auditory output is also in the same language.
5.1.3.3 Auditory output correlation	Inspection	Check that the ICT provides auditory output as non-visual access to closed functionality, and information is displayed on the screen. 1. Enable a representative set of diverse information to be displayed on the screen during operation. 2. Check that the ICT provides auditory information that allows the user to correlate the audio with the information displayed on the screen.
5.1.3.4 Speech output user control	Inspection	Check that the ICT provides speech output as non-visual access to closed functionality. 1. Check that the speech output is capable of being interrupted or paused and rewound (by a few steps or fully) when requested by the user. 2. Check that the speech output is capable of being repeated when requested by the user.
5.1.3.5 Speech output automatic interruption	Inspection	Check that the ICT provides speech output as non-visual access to closed functionality. 1. Determine the closed functions of the ICT. 2. Check that the current speech output happens on a user function. 3. Before that completes, undertake a new user action. 4. Check that the current speech output for each single function is interrupted when new speech output begins. 5. *Check that the interrupt to speech output does not occur when safety instruction or warning messages are being read out and new user actions is blocked.

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* These procedures are applicable in respect of informative requirements only and, as such, are not part of normative requirements. These may be included based on user requirement in applicable cases.

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Table 1(a) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
5.1.3.6 Speech output for non-text content	Testing	Check that the ICT presents for Non-text content to users via speech output. 1. Check that speech is provided as an alternative to each non-text content. 2. Check whether the non-text content is not pure decoration or used only for visual formatting. 3. Check that the speech output follows the guidance for "text alternative" described in WCAG 2.1 Success Criterion 1.1.1. 4. *Check that the speech output is in the same language chosen by the user.
5.1.3.7 Speech output for video information	Testing	Check that the ICT needs Pre-recorded video content to enable the use of closed functions of ICT. Check ICT whether Speech output is provided as output to closed functionality. 1. Check that the speech output presents an equivalent information for the pre-recorded video content. 2. *Check that the speech output is in chosen or supported Indian language.
5.1.3.8 Masked entry	Testing	Check that the ICT provides auditory output as non-visual access to closed functionality. Check that the characters displayed are masking characters. Check that the ICT has not activated the option to allow non-private auditory output. 1. Enter masking characters. Check that the auditory output is not a spoken version of the characters entered or the auditory output is delivered only to a mechanism for private listening.
5.1.3.9 Private access to personal data	Testing	Check that the ICT provides auditory output as non-visual access to closed functionality. Check that the output contains data that is deemed private. 1. Check that the auditory output of the private data is delivered only to a mechanism for private listening. 2. Check that the mechanism for private listening can be connected without requiring the use of vision. 3. *Check that the privacy preserving output is in the same language chosen by the user and warning highlighting privacy is also in the same language.
5.1.3.10 Non-interfering audio output	Testing	Check that the ICT provides auditory output is as non-visual access to closed functionality and the ICT automatically plays interfering audible output. 1. Check that the interfering audible output lasts no longer than three seconds.
5.1.3.11 Private listening volume	Inspection	Check that the ICT provides auditory output as non-visual access to closed functionality. Check that the ICT delivers whether auditory output through a mechanism for private listening. 1. Check that there is at least one non-visual mode of operation for controlling the volume.
5.1.3.12 Speaker volume	Inspection and measurement	Check that the ICT provides auditory output as non-visual access to closed functionality. Check that the ICT delivers auditory output through speakers. 1. Check that a non-visual incremental volume control is provided. 2. Check that output amplification up to a level of at least 65 dBA (-29 dBPaA) is available.
5.1.3.13 Volume reset	Inspection and measurement	Check that the ICT provides auditory output as non-visual access to closed functionality. Check that the ICT is not dedicated to a single user. 1. Check that a function is provided to automatically reset the volume to be at a level of 65 dBA or less after every use.

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* These procedures are applicable in respect of informative requirements only and, as such, are not part of normative requirements. These may be included based on user requirement in applicable cas

Table 1(a) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
5.1.3.14 Spoken languages	Testing	Check that the ICT provides speech output as non-visual access to closed functionality. Check that the speech output is not proper name, technical term, words of indeterminate language or words or phrases that have become part of the vernacular of the immediately surrounding text. Check that the content is not generated externally and is under the control of the ICT vendor. Check that the ICT languages of the display can selected using non-visual access. Check the user has not selected a speech language that is different from the language of the displayed content. 1. Check that the speech output is in the same human language of the displayed content provided.

5.1.3.15 Non-visual error identification	Testing	Check ICT Whether Speech output is provided as non-visual access to closed functionality.
		Check ICT Whether an input error is automatically detected.
		  1. Check that speech output identifies the item that is in error.
		  2. Check that the speech output describes the item that is in error.
		  3. *Check that the error indication is described by the speech output in the same Indian language chosen by the user.

5.1.3.16 Receipts, tickets, and transactional outputs	Testing	Check that the ICT is closed to visual access and provides receipts, tickets, or other outputs as a result of a self-service transaction.
		Check that the information being checked is not printed copies of itineraries and maps.
		  1. Check that speech output is provided which includes all information necessary to complete or verify the transaction.
		  2. *Check that the speech output is in the same Indian language chosen by the user, immaterial of the language in which the tickets etc. are printed.
		  3. Make payment for a transaction through a mechanism provided by the system which involves payment gateways. Check whether the transaction is completed, ticket issued, and speech output is provided containing all the necessary information.

5.1.4 Functionality closed to text enlargement	Inspection and measurement	Check that the ICT offers functionality closed to the text enlargement features of platform or assistive technology and viewing distance is specified by the supplier. 1. Check that the ICT provides a mode of operation where the text and images of text necessary for all functionality is displayed in such a way that the height of a non-accented capital 'H' subtends an angle of at least 0.7 degrees at the specified viewing distance.

5.1.5 Visual output for auditory information	Inspection	Check that the ICT needs Pre-recorded auditory information to enable the use of closed functions of ICT.
		  1. Check that the ICT provides visual information equivalent to the auditory output.
		  2. *Check that the visual output is in the same language as the auditory information.

5.1.6.1 Operation without keyboard interface (closed functionality)	Inspection	Check that the ICT functionality is closed to keyboard or keyboard interfaces. 1. Check that all functionalities are operable without vision.
5.1.6.2 Operation without keyboard interface (Input focus)	Inspection	Check that the ICT functionality is closed to keyboards or keyboard interfaces. Check that the ICT's Input focus can be moved to a user interface element. 1. Check that it is possible to move the input focus away from that element using the same mechanism.

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* These procedures are applicable in respect of informative requirements only and, as such, are not part of normative requirements. These may be included based on user requirement in applicable cases.

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Table 1(a) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
5.1.7 Access without speech	Inspection	Check that the ICT needs speech to enable the use of closed functions of ICT. 1. Check that the closed functions can be enabled by an alternative input mechanism that does not require speech. 2. *Check that the alternate mechanism is also in the same Indian language as the one chosen by the user or in the language in which speech is used to enable the functions.
5.2 Activation of accessibility features	Inspection	Check that the ICT has documented accessibility features to meet a specific need. 1. Check that it is possible to activate those accessibility features, that do not rely on a method that does not support that need.
5.3 Biometrics (a)	Test 1	Check that the ICT uses biological characteristic for user identification. 1. Check that more than one biological means can be used for user identification.
Biometrics (b)	Test2	Check that the ICT uses biological characteristic for control of ICT. 1. Check that more than one means can be used for control of ICT.
5.4 Preservation of accessibility information during conversion	Inspection	Check that the ICT provides documentation fornon-proprietary information on accessibility. Check that the ICT converts information or communication. 1. Check that the non-proprietary information provided for accessibility is preserved, to the extent supported by the destination format.
5.5 Operable parts		
5.5.1 Means of operation	Testing	Check ICT Whether there are operable parts that require grasping, pinching or twisting of the wrist to operate actions. 1. Check if there are accessible alternative means of operation that do not require grasping, pinching or twisting of the wrist to operate these actions.
5.5.2 Operable part discernibility	Testing	Check that the ICT has operable parts. 1. Check that there is a means to discern each operable part without vision. 2. Check that the action associated with the operable part has not been performed when using the means to discern each operable part of step 1.
5.6 Locking or Toggle controls		
5.6.1 Tactile or auditory status	Testing	Check that the ICT has a locking or toggle control. Check that the locking or toggle control is visually presented to the user. 1. Check that there is at least one mode of operation where the status of all locking or toggle controls can be determined through touch or through sound without operating the control.
5.6.2 Visual status	Testing	Check that the ICT has a locking or toggle control. Check Whether locking or toggle control is presented to the user. 1. Check that there is at least one mode of operation where the status of all locking or toggle controls can be visually determined when the control is presented.
5.7 Key repeat	Testing	Check that the ICT has a key repeat function. 1. Check that the delay before key repeat can be adjusted to at least 2 s. 2. Check that the key repeat rate can be adjusted to 2 s per character.
5.8 Double-strike key acceptance	Testing	Check that the ICT has a keyboard or keypad. Check that there is a mechanism that allows adjustment of the delay after any keystroke, during which an additional key-press will not be accepted if it is identical to the previous keystroke. 1. Adjust that mechanism to its maximum setting and press any key. After delay of 0.5 s press the same key and observe whether the keystroke has been accepted.

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Table 1(a) (*Concluded*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
5.9 Simultaneous user actions	Inspection	Check that ICT has a mode of operation requiring simultaneous user actions. Determine all the user controllable functions of the ICT. 1. Check that there is a mode of operation that does not require simultaneous user actions. 2. Check that each user controllable function can be operated with a mode of operation not requiring simultaneous user actions.
5.10.1 Indian Language Requirements	Inspection/ Testing/ Measurement	Check that the ICT offers features, content or operations in one or more Indian languages. Check the list of Indian languages it offers support to in respect of the features, content or operations. Choose each language setting, one at a time and check the following: 1. Check whether Unicode is supported as per ISO/IEC 10646. 2. Check whether display in supported for Indian languages as per IS/ISO/IEC 14496-22 : 2015. 3. Check whether inputting is enabled through keyboard (hard or soft) in the concerned Indian language, as per IS 16333-3 for mobile keyboard layout. 4. Check whether inputting is enabled through keyboard (hard or soft) for desktop or Laptop as per IS 16350 : 2016. 5. Check Indian language inputs and fonts are provided as per MeitY eGovernance Standard on Character Encoding: 01 : 2009. 6. *Check whether auditory outputs are given in the chosen Indian language (in closed systems) and screen reader supports the same Indian language (in open systems). 7. *Check whether voice command is supported in the chosen Indian language.
5.11 Indian Sign Language	Inspection/ Testing/ Measurement	1. Check whether ICT (such as TV, Set-top box and remote control) support sign language. 2. *Check whether they offer ready options for the user to access sign language output setting. 3. *Choose a content that provides Sign language. 4. *Check whether sign language is shown in a picture-in-picture mode. 5. *Check whether the sign language is as per ISL Dictionary released by ISLRC, is accurate and conveys clear message to the hearing impaired. 6. *Check online/internet TV/Television/Video programs through Internet and Internet platforms. 7. *Check compliance to Accessibility Standards for PwDs, MoI&B Accessibility standard 2019.
5.12 Captioning and Subtitling	Inspection/ Testing/ Measurement	1. Check Whether ICT (such as TV, Set-top box and remote control) support Captioning (closed and open) and subtitling. 2. *Check the list of Indian languages it offers support to in respect of the features, content or operations. 3. *Choose each language setting, one at a time and check the following: 3.1 *Choose a content that provides Captioning. 3.2 *Check whether the captioning is accurate, synchronized, complete and free from errors of spelling and grammar. 3.3 *Check the positioning of captioning, case, italics and underlining, colour and font for easy visibility and readability of hearing impaired. 3.4. *Check online/internet TV/Television/Video programs through offered through Internet and Internet platforms. 3.5. *Check compliance as per Accessibility Standards for PwDs, MoI&B Accessibility standard, 2019.

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Table 1 (b) ICT with Two-way Voice Communication

(*Clause* 6.6)

For Requirements, Refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
6.1 Audio bandwidth for speech	Measurement	Check that the ICT can provide two-way communication. 1. Check that the ICT can encode and decode audio with a frequency range with an upper limit of at least 7000 Hz.
6.2 Real-Time Textv (RTT) functionality		
6.2.1 RTT provision		
6.2.1.1 RTT communication	Inspection	Check that ICT has a mode and is in a mode that provides two-way voice communication. Check "RTT reference terminal" is available as it is essential for testing. 1. Check that the ICT allows two-way RTT communication with the "reference" ICT. NOTE 1 — Feature phones may not be able to support RTT capabilities. NOTE 2 — An "RTT reference terminal" is a terminal specifically designed for testing RTT capable devices in a manner that would confirm their functionality and interoperability. These are generally created by a national or international standards entity so that all testing is done with a consistent "RTT reference terminal". NOTE 3 — For support to Indian languages, UNICODE, a character set which is 16-bit ISO/IEC 10646-1 level 3 is to be mandatorily supported [*see* clause **5.10** of IS 17802 (Part 1)]. NOTE 4 — Where this requirement would require design changes to add input or output hardware to the ICT are exempted.
6.2.1.2 Concurrent voice and text	Inspection	Check that the ICT provides a means for two-way voice and RTT communication. 1. Check if it allows concurrent use of voice and RTT through a single user connection. NOTE 1 — For multiparty communication, as in a conference system, check that Step 1 is supported by a typical protocol that allows voice and RTT on a 'one at a time' basis among participants, even as chat may support concurrent submission of messages by all participants. NOTE 2 — Where both server-side software and local hardware and software are required to provide voice * communication, where neither part can support voice communication without the other and are sold as a unit for the voice communication function, the local and server-side components are considered a single product.
6.2.2 Display of RTT		
6.2.2.1 Visually distinguishable display	Inspection	Check that the ICT under test has RTT send and receive capabilities. Check that the "RTT reference terminal" is available for testing. 1. The ICT under test is connected to the "RTT reference terminal". 2. The different elements of the ICT are in an operational status (the connection is active and the terminals are in the relevant RTT mode) and the two terminals are communicating with each other. 3. A Short text sequence is sent by the ICT under test. 4. A Short text sequence is sent by the "RTT reference terminal". 5. Check, on the ICT under test, that displayed sent text is visually differentiated from and separated from received text.

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Table 1 (b) (*Continued*)

For Requirements, Refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
6.2.2.2 Programmatically determinable send and receive direction	Inspection	Check that the ICT under test has RTT send and receive capabilities and has open functionality. Check "RTT reference terminal" is available for testing. 1. The ICT under test is connected to the "RTT reference terminal". 2. Check that the different elements of the ICT are in an operational status (the connection is active and the terminals are in the relevant RTT mode) and the two terminals are communicating with each other. 3. Send a short text sequence by the ICT under test. 4. Send a short text sequence by the "RTT reference terminal". 5. Check that the send/receive direction of text sequences are programmatically determinable. 6. *Repeat steps 3 to 5 by sending the short text in Indian languages.
6.2.2.3 Speaker identification	Inspection	Check that the ICT has RTT and speaker identification capabilities. Check "RTT reference terminal" is available for testing 1. The ICT under test is connected to the "RTT reference terminal". 2. Send RTT from the "RTT reference terminal" to the ICT under test. 3. Check by observation whether the ICT under test provides speaker identification of voice. 4. Check that the incoming RTT text also provides speaker identification. 5. *Repeat 3 to 4 by sending RTT in Indian languages.
6.2.2.4 Visual indicator of Audio with RTT	Inspection	Check that the ICT is providing two-way voice communication and has RTT capabilities. 1. ICT under test is connected to another ICT providing two-way voice communication that is compatible with the voice communication on the ICT under test. 2. A person speaks into the other ICT. 3. Check by observation whether there is a real-time visual indicator of audio activity.
6.2.3.a Interoperability (a)	Test	Check that the ICT provides a means for two-way voice communication over the Public Switched Telephone Network (PSTN). Check that the ICT provides a means for two-way RTT communication. Check availability of A "V.18 reference terminal" for testing. 1. Check that the ICT interoperates over the Public Switched Telephone Network (PSTN), with the V.18 reference terminal connected to the PSTN as described in Recommendation ITU-T V.18 or any of its annexes for text telephony signals at the PSTN interface. NOTE — A "V.18 reference terminal" is a terminal specifically designed for testing V.18 capable devices in a manner that would confirm their functionality and interoperability. These are generally created by a national or international standards entity so that all testing is done with a consistent reference terminal.
6.2.3.b Interoperability (b)	Test	Check that the ICT provides a means for two-way voice communication using VOIP with Session Initiation Protocol (SIP). Check that the ICT provides a means for two-way RTT communication. Check that an "RTT reference terminal" is available as it is essential for testing for testing. 1. Check that the ICT interoperates with the "RTT reference terminal" using VOIP with Session Initiation Protocol (SIP) and using RTT that conforms to IETF RFC 4103. 2. If the ICT interoperates with other ICT using the IP Multimedia Subsystem (IMS) to implement VOIP, check that it follows the set of protocols in ETSI TS 126 114, ETSI TS 122 173 and ETSI TS 134 229 that specify how IETF RFC 4103 applies.

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Table 1 (b) (*Continued*)

For Requirements, Refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
6.2.3.c Interoperability (c)	Test	Check that the ICT provides a means for two-way voice communication using technologies other than PSTN or VOIP with Session Initiation Protocol (SIP). Check that the ICT provides a means for two-way RTT communication. Check that an "RTT reference terminal" is available for the mode of RTT communication for testing. 1. Check that the ICT interoperates with the "RTT reference terminal" using a relevant and applicable common specification for RTT exchange that is published and available for the environment in which the ICT will be operating. 2. Check that the common specification in check 1 includes a method for indicating loss or corruption of characters.
6.2.3.d Interoperability (d)	Test	Check that the ICT provides a means for two-way voice communication and RTT. Check an "RTT reference terminal" is available using the new RTT Standard for testing. 1. Check that the ICT under test interoperates with the "RTT reference terminal" for the new RTT standard that has been introduced for use. 2. Check that the new RTT standard is supported by all of the other active ICT that support voice and RTT in the same environment.
6.2.4 RTT responsiveness	Inspection of Measurement data or Test	Check that the ICT under test utilises RTT input. Check that the ICT under test is connected to a device or software that can determine when characters are transmitted by the ICT under test. 1. Enter single characters to the terminal under test. 2. Check the time at which input entry has occurred (for example, characters appear up on the local screen). 3. Check the period between input entry to the ICT under test and the time when the text is transmitted to the ICT network or platform. 4. Check that it is less than or equal to 500ms. NOTE — As described in the notes to clause **6.2.4** of IS 17802 (Part 1), the identification of when input entry has occurred may vary according to the type of RTT system under test.
6.3 Caller ID	Inspection	Check that the ICT terminal provides caller identification or similar telecommunications functions and the functionality is open. 1. Check that the information delivered by each function is available in text form. 2. Check that the information delivered by each function is programmatically determinable. 3. *Repeat Steps 1 to 2 by setting Indian language option.
6.4 Alternatives to voice-based services	Inspection	Check that the ICT provides real-time voice-based communication. Check ICT provides voice mail, auto-attendant, or interactive voice response facilities. 1. Check that the ICT offers users a means to access the information without the use of hearing or speech. 2. Check that a user can carry out the tasks provided by the system without the use of hearing or speech. 3. *Check that the information displayed is in the same Indian language chosen by the user and the operation is supported with the use of the chosen Indian language.
6.5 Video Communication		
6.5.1 General	NIL	Clause **6.5.1** of IS 17802 (Part 1) is informative only and contains no requirements requiring test.
6.5.2 Resolution	Inspection	Check that the ICT provides two-way voice communication that includes real-time video functionality. 1. Check that the video communication resolution is QVGA resolution or better.

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Table 1 (b) (*Concluded*)

For Requirements, Refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
6.5.3 Frame rate	Inspection	Check that the ICT provides two-way voice communication that includes real-time video functionality. 1. Check that the video communication frame rate is equal to or higher than 20 frames per second (FPS).
6.5.4 Synchronization between audio and video	Measurement	Check that the ICT provides two-way voice communication that includes real-time video functionality. 1. Check that the time difference between the speech and video presented to the user is equal to or less than 100 ms.
6.5.5 Visual indicator of audio with video	Inspection	Check that the ICT provides two-way voice communication and includes real-time video functionality. 1. Check that ICT under test is connected to another ICT providing two-way voice communication that is compatible with the voice communication on the ICT under test. 2. Let a person speak into the other ICT. 3. Check by observation whether there is a real-time visual indicator of audio activity.
6.5.6 Speaker identification with video (sign language) communication	Measurement	Check that the ICT provides two-way voice communication and includes real-time video. 1. Check that a person communicates in sign language from the other compatible terminal. 2. Check by observation whether the ICT under test provides a means for speaker identification for the sign language users.
6.6 Alternatives to video based services	NIL	Advisory only and contains no testable requirements

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Table 1 (c) ICT with Video Capabilities

(Clause 6.6 *)*

For Requirements, Refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
7.1 Caption processing technology		
7.1.1 Captioning playback	Inspection	Check that the ICT displays video with synchronized audio. 1. Check that there is a mechanism in the ICT to display the captions. 2. Check that the ICT has a mechanism to display the captions and sub-titling in supported languages. 3. .* Check that the captioning and sub-titling is in the same Indian language chosen by the user or in the language agreed to by all participants 4. .*Check that the captions follow MoI&B Accessibility standard as regards timing, colour, positioning and other parameters. NOTE — If a Braille device is connected, the ICT should provide an option to display captions on the Braille device.
	Test	Check that the ICT displays or processes video with synchronized audio. Check that Closed captions are provided as part of the content. 1. Check that there is a mechanism for the user to choose to display the captions.
7.1.2 Captioning synchronization	Inspection	Check that the ICT has a mechanism to display captions. 1. Check that the mechanism to display the captions preserves the synchronization between the audio and corresponding captions within 100 ms of the time stamp of the caption, or the availability of the caption to the player if a live caption.
7.1.3 Preservation of captioning	Inspection	Check when ICT transmits, converts or records video with synchronized audio. 1. Check it preserves caption data such that it can be displayed in a manner consistent with clauses **7.1.1** and **7.1.2** of IS 17802 (Part 1). 2. Check the captioning is consistent with the guidelines of MoI&B accesibility standard
7.1.4 *Captions characteristics*	Inspection	Check that the ICT displays captions and the captions under display are modifiable characters. 1. Check whether the ICT provides a way for the user to adapt the displayed characteristics of captions - background and foreground colour of subtitles, font type, size opacity of the background box of subtitles, and the contour or border of the fonts, to suit his/her requirements. NOTE — Characteristics of Captions shall be consistent with MoI&B TV Accessibility standard.
7.1.5 Spoken subtitles	Inspection	Check that the ICT displays video with synchronized audio. 1. *Check that the content of the displayed captions are programmatically determinable. 2. Check that there is a mode of operation to provide a spoken output of the available captions.
7.2 Audio description technology		
7.2.1 Audio description playback	Inspection	Check that the ICT displays video with synchronized audio. 1. Check that there is an explicit and separate mechanism for audio description. 2. Check that there is a mechanism to select and play the audio description to the default audio channel. 3. Check that the ICT enables the user to select and play several audio tracks.

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Table 1 (c) (*Concluded*)

For Requirements, Refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
7.2.2 Audio description synchronization	Inspection	Check that the ICT has a mechanism to play audio description. 1. Check that the synchronization between the audio and-visual content and the corresponding audio description is preserved.
7.2.3 Preservation of audio description	Inspection	Check that the ICT transmits converts or records video with synchronized audio. 1. Check that the ICT preserves audio description data such that it can be played in a manner consistent with clauses **7.2.1** and **7.2.2** of IS 17802 (Part 1).
7.3 User controls for captions and audio description	Inspection	Check that the ICT primarily display materials containing video with associated audio content. 1. Check that user controls to activate subtitling and audio descriptions are provided to the user at the same level of interaction (that is, the number of steps to complete the task) as the primary media controls.

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Table 1 (d) Hardware

(*Clause* 6.6)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
8.1 General		
8.1.1 Generic requirements	Inspection	Check that the ICT Supports Indian Language(s). Check that the ICT system is a mobile. 1. *Check that the mobile supports UNICODE as per ISO/IEC 10646. 2. *Check that the mobile keyboard supports one type of Indian language keyboard layout as per IS 16333 (Part 3). 3. Check that the mobile has the ability to display Indian language content as per IS/ISO/IEC 14496-22 : 2015. Check that the ICT Supports Indian Language(s). Check that the ICT system is a desktop or a laptop. 1. *Check that the desktop/laptop supports UNICODE as per ISO/IEC 10646. 2. *Check that the desktop/laptop keyboard supports one type of Indian language keyboard as per IS 16350 : 2016. 3. *Check that the desktop/laptop has the ability to display Indian language content and as per IS/ISO/IEC 14496-22 : 2015. *For website, SAKAL BHARATI font or similar font having same height and stem width for all Indian script is recommended. NOTE — The "generic requirements" of clause **5** of IS 17802 (Part 1) apply to all ICT hardware.
8.1.2 Standard connections	Inspection	Check that the ICT provides user input or output device connection points. 1. Check that one type of connection conforms to an industry standard non-proprietary format. 2. Check that one type of connection conforms to an industry standard non-proprietary format and through the use of commercially available adapters. NOTE — The connections may be physical or wireless connections.
8.1.3 Colour	Inspection	Check that the hardware aspects of the ICT conveys visual information using colour coding as a means to indicate an action, to prompt a response, or to distinguish a visual element. 1. Check that an alternative form of visual coding is provided.
8.2 Hardware products with speech output		
8.2.1 Speech volume gain		
8.2.1.1 Speech volume range	Inspection based on measurement data	Check that the ICT hardware has a speech output. 1. Check that the ICT is certified to meet ANSI/TIA-4965. 2. Measure the level (in dB) of the speech output at the lowest volume setting. 3. Measure the level (in dB) of the speech output at the highest volume setting. 4. Check that the range between 1 and 2 is greater than or equal to 18 db.
8.2.1.2 Incremental volume control	Inspection based on measurement data	Check that the ICT hardware has speech output and its volume control is incremental. 1. Measure the level (in dB) of the speech output at the lowest volume setting. 2. Check that there is at least one intermediate step that provides a level 12 dB above the lowest volume level measured in step1.

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Table 1(d) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
8.2.2.1 Fixed-line devices	Inspection based on measurement data	Check that the ICT hardware is a fixed-line communication device with speech output and which is normally held to the ear. 1. Check that the measurements are made according to ETSI ES 200 381-1 which prove that the requirements defined in that standard are fulfilled (or) Check ICT is certified to meet TIA-1083-A. 2. The ICT carries the "T" symbol specified in ETSI ETS 300 381.
8.2.2.2 Wireless communication devices	Inspection based on measurement data	Check that the ICT hardware is a wireless communication device with speech output which is normally held to the ear. 1. Check that the ICT provides a means of magnetic coupling to hearing technologies which meets the requirements of ETSI ES 200 381-2 (or) Check that the ICT is certified to meet ANSI/IEEE C63.19.
8.3 Stationary ICT		
8.3.0 General (informative recommendation)	Inspection based on measurement data	Check that the ICT has operable parts 1. Ensure while installing that minimum and maximum heights of operable parts: 800 mm and 1 100 mm respectively.
	Inspection based on measurement data	Check that the ICT has displays units 1. Ensure while installing that minimum and maximum heights of displays: 1 200 mm and 1 400 mm respectively.
8.3.1 Forward or side reach	Inspection and measurement	Check that the ICT is stationary ICT. 1. Check that they confirm to either **8.3.2** or **8.3.3**.
8.3.2 Forward reach		
8.3.2.1 Unobstructed high forward reach	Inspection and measurement	Check that ICT is Stationary ICT and no part of the stationary ICT obstructs the forward reach. 1. Check that at least one of each type of operable part is located no higher than 1 200 mm above the floor of the access space.
8.3.2.2 Unobstructed low forward reach	Inspection and measurement	Check that ICT is Stationary ICT and that no part of the stationary ICT obstructs the forward reach. 1. Check that at least one of each type of operable part is located no lower than 380 mm above the floor of the access space.
8.3.2.3.1 Obstructed forward reach-Clear space	Inspection	Check that the ICT is a tationary ICT and an integral part of the stationary ICT forms an obstruction which hinders to any type of operable part. 1. Check that the ICT provides a clear space which extends beneath the obstructing element for a distance not less than the required reach depth over the obstruction.
8.3.2.3.2 Obstructed (< 500 mm) forward reach	Inspection and measurement	Check that the ICT is Stationary ICT and an integral part of the stationary ICT forms an obstruction which is less than 500 mm deep. 1. Check that the forward reach to at least one of each type of operable part is no higher than 1 000 mm above the floor contact of the ICT.
8.3.2.3.3 Obstructed (< 600 mm) forward reach	Inspection and measurement	Check that the ICT is stationary ICT and an integral part of the stationary ICT forms an obstruction which is not less than 500 mm but is less than 600 mm deep. 1. Check that the forward reach to at least one of each type of operable part is no higher than 1 100 mm above the floor contact of the ICT.
8.3.2.4 Knee and toe clearance width	Inspection and measurement	Check that the ICT is stationary ICT and the space under an obstacle that is an integral part of the stationary ICT is part of access space. 1. Check that the width of the knee and toe clearance is greater than 900 mm.

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Table 1(d) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
8.3.2.5 Toe clearance (a)	Inspection and measurement	Check that the ICT is stationary ICT and has an obstacle is an integral part of the ICT. Check that there is a toe clearance space under any obstacle that is an integral part of the ICT that is less than 230 mm above the floor. 1. Check that the toe clearance does not extend more than 635 mm under the obstacle.
8.3.2.5 Toe clearance (b)	Inspection and measurement	Check that the ICT is stationary ICT and has an obstacle is an integral part of the ICT. Check that there is a toe clearance space under any obstacle that is an integral part of the ICT that is less than 230 mm above the floor 1. Check that the toe clearance is at least 430 mm deep and 230 mm above the floor under the obstacle.
8.3.2.5 Toe clearance (c)	Inspection and measurement	Check that the ICT is stationary ICT and has an obstacle is an integral part of the ICT. Check that there is a toe clearance space under any obstacle that is an integral part of the ICT that is less than 230 mm above the floor. 1. Check that the toe clearance extends no more than 150 mm beyond any obstruction at 230 mm above the floor.
8.3.2.6 Knee clearance (a)	Inspection and measurement	Check that the ICT is stationary ICT and has an obstacle is an integral part of the ICT. Check that there is a knee clearance space under the obstacle between 230 mm and 685 mm above the floor. 1. Check that there is a knee clearance that extends less than 635 mm under the obstacle at a height of 230 mm above the floor.
8.3.2.6 Knee clearance (b)	Inspection and measurement	Check that the ICT is stationary ICT and has an obstacle is an integral part of the ICT. Check that there is a knee clearance space under the obstacle between 230 mm and 685 mm above the floor. 1. Check that there is a knee clearance that extends at least 280 mm under the obstacle at a height of 230 mm above the floor.
8.3.2.6 Knee clearance (c)	Inspection and measurement	Check that the ICT is stationary ICT and has an obstacle is an integral part of the ICT. Check that there is a knee clearance space under the obstacle between 230 mm and 685 mm above the floor. 1. Check that there is a knee clearance that extends more than 205 mm under the obstruction at a height of 685 mm above the floor.
8.3.2.6 Knee clearance (d)	Inspection and measurement	Check that the ICT is Stationary ICT and has an obstacle is an integral part of the ICT. Check that there is a knee clearance space under the obstacle between 230 mm and 685 mm above the floor. 1. Check that the reduction in depth of the knee clearance is no greater than 25 mm for each 150 mm in height.
8.3.3 Side each		
8.3.3.1 Unobstructed high side reach	Inspection and measurement	Check that the ICT is stationary ICT and has an obstacle is an integral part of the ICT Side reach is unobstructed or is obstructed by an element that is an integral part of the stationary ICT which is less than 510 mm. 1. Check that the high side reach to at least one of each type of operable part is no higher than 1220 mm above the floor of the access space.

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Table 1(d) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
8.3.3.2 Unobstructed low side reach	Inspection and measurement	Check that the ICT is stationary ICT and the side reach is unobstructed or obstructed by an element that is an integral part of the stationary ICT and which is less than 510 mm. 1. Check that the low side reach to at least one of each type of operable part is greater than or equal to 380 mm above the floor of the access space.
8.3.3.3.1 Obstructed (≤ 255 mm) side reach	Inspection and measurement	Check that the ICT is stationary ICT and there is an obstruction, less than or equal to 255 mm in depth, that is an integral part of the ICT. 1. Check that the high side reach to at least one of each type of operable part is no higher than 1 220 mm above the floor of the access space.
8.3.3.3.2 Obstructed (≤ 610 mm) side reach	Inspection and measurement	Check that the ICT is stationary ICT and there is an obstruction, greater than 255 mm and no more than 610 mm in depth, that is an integral part of the ICT. 1. Check that the high side reach to at least one of each type of operable part is no higher than 1 170 mm above the floor of the access space.
8.3.4 Clear floor or ground space		
8.3.4.1 Change in level	Inspection and measurement	Check that the ICT is stationary ICT and there is a floor within the ICT that has a change in level. 1. Check if the change in level is ramped, check that it has a slope less than 1:12. (or) 2. If there is a vertical change of floor level, check that it is less than or equal to 6.4 mm. (or) 3. If there is a vertical or sloped change in floor level, check that the slope is not greater than 1:2.
8.3.4.2 Clear floor or ground space	Inspection and measurement	Check that the ICT is stationary ICT and there is an operating area within it. 1. Check that there is a clear floor area with minimum rectangular dimensions of 900 mm on one edge and 1200 mm on the other edge.
8.3.4.3 Approach		
8.3.4.3.1 General	Inspection	Check that the ICT is stationary ICT has an access space inside it. 1. Check that it has at least one full side of the space that is unobstructed.
8.3.4.3.2 Forward approach	Inspection and measurement	Check that the ICT is stationary ICT containing an alcove and the operating area is within the alcove. Check that the depth of the alcove is greater than 610 mm where a forward approach is necessary. 1. Check that the dimension of the access space is a minimum of 915 mm wide.
8.3.4.3.3 Parallel approach	Inspection and measurement	Check that the ICT is stationary ICT containing an alcove and the operating area is within the alcove. Check that the depth of the alcove is greater than 380 mm and a parallel approach is possible. 1. Check that the dimension of the access space is a minimum of 1525 mm wide.
8.3.5 Visibility	Inspection and measurement	Check that the ICT is stationary ICT and one or more display screens are provided. 1. Check that at least one of each type of display screen is positioned such that the information on the screen is legible from a point located 1015 mm above the centre of the floor of the operating area.

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Table 1(d) (*Concluded*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
8.3.6 Installation instructions	Inspection and measurement	Check that The ICT is stationary ICT. 1. Check that installation instructions are made available. 2. Check that the instructions give guidance on how to install the ICT in a manner that ensures that the dimensions of the installed ICT conform to clauses **8.3.2** to **8.3.4** of IS 17802 (Part 1). 3. Check that the instructions say that the installers should also take into account applicable requirements for accessibility of the built environment as they apply to the installation of the ICT.
8.4 Mechanically operable parts		
8.4.1 Numeric keys	Inspection	Check that the ICT has physical numeric keys arranged in a 12 key telephone keypad layout. 1. Check that the number five key is tactilely distinct from the other keys of the keypad. Check that the ICT has softkey based keyboard (like PoS). 1. *Check for available provision for an alternate way of location and navigation within the key board space to assist the user about the keys such as through provision of audio-also ensuring privacy through headphone support while entering privacy respecting input.
8.4.2 Operation of mechanical parts		
8.4.2.1 Means of operation of mechanical parts	Inspection	Check that the ICT has a control that requires grasping, pinching, or twisting of the wrist to operate. 1. Check that an accessible alternative means of operation is provided that does not require these actions.
8.4.2.2 Force of operation of mechanical parts	Inspection and measurement	Check that the ICT has a control that requires a force greater than 22.2 N to operate it. 1. Check that an accessible alternative means of operation is provided that requires a force less than or equal to 22.2 N.
8.4.3 Keys, tickets and fare cards	Inspection and measurement	Check that ICT provides keys, tickets or fare cards, and their orientation is important for further use. 1. Check that keys, tickets or fare cards have an orientation that is tactilely discernible.
8.5 Tactile indication of speech mode	Inspection and measurement	Check that the ICT is designed for shared use and speech output is available. 1. Check that a tactile indication of the means to initiate the speech mode of operation is provided.

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* These procedures are applicable in respect of informative requirements only and, as such, are not part of normative requirements. These may be included based on user requirement in applicable cases.

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Table 1 (e) Web

(*Clause* 6.6)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
9.1 Perceivable		
9.1.1 Text alternatives		
9.1.1.1 Non-text content	Inspection	Check that the ICT is a web page then, 1. Identify any non text content present on the page. Examples of non-text content are images, graphs, figures etc. 2. Using an assistive technology like screen reading software, verify that there is text alternative present for these non-text content. 3. Note that not all non-text content needs text alternative to be present as in the case of decorative images. Any non-text element present which already has a text equivalent present doesn't have to be exposed to screen reader users. 4. When the text alternative is needed for the image, then check that the text alternative present for the image is meaningful and descriptive of the image that is present. Check that the document does not fail WCAG 2.1 Success Criterion 1.1.1 Non-text content Success Criterion 1.1.1 Non-text Content
9.1.2 Time-based media		

9.1.2.1 Audio-only and video-only (pre-recorded)	Inspection	Check that the ICT is a web page then,
		
		if it has has multimedia [audio/ video] present in the content check the following:
		
		1. If the content is only audio, check if the audio content is repetitive and describes the content in text elsewhere in the same page. Then the following tests are not required.
		   a. Identify the text transcript present for the audio.
		   b. If text transcript is present, then ensure that it has all the essential dialogs, identifies speakers and describes all essential sound effects for the audio only content.
		2. If the content is a video, check if the video content is repetitive and describes the content in text elsewhere in the same page. Then the following tests are not required.
		   a. Identify the video content.
		   b. For the unique video content, text description is mandatory. Verify that either an audio description or text description is provided for the essential visual content in the video.
		   c. In either case of audio description or text description, check that important scenes and any other visual information that is not being conveyed via dialogues is being presented to visually impaired user.
		
		Check that the web page does not fail WCAG 2.1 Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded)

9.1.2.2 Captions (prerecorded)	Inspection	Check that the ICT is a web page then,
		
		if it has video in the content,
		
		1. Check for the presence of captions in the Video.
		2. When captions are present, check that
		   a. Captions are visible with the required colour contrast between the text and the background.
		   b. Identify speakers and any background noises
		   c. Captions are in sync with the video content.
		
		Check that the document does not fail WCAG 2.1 Success Criterion 1.2.2 Captions (Prerecorded)

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Table 1(e) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria

9.1.2.3 Audio description or media alternative (prerecorded)	Inspection	Check that the ICT is a web page then,
		1. Identify the video content.
		2. If the video content does not provide additional information where sight is needed to understand the content then audio description is not a mandate for this requirement.
		3. If the video content contains additional information which needs sight to perceive it then ensure the following:
		  a. Verify that an audio description is provided for the essential visual content in the video that requires sight to understand.
		  b. In case of audio description being present, check that important scenes and any other visual information that is not being conveyed via dialogues is being presented to visually impaired users.
		Check that the document does not fail WCAG 2.1 Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded)

9.1.2.4 Captions (live)	Inspection	Check that the ICT is a web page then,
		1. Identify the live video content present on the page.
		2. Check for the presence of captions in the live video.
		3. When captions are present, check that:
		  a. Captions are visible with the required colour contrast between the text and the background;
		  b. Identifies speakers and any background noises; and
		  c. Captions are in sync with the video content.
		Check that the document does not fail WCAG 2.1 Success Criterion 1.2.4 Captions (Live)

9.1.2.5 Audio description (pre-recorded)	Inspection	Check that the ICT is a web page then,
		1. Identify the video content.
		2. If the video content does not provide additional information where sight is needed to understand the content then audio description is not a mandate for this requirement.
		3. If the video content contains additional information which needs sight to perceive it then ensure the following:
		  a. Verify that an audio description is provided for the essential visual content in the video that requires sight to understand.
		  b. In case of audio description being present, check that important scenes and any other visual information that is not being conveyed via dialogues is being presented to visually impaired users.
		Check that the document does not fail WCAG 2.1 Success Criterion 1.2.5 Audio Description (Prerecorded)

9.1.3 Adaptable		
9.1.3.1 Info and relationships	Inspection	Check that the ICT is a web page then, 1. Check that all the visual elements like tables, lists, form fields should be programmatically conveyed to the screen reader. 2. Identify each form field like option button, dropdown list, checkbox, edit box on the page and test that associated label along with role/ state is read for each control. 3. Identify any table on the screen and read the column header, row details using screen reader. Check that the document does not fail WCAG 2.1 Success Criterion 1.3.1 Info and Relationships

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Table 1(e) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
9.1.3.2 Meaningful sequence	Inspection	Check that the ICT is a web page then, 1. Using a screen reader, go over the content present on the page. 2. Check that all the content present is announced to screen reader users in a meaningful and appropriate order. 3. Check that no content is being missed by screen reader software AND that no content that is visually hidden is being announced to screen reader users. Check that the document does not fail WCAG 2.1 Success Criterion 1.3.2 Meaningful Sequence
9.1.3.3 Sensory characteristics	Inspection	Check that the ICT is a web page then, 1. Go over the content present on the page. 2. Check for any instructions related to understanding or operating content. If any of those instructions refer to visual characteristics such as shape, colour, size, visual location, orientation or sound cue then check that alternative non-sensory characteristics instruction is present. Check that the document does not fail WCAG 2.1 Success Criterion 1.3.3 Sensory Characteristics
9.1.3.4 Orientation	Inspection	Check that the ICT is a web page then, 1. Ensure that orientation lock is disabled on the device or software. 2. Check the web page is in the default orientation of portrait mode. 3. Now change the orientation of the page by turning the device to change its orientation from portrait to landscape mode. Note that the changes to design or to the content is permissible to be different in different orientations as long as the content and functionality is present in both the orientations. Note: this can be tested on mobile phone or tablet computers. Check that the document does not fail WCAG 2.1 Success Criterion 1.3.4 Orientation
9.1.3.5 Identify input purpose	Inspection	Check that the ICT is a web page then, 1. Turn on the screen reader. 2. Identify the form fields on the page. 3. Check if screen reader is giving any information about the input field, for e.g. Enter telephone number without STD code, e-mail id field. Check that the document does not fail WCAG 2.1 Success Criterion 1.3.5 Identify Input Purpose
9.1.4 Distinguishable		

9.1.4.1 Use of colour	Inspection	Check that the ICT is a web page then,
		1. Check the content present on the page for scenarios where colour is being used alone to convey information. Examples are charts, graphs where colour is used to distinguish different elements being presented in the graph.
		  a. When content is presented using colour alone, then check to ensure that the same information is presented in text so that colour blind users would still be able to get all the information. If graphs are accompanied with tabular data of the content that is being presented in the graph, then this requirement is met.
		2. Another scenario to look for are links being present in between blocks of text in paragraphs. When colour alone is used as the only means to differentiate links and text then colour-blind users would not even know the existence of the same.
		  a. When links are using colour alone to distinguish themselves, then ensure that an additional visual indicator like underline or any other indicator OR if the colour contrast between the link text and the surrounding non-link text is 3 : 1 then this requirement is met.
		Check that the document does not fail WCAG 2.1 Success Criterion 1.4.1 Use of Colour

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Table 1(e) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
9.1.4.2 Audio control	Inspection	Check that the ICT is a web page then, 1. Identify the multimedia elements on the page. 2. If the multimedia automatically starts playing audio when you visit the page or anytime during the operation that lasts for more than three seconds, then: a. The audio can be paused, stopped, or muted. b. Check there is a mechanism to adjust the volume (independent of overall device volume). Check that the document does not fail WCAG 2.1 Success Criterion 1.4.2 Audio Control
9.1.4.3 Contrast (minimum)	Inspection	Check that the ICT is a web page then, 1. Check for text on the page that may have poor colour contrast. Identify the text that is not easily readable by users. examples are light grey text over white background etc. 2. Using an automated tool, pick the colours of the text and the background. Test the codes for colour contrast of 4.5:1 for regular text and 3:1 for large text. a. Regular text is anything below 12 point. b. Large text is 14 point bold and anything above 18 point. Check that the document does not fail WCAG 2.1 Success Criterion 1.4.3 Contrast (Minimum)
9.1.4.4 Resize text	Inspection	Check that the ICT is a web page then, 1. Check that text resizing mechanism is provided and it works with and without assistive technology. 2. Check that the page does not lose any text or features. Check that the document does not fail WCAG 2.1 Success Criterion 1.4.4 Resize text
9.1.4.5 Images of text	Inspection	Check that the ICT is a web page then, 1. Change the font size of the page using provided option or through the browser. 2. If this change is applicable to all the text on the page, then there are no images of text present. 3. If the font size doesn't respond to the changes, then that particular element could be an image of text. Check that the document does not fail WCAG 2.1 Success Criterion 1.4.5 Images of Text
9.1.4.6 Void 9.1.4.7 Void 9.1.4.8 Void 9.1.4.9 Void		
9.1.4.10 Reflow	Inspection	Check that the ICT is a web page then, 1. Turn on the magnification software. 2. Zoom/magnify the user interface by 400 percent. 3. Check that page is navigable and readable without losing any text and features. Check that the document does not fail WCAG 2.1 Success Criterion 1.4.10 Reflow

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Table 1(e) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria

9.1.4.11 Non-text contrast	Inspection	Check that the ICT is a web page then,
		1. Identify non-text elements like icons, graphs, interactive elements present on the page.
		2. Ensure that icons, graphical elements do not have a text alternative present, and they are the only means via which the meaning of the content is being communicated to users.
		3. For icons and graphs:
		   a. take a screenshot of the icons and graph and using colour picker choose the value of the element and the adjacent colour. Adjacent colours are the ones that are right next to them.
		   b. Using those values, check the colour contrast to be 3:1 between the element colour and the adjacent element colour.
		4. For interactive elements:
		   a. Trigger different states that an element may have. For ex, focused, selected, hovered etc.
		   b. Take a screenshot of the elements in those triggered states and using colour picker choose the colour codes of the element and the adjacent colour of the element.
		   c. Using those values, check the colour contrast to be 3:1 between them.
		Check that the document does not fail WCAG 2.1 Success Criterion 1.4.11 Non-text Contrast

9.1.4.12 Text spacing	Inspection	Check that the ICT is a web page then, 1. Check that the text on the page does not overlap or wrap after adjusting the text spacing between two lines. 2. *Check that, for Indian languages, text spacing is as per the font standard specified in IS/ISO/IEC 14496-22 : 2019. Check that the document does not fail WCAG 2.1 Success Criterion 1.4.12 Text spacing
9.1.4.13 Content on hover or focus	Inspection	Check that the ICT is a web page then, 1. Identify the element on the page which displays additional information when hovered or focused. 2. Make sure that this additional content is dismissible without moving the focus. 3. Check that this newly displayed content is hoverable. 4. Check that this content remains visible until the hover or focus trigger is removed. Check that the document does not fail WCAG 2.1 Success Criterion 1.4.13 Content on Hover or Focus
9.2 Operable		
9.2.1 Keyboard accessible		
9.2.1.1 Keyboard	Inspection	Check that the ICT is a web page then, 1. using a keyboard, voice or switch, this requirement can be tested. 2. In case of the keyboard, using tab key or arrow key, ensure that all the content and functionality is usable by keyboard alone. Check that the document does not fail WCAG 2.1 Success Criterion 2.1.1 Keyboard

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* These procedures are applicable in respect of informative requirements only and, as such, are not part of normative requirements. These may be included based on user requirement in applicable cases.

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Table 1(e) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
9.2.1.2 No keyboard trap	Inspection	Check that the ICT is a web page then: 1. Turn on the screen reader. 2. swipe or tab through all the elements on the page. 3. Ensure that the screen reader focus doesn't get trapped on any element. Meaning, user is able to swipe in and out of the elements present on the page. 4. Now, turn off the screen readers and repeat step 3 to ensure that there are no swipe or keyboard traps present. Check that the document does not fail WCAG 2.1 Success Criterion 2.1.2 No Keyboard Trap
9.2.1.3 Void		
9.2.1.4 Character key shortcuts	Inspection	Check that the ICT is a web page then, 1. Identify any element on the page which has character key shortcut. 2. Check if it allow user to enable/disable this shortcut. Check that the document does not fail WCAG 2.1 Success Criterion 2.1.4 Character Key Shortcuts
9.2.2 Enough Time		

9.2.2.1 Timing adjustable	Inspection	Check that the ICT is a web page then
		1. Turn on the screen reader.
		2. Leave the web page idle for the time which is needed to trigger the session extension functionality if present.
		3. Once the session time out functionality is triggered, ensure that a user can do the following:
		  a. Turn off the session extension functionality OR
		  b. Before you encounter the time out, you can adjust the time limit to at least 10 times the length of the default setting.
		  c. You are warned before the time limit expires, are given at least 20 seconds to extend the time limit, and then can extend the time limit at least 10 times longer than the default.
		4. Turn off the screen readers and repeat step to ensure that mobility users are able to access the session time out functionality as well."
		Check that the web page does not fail WCAG2.1 Success Criterion 9.2.2.1 Timing Adjustable

9.2.2.2 Pause, stop, hide	Inspection	Check that the ICT is a web page then, 1. Identify all the moving, scrolling, blinking or autoupdating content present on the page. Ensure that these should last for more than 5 seconds and is presented along with other essential information. 2. Check that the moving, blinking, scrolling or autoupdating content is provided with pause, stop or hide mechanism. 3. This is applicable to all the content of the page including informative and decorative. " Check that the document does not fail WCAG 2.1 Success Criterion 2.2.2 Pause, Stop, Hide
9.2.3 Seizures and physical reactions		

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Table 1(e) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
9.2.3.1 Three flashes or below threshold	Inspection	Check that the ICT is a web page then, 1. Identify any element on the page which flashes or blinks (general flash or red flash). 2. Count the number of times an element flashes or blinks (general flash or red flash) in any one-second period, or 3. Count the number of flashes or blinks (general flash or red flash) in 10 s, and divide by 10, to verify no more than three flashes or blinks occur per second. 4. This is applicable to all the elements on the page including informative and decorative." Check that the document does not fail WCAG 2.1 Success Criterion 2.3.1 Three Flashes or Below Threshold
9.2.4 Navigable		
9.2.4.1 Bypass blocks	Inspection	Check that the ICT is a web page then, 1. Check whether the users can bypass blocks of content that are repeated on multiple Web pages. 2. Identify the link on the web page to bypass the repeated content. 3. Ensure that provided link is operable only using the keyboard. 4. Ensure that once this provided link is activated the focus is moving to main content area. Check that the document does not fail WCAG 2.1 Success Criterion 2.4.1 Bypass Blocks
9.2.4.2 Page titled	Inspection	Check that the ICT is a web page then, 1. Ensure that web page displays the title on the title bar of the user agent. 2. Ensure that title of the web page is meaningful and descriptive. Check that the document does not fail WCAG 2.1 Success Criterion 2.4.2 Page Titled
9.2.4.3 Focus order	Inspection	Check that the ICT is a web page then, 1. Turn on the screen reader. 2. Ensure that the focus moves from element to element in an order that preserves the meaning and operability of the web page. 3. Interact with dynamic content such as modals, adding or deleting content, etc. Ensure that focus is managed appropriately as content is added or removed from the page. Check that the document does not fail WCAG 2.1 Success Criterion 2.4.3 Focus Order
9.2.4.4 Link purpose (in context)	Inspection	Check that the ICT is a web page then, 1. Using a screen reader navigate through each link element. 2. Listen that the link texts are meaningful by themselves, meaning when the user listens to link text, user must be made aware of the link purpose or destination. Check that the document does not fail WCAG 2.1 Success Criterion 2.4.4 Link Purpose (In Context)
9.2.4.5 Multiple ways	Inspection	Check that the ICT is a web page then, 1. Check if the web page has more than one way provided to locate a Web page within a set of Web pages except where the Web Page is the result or a step in a process. 2. Ensure there is more than one way to access a webpage, for example, by using a search function, site map, standard navigation, etc. Check that the document does not fail WCAG 2.1 Success Criterion 2.4.5 Multiple Ways

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Table 1(e) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
9.2.4.6 Headings and labels	Inspection	Check that the ICT is a web page then, 1. Using the screen reader navigate to each heading element on the screen. 2. Check that it provides enough description about its content and surrounding text. 3. Navigate to each form field which has label element. 4. Check that this label described the usage of the form field. Check that the document does not fail WCAG 2.1 Success Criterion 2.4.6 Headings and Labels
9.2.4.7 Focus visible	Inspection	Check that the ICT is a web page then, 1. Identify all the interactive elements on the web page. 2. Using the tab key on the keyboard, tab through all the interactive elements on the web page. 3. Check that all the interactive elements have some form of identification of focus available. Browser default focus indicator is acceptable to meet this requirement. Check that the document does not fail WCAG 2.1 Success Criterion 2.4.7 Focus Visible
9.2.5 Input modalities		
9.2.5.1 Pointer gestures	Inspection	Check that the ICT is a web page then, 1. Check for any functionality that can be triggered by: a) Path-based gestures (see description of path-based gestures below) OR b) Multipoint gestures (see description of multipoint gestures below) c) For each functionality that can be triggered by path-based gestures or multipoint gestures, verify that the functionality can also be operated with the use of single-pointer actions that are not path-based (such as taps, double taps, long presses, clicks, click and holds, double clicks, or dragging actions that are not path-based). d) Exceptions exist if the functionality is essential. Check that the document does not fail WCAG 2.1 Success Criterion 2.5.1 Pointer Gestures
9.2.5.2 Pointer cancellation	Inspection	Check that the ICT is a web page then, 1. Identify all controls on the page with actions that are irreversible. 2. If that control (with an irreversible action) can be triggered by a single-pointer touch, make sure that at least one of the following is true: a. No Down-Event-The action triggers on the up event. (The action is not triggered on the down event). b. Abort/Undo-The action triggers a confirmation dialogue, giving the user an option to abort/undo. c. Up Reversal - The action that would be triggered on the down event (for example, placing your finger on the screen) can be reversed by releasing the pointer outside the trigger area (for example, sliding the finger off the control and then lifting it off the screen). Check that the document does not fail WCAG 2.1 Success Criterion 2.5.2 Pointer Cancellation

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Table 1(e) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria

9.2.5.3 Label in name	Inspection	Check that the ICT is a web page then,
		1. Identify all controls in the web page that have a visible text label.
		2. Using screen reader, put focus on the control.
		   a. Ensure the entire onscreen visible text label is EITHER:
		   b. An exact match to the label announced by screen reader OR
		   c. Is contained within the label announced by screen reader (in the same order presented visually)
		Check that the document does not fail WCAG 2.1 Success Criterion 2.5.3 Label in Name

9.2.5.4 Motion actuation	Inspection	Check that the ICT is a web page then,
		1. Identify any functionality that can be triggered by:
		   a. Device motion (such as shaking or tilting the device) OR
		   b. User motion detected by a device.
		2. For each functionality that can be triggered by motion actuation verify that both of the following are true:
		   a. Motion actuation can be disabled AND
		   b. The functionality can be operated without using motion
		Check that the document does not fail WCAG 2.1 Success Criterion 2.5.4 Motion Actuation

9.3 Understandable		
9.3.1 Readable		
9.3.1.1 Language of page	Inspection	Check that the ICT is a web page then, 1. Inspect the page source code to check that lang attribute is present AND the provided lang attribute is valid to the default page language. 2. In case the lang attribute is missing or inaccurate or wrong, this requirement is not met. Check that the document does not fail WCAG 2.1 Success Criterion 3.1.1 Language of Page
9.3.1.2 Language of parts	Inspection	Check that the ICT is a web page then, 1. Identify any section/paragraph on the page which is not in the default page language. For example web page is in English and there is one section is having Hindi text. 2. Check that lang attribute is properly defined for this section. Check that the document does not fail WCAG 2.1 Success Criterion 3.1.2 Language of Parts
9.3.2 Predictable		
9.3.2.1 On focus	Inspection	Check that the ICT is a web page then, 1. Turn on the screen reader. 2. Swipe or tab through the page from top to bottom. 3. Check that no unexpected change of context as any of the components receive focus. 4. Under change of context we can consider focus moving to different area or opening up a new modal dialog. Check that the document does not fail WCAG 2.1 Success Criterion 3.2.1 On Focus

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Table 1(e) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
9.3.2.2 On Input	Inspection	Check that the ICT is a web page then, 1. Turn on the screen reader. 2. Interact with any of the input control on the screen, for example entering text in a input box, opening a dropdown. 3. Check that no unexpected change of context as you interact with any control. 4. Under change of context we can consider focus moving to different area or opening up a new modal dialog. Check that the document does not fail WCAG 2.1 Success Criterion 3.2.2 On Input*
9.3.2.3 Consistent navigation	Inspection	Check that the ICT is a web page then, 1. Check that users who interact with repeated content across Web pages to be able to predict the location of the content they are looking for and find it more quickly when they encounter it again. 2. Check that use of consistent presentation and layout throughout the web site for users who interact with repeated content within a set of Web pages and need to locate specific information or functionality more than once. 3. Check that repeated components occur in the same order on each page of a page or site. Check that the document does not fail WCAG 2.1 Success Criterion 3.2.3 Consistent Navigation
9.3.2.4 Consistent identification	Inspection	Check that the ICT is a web page then: 1. Check that the web page ensures consistent identification of functional components that appear repeatedly within a set of Web pages. 2. Ensure that same functionality within a set of Web pages is identified consistently. Check that the document does not fail WCAG 2.1 Success Criterion 3.2.4 Consistent Identification
9.3.3 Input assistance		
9.3.3.1 Error identification	Inspection	Check that the ICT is a web page then: 1. Identify if any user form presents on the web page. 2. Complete every form control, deliberately entering user input that falls outside the required format or values or leaving required fields blank and submit the form. 3. If an input error is detected, verify that BOTH of the following are true: a. The form control that is in error is identified in text. Options include: i) Visible text on page ii) Alternative text on an image (using screen reader, listen to the alternative text) iii) Text that is programmatically associated with the control (Using screen reader, move to the control and ensure that the error message is read along with the control type and label) b) The error is described to the user in text. Options include: i) Visible text on screen ii) Alternative text on an image (using screen reader, listen to the alternative text) Using screen reader, ensure each error message can be read with screen reader. Check that the document does not fail WCAG 2.1 Success Criterion 3.3.1 Error Identification

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* These procedures are applicable in respect of informative requirements only and, as such, are not part of normative requirements. These may be included based on user requirement in applicable cases.

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Table 1(e) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
9.3.3.2 Labels or instructions	Inspection	Check that the ICT is a web page then, 1. visually identify each form control on the page. 2. Verify that each form control has a label that is always visible 3. required fields are identified visually and programmatically or via error text 4. Any input that requires specific data or format is provided for all users and not only to users without disabilities Check that the document does not fail WCAG 2.1 Success Criterion 3.3.2 Labels or Instructions.
9.3.3.3 Error suggestion	Inspection	Check that the ICT is a web page then, 1. Identify any form on the page. 2. Complete every form control, deliberately entering user input that falls outside the required format or values and submit the form. 3. If an input error is automatically detected, verify that the error message gives a suggestion about how to fix it. 4. Using screen reader, ensure each error message with the suggestion can be read properly. Check that the document does not fail WCAG 2.1 Success Criterion 3.3.3 Error Suggestion

9.3.3.4 Error prevention (legal, financial, data)	Inspection	Check that the ICT is a web page then,
		1. Identify any module on the page where a user action can cause an important legal, financial, test/exam or unrecoverable/unchangeable user data transaction to occur.
		2. Confirm that AT LEAST ONE of the following is true:
		  a. Reversible: Instructions are provided explaining how to reverse or cancel the transaction.
		  b. Verified: Data entered by the user is provided for review before final submission, and the user is able to make changes to this data.
		  c. Confirmed: A mechanism (such as a checkbox) is provided for the user to confirm the transaction.
		Check that the document does not fail WCAG 2.1 Success Criterion 3.3.4 Error Prevention (Legal, Financial, Data)

9.4 Robust		
9.4.1 Compatible		
9.4.1.1 Parsing	Inspection	Check that the ICT is a web page then, 1. Use any HTML validator tool and type in the URL of the webpage. 2. Identify any start or end tags issue or presence of duplicate attributes or id's not being unique. 3. If there are issues around those areas then this requirement fails. 4. Semi-automated tools are recommended to perform this test procedure. Check that the document does not fail WCAG 2.1 Success Criterion 4.1.1 Parsing

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Table 1(e) (*Concluded*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria

9.4.1.2 Name, role, value	Inspection	Check that the ICT is a web page then
		
		1. Using screen reader, navigate through each user interface component.
		2. Make sure the screen reader correctly conveys (see expectations detailed below) the following information about each component:
		  a. Its role: For example, button, link, switch, picker, slider, stepper, switch, text field, alert, tab, etc.
		  b. Its name: For example, a label for a form control or button, the name of the tab, the label of a switch, etc.
		3. If applicable, its value or state: for example, on/off, selected, dimmed, adjustable, expanded/collapsed, slider's value, textfield's value, "tab _ of _", etc.
		
		Check that the web page does not fail WCAG2.1 Success Criterion 4.1.2 Name, Role, Value

9.4.1.3 Status messages	Inspection	Check that the ICT is a web page then,
		
		1. Identify any status messages that can appear on the page. Status messages are:
		  a. Defined as a message that provides information to the user on the success or results of an action (confirmation message, updated shopping cart, etc), on the waiting state of an application, on the progress of a process, or on the existence of errors.
		  b. Added to the page but do not receive focus.
		2. Using screen reader, trigger each status message and confirm that the newly added status message is automatically announced by the screen reader without moving focus to the message.
		
		Check that the document does not fail WCAG 2.1 Success Criterion 4.1.3 Status Messages

9.5 WCAG 2.1 AAA Success Criteria(informative)		

9.6 WCAG Conformance requirements	Inspection	Check that following five WCAG 2.1 conformance requirements meet in the web pages:
		
		1. Conformance level: One of the following levels of conformance is met in full.
		  Level A: For level A conformance (the minimum level of conformance)
		  Level AA: For level AA conformance.
		2. Full pages: Conformance (and conformance level) is for full Web page(s) only and cannot be achieved if part of a Web page is excluded.
		3. Complete processes: When a web page is one of a series of web pages presenting a process (that is, a sequence of steps that need to be completed to accomplish an activity), all Web pages in the process conform at the specified level or better.
		4. Only accessibility-supported ways of using technologies: Only accessibility-supported ways of using technologies are relied upon to satisfy the success criteria.
		5. Non-interference: If technologies are used in a way that is not accessibility supported, or if they are used in a non-conforming way, then they do not block the ability of users to access the rest of the page.

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Table 1 (f) Non-web Documents

(*Clause* 6.6)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
10.0 General (Informative)		
10.1 Perceivable		
10.1.1 Text alternatives		
10.1.1.1 Non-text content	Inspection	Check that the ICT is a non-web document and there is presence of non-text content. 1. Locate any non-text content present on the document. Examples of non-text content are images, graphs, figures etc. 2. Using a screen reader software, verify that there is text alternative present for these non-text content. 3. Not all non-text content needs text alternative to be present. Any non-text element which already has a text equivalent present doesn't have to be exposed to screen reader users. 4. When the text alternative is needed for the image, check that it is meaningful and descriptive of the image that is present. Check that the document does not fail WCAG 2.1 Success Criterion 1.1.1 Non-text content
10.1.2 Time-based media		

10.1.2.1 Audio-only and video-only (pre-recorded)	Inspection	Check that the ICT is a non-web document and has multimedia [audio/video] present in the content.
		
		1. If the content is only audio, check if the audio content is repetitive and describes the content in text elsewhere in the same document. Then the following tests are not required.
		
		  a. Identify the text transcript present for the audio.
		
		  b. If text transcript is present, then ensure that it has all the essential dialogs, identifies speakers and describes all essential sound effects for the audio only content.
		
		2. If the content is a video, check if the video content is repetitive and describes the content in text elsewhere in the same document. Then the following tests are not required.
		
		  a. Identify the video content.
		
		  b. For the unique video content, text description is mandatory. Verify that either an audio description OR text description is provided for the essential visual content in the video.
		
		  c. In either case of audio description or text description, check that important scenes and any other visual information that is not being conveyed via dialogues is being presented to visually impaired user.
		
		Check that the document does not fail WCAG 2.1 Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded)

10.1.*2.2 Captions (pre-recorded)*	Inspection	Check that the ICT is a non-web document and has video in the content then,
		
		1. Check for the presence of captions in the video.
		
		2. When captions are present, check that
		
		  a. Captions are visible with the required colour contrast between the text and the background.
		
		  b. Identify speakers and any background noises.
		
		  c. Captions are in sync with the video content.
		
		Check that the document does not fail WCAG 2.1 Success Criterion 1.2.2 Captions (Prerecorded)

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Table 1 (f) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
10.1.2.3 Audio description or media alternative (pre-recorded)	Inspection	Check that the ICT is a non-web document and has video in the content. 1. If the video content does not provide additional information where sight is needed to understand the content then audio description is not a mandate for this requirement. 2. If the video content contains additional information which needs sight to perceive it, then ensure the following: a. Identify the video content. b. Verify that either an audio description OR text description is provided for the essential visual content in the video. c. If text transcript is present then ensure that it has all the essential dialogs, identifies speakers and describes all essential sound effects for the audio only content. d. In case of audio description being present, check that important scenes and any other visual information that is not being conveyed via dialogues is being presented to visually impaired users. Check that the document does not fail WCAG 2.1 Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded)
10.1.2.4 Captions (live)	Inspection	Check that the ICT is a non-web document and has live video in the content then: 1. Check for the presence of captions in the live video. 2. When captions are present, check that : a. Captions are visible with the required colour contrast between the text and the background. b. Identifies speakers and any background noises. c. Captions are in sync with the video content. Check that the document does not fail WCAG 2.1 Success Criterion 1.2.4 Captions (Live)
10.1.2.5 Audio description (pre-recorded)	Inspection	Check that the ICT is a non-web document and has video in the content then, 1. If the video content does not provide additional information where sight is needed to understand the content, then audio description is not a mandate for this requirement. 2. If the video content contains additional information which needs sight to perceive it then ensure the following: a. Verify that an Audio Description is provided for the essential visual content in the video that requires sight to understand. b. In case of audio description being present, check that important scenes and any other visual information that is not being conveyed via dialogues is being presented to visually impaired users. Check that the document does not fail WCAG 2.1 Success Criterion 1.2.5 Audio Description (Prerecorded)
10.1.3 Adaptable		

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Table 1 (f) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria

10.1.3.1 Info and relationships	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then,
		
		 1. Identify content that is conveying information and relation via visual representation of the content such as headings being big and bold, data presented in table to convey the relationship, form fields presented with labels to convey the intent of the form fields and representing content in chronological order.
		
		 2. To ensure that headings are programmatically being announced to screen reader users, use the below testing steps:
		   a. Navigate through the content that appears like a heading using screen reader
		   b. Listen to the role or trait of heading being announced for all the content that appears like a heading.
		
		 2. To ensure that relationship between content in the tables is being announced to screen reader users, use the below testing steps:
		   a. Navigate through the content that appears like tables, content present in rows and columns, using screen reader
		   b. Listen to header text being read for each individual text present in the data cell of the table.
		
		 3. To ensure that the form fields information is being announced to the screen reader appropriately, use the below testing steps:
		   a. Navigate through the form fields present on the document using the screen reader
		   b. Listen to the form label being announced along with the form field role or trait. Requirement for this requirement is to hear the label being present for the form fields being present programmatically.
		
		 4. To insure that the content represented as a list is being announced appropriately to screen reader users, use the below testing steps:
		   a. Navigate through the content that appears like a list using screen reader
		   b. Listen to "in and out of list" or number of number for each list items announcement being present for the list content.*
		
		 Check that the document does not fail WCAG 2.1 Success Criterion 1.3.1 Info and Relationships

10.1.3.2 Meaningful sequence	Inspection	Check that the ICT is a non-web document then, 1. Using screen reader go over the content present in the document. 2. Check that all the content present is announced to screen reader users in a meaningful and appropriate order. 3. Check that no content is being skipped by screen reader software AND that no content that is visually hidden is being announced to screen reader users. Check that the document does not fail WCAG 2.1 Success Criterion 1.3.2 Meaningful Sequence
10.1.3.3 Sensory characteristics	Inspection	Check that the ICT is a non-web document then, 1. Go over the content present on the document. 2. Check for any instructions related to understanding content or operating content. If any of those instructions refer to visual characteristics, such as shape, colour, size, visual location, orientation or sound cue then check that there is a non-sensory characteristic instruction is present. Check that the document does not fail WCAG 2.1 Success Criterion 1.3.3 Sensory Characteristics

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Table 1 (f) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
10.1.3.4 Orientation	Inspection	Check that the ICT is a non-web document then: 1. Check to ensure that device lock is disabled on the devices. 2. Check the application and or document in the default orientation of portrait mode. 3. Now change the orientation of the application and or document by turning the device to change its orientation from portrait to landscape mode. Note that the changes to design or to the content is permissible to be different in different orientations as long as the content and functionality is present in both the orientations. Check that the document does not fail WCAG 2.1 Success Criterion 1.3.4 Orientation
10.1.3.5 Identify input purpose	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then: 1. Turn on the screen reader. 2. Identify the form fields on the document. 3. Check if screen reader is giving any information about the input field, for example Enter telephone number without STD code, e-mail id field. Check that the document does not fail WCAG 2.1 Success Criterion 1.3.5 Identify Input Purpose
10.1.4 Distingishable		

10.1.4.1 Use of colour	Inspection	Check that the ICT is a non-web document then,
		1. Check the content present on the document for scenarios where colour is being used alone to convey information. Examples are charts, graphs where colour is used to distinguish different elements being presented in the graph.
		  a. When content is presented using colour alone, then check to ensure that the same information is presented in text so that colour blind users would still be able to get all the information. If graphs are accompanied with tabular data of the content that is being presented in the graph then this requirement is met.
		2. Another scenario to look for are links being present in between blocks of text in paragraphs. When colour alone is used as the only means to differentiate links and text then colour blind users would not even know the existence of the same.
		  a. When links are using colour alone to distinguish themselves, then ensure that an additional visual indicator like underline or any other indicator OR if the colour contrast between the link text and the surrounding non-link text is 3:1 then this requirement is met.
		Check that the document does not fail WCAG 2.1 Success Criterion 1.4.1 Use of Colour

10.1.4.2 Audio control	Inspection	Check that the ICT is a non-web document and has multimedia [audio/ video] in the content then,
		1. If the multimedia automatically starts playing audio when you open the document or anytime during the operation that lasts for more than three seconds, then:
		  a. The audio can be paused, stopped, or muted.
		  b. Check there is a mechanism to adjust the volume (independent of overall device volume).
		Check that the document does not fail 'document success criterion for audio control' given in clause **10.1.4.2** of IS 17802 (Part 1).

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Table 1 (f) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria

10.1.4.3 Contrast (minimum)	Inspection	Check that the ICT is a non-web document then:
		
		1. Check for text on the document that may have poor colour contrast. Identify the text that is not easily readable by users. examples are light grey text over white background etc.
		2. Using an automated tool, pick the colours of the text and the background. Test the codes for colour contrast of 4.5:1 for regular text and 3:1 for large text.
		   a. Regular text is anything below 12 point.
		   b. Large text is 14 point bold and anything above 18 point.
		
		Check that the document does not fail WCAG 2.1 Success Criterion 1.4.3 Contrast (Minimum)

10.1.4.4 Resize text	Inspection	Check that the ICT is a non-web document then, 1. Check that text resizing mechanism is provided and it works with and without assistive technology. 2. Check that the document does not lose any text or feature after resizing up to 200 percent. Check that the document does not fail WCAG 2.1 Success Criterion 1.4.4 Resize text
10.1.4.5 Images of text	Inspection	Check that the ICT is a non-web document then: 1. Use CTRL + A or CMD + A to select all the text on the page/document, check whether any information is not selected. 2. If there is such content, then it could be an image of text. Check that the document does not fail WCAG 2.1 Success Criterion 1.4.5 Images of text
10.1.4.6 Void 10.1.4.7 Void 10.1.4.8 Void 10.1.4.9 Void		
10.1.4.10 Reflow	Inspection	Check that the ICT is a non-web document then, 1. Turn on the magnification software. 2. Zoom/magnify the user interface by 400 percent. 3. Check that document is navigable and readable without losing any text and features. Check that the document does not fail WCAG 2.1 Success Criterion 1.4.10 Reflow given in clause **10.1.4.10** of IS 17802 (Part 1).

10.1.4.11 Non-text contrast	Inspection	Check that the ICT is a non-web document then:
		
		1. Identify non-text elements like icons, graphs, interactive elements present on the page.
		2. Ensure that icons, graphical elements do not have a text alternative present, and they are the only means via which the meaning of the content is being communicated to users.
		3. For icons and graphs:
		   a. Take a screenshot of the icons and graph and using colour picker choose the value of the element and the adjacent colour. Adjacent colours are the ones that are right next to them.
		   b. Using those values, check the colour contrast to be 3:1 between the element colour and the adjacent element colour.
		4. For interactive elements:
		   a. Trigger different states that an element may have. For example, focused, selected, hovered etc.
		   b. Take a screenshot of the elements in those triggered states and using colour picker choose the colour codes of the element and the adjacent colour of the element.
		   c. Using those values, check the colour contrast to be 3:1 between them.
		
		Check that the document does not fail WCAG 2.1 Success Criterion 1.4.11 Non-text Contrast

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Table 1 (f) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
10.1.4.12 Text spacing	Inspection	Check that the ICT is a non-web document then, 1. Check that the text on the page does not overlap or wrap after adjusting the text spacing between two lines Check that the document does not fail WCAG 2.1 Success Criterion 1.4.12 Text spacing.
10.1.4.13 Content on hover or focus	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then, 1. Identify the element on the document which displays additional information when hovered or focused. 2. Make sure that this additional content is dismissible without moving the focus. 3. Check that this newly displayed content is hoverable. 4. Check that this content remains visible until the hover or focus trigger is removed. Check that the document does not fail WCAG 2.1 Success Criterion 1.4.13 Content on Hover or Focus
10.2 Operable		
10.2.1 Keyboard accessible		

10.2.1.1 Keyboard	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then
		
		1. Using an external keyboard, this requirement can be tested.
		2. If using external keyboard:
		  a. Connect the external keyboard with the ICT.
		  b. Using tab key or arrow key, ensure that all the content and functionality is usable by keyboard alone.
		
		Check that the document does not fail WCAG 2.1 Success Criterion 2.1.1 Keyboard

10.2.1.2 No keyboard trap	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then, 1. Turn on the screen reader 2. Now swipe or tab through the document. 3. Ensure that the screen reader focus doesn't get trapped on any element. Meaning, user is able to swipe in and out of the elements present on the page. 4. Now, turn off the screen reader and repeat step 3 to ensure that there are no swipe or keyboard traps present. Check that the document does not fail 'Document success criterion for No keyboard trap' given in clause **10.2.1.2** of IS 17802 (Part 1).
10.2.1.3 Void		
10.2.1.4 Character key shortcuts	Inspection	Check that the ICT is a non-web document and has interactive form controls then: 1. Identify any element on the document which has character key shortcut. 2. Check if it allows user to enable/disable this shortcut. Check that the document does not fail WCAG 2.1 Success Criterion 2.1.4 Character Key Shortcuts

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Table 1 (f) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
10.2.2 Enough time		
10.2.2.1 Timing adjustable	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then: 1. Turn on the screen reader. 2. Leave the document idle for the time which is needed to trigger the session extension functionality if present. 3. Once the session time out functionality is triggered, ensure that a user can do the following: a. Turn off the session extension functionality. b. Before you encounter the time out, you can adjust the time limit to at least 10 times the length of the default setting. c. You are warned before the time limit expires, are given at least 20 s to extend the time limit, and then can extend the time limit at least 10 times longer than the default. 4. Turn off the screen reader and repeat step to ensure that mobility users are able to access the session time out functionality as well. Check that the document does not fail 'Document success criterion for Timing adjustable', given in clause **10.2.2.1** of IS 17802 (Part 1).
10.2.2.2 Pause, stop, hide	Inspection	Check that the ICT is a non-web document and has moving, scrolling, blinking or autoupdating elements in the content then, 1. Ensure that these should last for more than 5 s and is presented along with other essential information. 2. Check that the moving, blinking, scrolling or autoupdating content is provided with pause, stop or hide mechanism. Check that the document does not fail 'Document success criterion: Pause, stop, hide', given in clause **10.2.2.2** of IS 17802 (Part 1).
10.2.3 Seizures and physical reactions		
10.2.3.1 Three flashes or below threshold	Inspection	Check that the ICT is a non-web document and has flashing element in the content then: 1. Count the number of times an element flashes or blinks(general flash or red flash) in any one-second period, or 2. Count the number of flashes or blinks(general flash or red flash) in 10 s, and divide by 10, to verify no more than three flashes or blinks occur per second. Check that the document does not fail 'Document success criterion for Three flashes or below threshold' given in clause **10.2.3.1** of IS 17802 (Part 1).
10.2.4 Navigable		
10.2.4.1 Void		
10.2.4.2 Document titled	Inspection	Check that the ICT is a non-web document then, 1. With screen reader turned on, open the document. 2. When the document loads, ensure that one of the following is announced: a. A descriptive document title. b. *The first content element (that serves as a descriptive heading). c. *An element within the navigation bar (such as a back or menu button) AND you can swipe to a descriptive heading or title. Check that the document does not fail 'Document success criterion for Document titled' given in clause **10.2.4.2** of IS 17802 (Part 1).

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Table 1 (f) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
10.2.4.3 Focus order	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then: 1. Turn on the screen reader. 2. Ensure that the focus moves from element to element in an order that preserves the meaning and operability of the document. 3. Interact with dynamic content such as modals, adding or deleting content, etc. Ensure that focus is managed appropriately as content is added or removed from the document. Check that the document does not fail 'Document success criterion for Focus order' given in clause **10.2.4.3** given in IS 17802 (Part 1).
10.2.4.4 Link purpose (in context)	Inspection	Check that the ICT is a non-web document and has hyperlinks in the content then: 1. Turn on the screen reader and move through the links in the document. 2. Listen that the link texts are meaningful by themselves, meaning when the user listens to link text, user must be made aware of the link purpose or destination. Check that the document does not fail WCAG 2.1 Success Criterion 2.4.4 Link Purpose (In Context)
10.2.4.5 Void		

10.2.4.6 Headings and labels	Inspection	Check that the ICT is a non-web document then:
		1. Go over each heading and label on the document that are present.
		2. Check to ensure that heading and labels are:
		  a. Provides a clear description of the content in that section or form field.
		  b. Gives users an effective overview of the content and its organization.
		Check that the document does not fail WCAG 2.1 Success Criterion 2.4.6 Headings and Labels

10.2.4.7 Focus visible	Inspection	Check that the ICT is a non-web document and has interactive form controls then: 1. Using the tab key on the keyboard, tab through all the interactive elements on the document. 2. Check that all the interactive elements have some form of identification of focus available. Browser default focus indicator is acceptable to meet this requirement. Check that the document does not fail WCAG 2.1 Success Criterion 2.4.7 Focus Visible
10.2.5 Input modalities		

10.2.5.1 Pointer gestures	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then:
		1. Check for any functionality that can be triggered by:
		  a. Path-based gestures (*see* description of path-based gestures below); or
		  b. Multipoint gestures (*see* description of multipoint gestures below).
		2. For each functionality that can be triggered by path-based gestures or multipoint gestures, verify that the functionality can also be operated with the use of single-pointer actions that are not path-based (such as taps, double taps, long presses, clicks, click and holds, double clicks, or dragging actions that are not path-based).
		3. Exceptions exist if the functionality is essential.
		Check that the document does not fail 'Document success criterion for Pointer gestures' given in clause **10.2.5.1** of IS 17802 (Part 1).

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Table 1 (f) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria

10.2.5.2 Pointer cancellation	Inspection	Check that the ICT is a non-web document and has interactive controls with actions that are irreversible then:
		
		1. If that control (with an irreversible action) can be triggered by a single-pointer touch, make sure that at least one of the following is true:
		
		  a. No down-event — The action triggers on the up event. (The action is not triggered on the down event).
		
		  b. Abort/undo — The action triggers a confirmation dialogue, giving the user an option to abort/undo.
		
		  c. Up reversal — The action that would be triggered on the down event (for example, placing your finger on the screen) can be reversed by releasing the pointer outside the trigger area (for example, sliding the finger off the. control and then lifting it off the screen).
		
		Check that the document does not fail 'Document success criterion for Pointer cancellation' given in clause **10.2.5.2** of IS 17802 (Part 1).

10.2.5.3 Label in name	Inspection	Check that the ICT is a non-web document and has interactive controls that have a visible text label then:
		
		1. Using screen reader, put focus on the control.
		
		  a. Ensure the entire onscreen visible text label is EITHER:
		
		  b. An exact match to the label announced by screen reader OR
		
		  c. Is contained within the label announced by screen reader (in the same order presented visually).
		
		Check that the document does not fail WCAG 2.1 Success Criterion 2.5.3 Label in Name

10.2.5.4 Motion actuation	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then,
		
		1. Identify any functionality that can be triggered by:
		
		  a. Device motion (such as shaking or tilting the device) OR
		
		  b. User motion detected by a device.
		
		2. For each functionality that can be triggered by motion actuation verify that both of the following are true:
		
		  a. Motion actuation can be disabled AND.
		
		  b. The functionality can be operated without using motion.
		
		Check that the document does not fail WCAG 2.1 Success Criterion 2.5.4 Motion Actuation

10.3. Understandable		
10.3.1 Readable		
10.3.1.1 Language of document	Inspection	Check that the ICT is a non-web document then: 1. Check the language of the document is programmatically determinable by reading the content using a screen reader. 2. If screen reader has the support for that language, then it should read the content of the document. Check that the document does not fail 'Document success criterion for Language of document' given in clause **10.3.1.1** of IS 17802 (Part 1).
10.3.1.2 Language of parts	Inspection	Check that the ICT is a non-web document and has text in multiple languages then: 1. Identify text that is in a language different from the language of the rest of the document. 2. Using screen reader, ensure that the text is read using the appropriate language library (that is, accent). Check that the document does not fail 'Document success criterion for Language of parts' given in clause **10.3.1.2** of IS 17802 (Part 1).
10.3.2 Predictable		

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Table 1 (f) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
10.3.2.1 On focus	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then: 1. Turn on the screen reader. 2. Swipe or tab through the document from top to bottom. 3. Check that no unexpected change of context as any of the components receive focus. Change of context is defined as change in focus. It means focus moving away from the element which has focus or opening a new modal or screen. Check that the document does not fail WCAG 2.1 Success Criterion 3.2.1 On Focus
10.3.2.2 On input	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then, 1. Turn on the screen reader. 2. Interact with all input controls on the document. 3. Ensure you do not unexpectedly encounter a change of context as you interact with the controls, for example: a. Leaving the last field does not submit the form and trigger a change of context. b. User can enter text in a text field, toggle switches, select checkboxes, and move through a picker control without triggering a context change. c. New screens or dialogs do not automatically launch. Change of context is defined as change in focus. It means focus moving away from the element which has focus, or opening a new modal or screen. Check that the document does not fail WCAG 2.1 Success Criterion 3.2.2 On Input
10.3.3 Input assistance		
10.3.3.1 Error identification	Inspection	Check that the ICT is a non-web document and has form controls in the content then: 1. Complete every form control, deliberately entering user input that falls outside the required format or values or leaving required fields blank and submit the form. 2. If an input error is detected, verify that both of the following are true: a. The form control that is in error is identified in text. b. The error is described to the user in text. Options include: ensure each error message can be read with screen reader. Check that the document does not fail WCAG 2.1 Success Criterion 3.3.1 Error Identification.
10.3.3.2 Labels or instructions	Inspection	Check that the ICT is a non-web document and has form controls in the content then, 1. visually identify each form control on the document. 2. Verify that each form control has a label that is always visible. 3. required fields are identified visually and programmatically or via error text. 4. Any data that requires specific data or format is provided for all users and not only to users without disabilities. Check that the document does not fail WCAG 2.1 Success Criterion 3.3.2 Labels or Instructions
10.3.3.3 Error suggestion	Inspection	Check that the ICT is a non-web document and has form controls in the content then, 1. Complete every form control, deliberately entering user input that falls outside the required format or values and submit the form. 2. If an input error is automatically detected, verify that the error message gives a suggestion about how to fix it. 3. Using screen reader, ensure each error message can be read. Check that the document does not fail WCAG 2.1 Success Criterion 3.3.3 Error Suggestion

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Table 1 (f) (*Continued*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
10.3.3.4 Error prevention (legal, financial, data)	Inspection	Check that the ICT is a non-web document and has interactive form controls in the content then, 1. Identify any section in the document where a user action can cause an important legal, financial, test/exam or unrecoverable/unchangeable user data transaction to occur. 2. Confirm that AT LEAST ONE of the following is true: a. Reversible: Instructions are provided explaining how to reverse or cancel the transaction. b. Verified: Data entered by the user is provided for review before final submission, and the user is able to make changes to this data. c. Confirmed: A mechanism (such as a checkbox) is provided for the user to confirm the transaction. Check that the document does not fail 'Document success criterion for Error prevention (legal, financial, data)', given in clause **10.3.3.4** of IS 17802 (Part 1).
10.4 Robust		
10.4.1 Compatible		
10.4.1.1 Parsing	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then, 1. Using screen reader, navigate through each user interface component. 2. Make sure the screen reader correctly conveys (see expectations detailed below) the following information about each component: a. Its role: For example, button, link, switch, picker, slider, stepper, switch, text field, alert, tab, etc. b. Its name: e.g. a label for a form control or button, the name of the tab, the label of a switch, etc. c. If applicable, its value or state: For example, on/off, selected, dimmed, adjustable, expanded/collapsed, slider's value, textfield's value, "tab _ of _", etc. Check that the document does not fail 'Document success criterion for Parsing', given in clause **10.4.1.1** of IS 17802 (Part 1).
10.4.1.2 Name, role, value	Inspection	Check that the ICT is a non-web document and has interactive elements in the content then: 1. Using screen reader, navigate through each user interface component. 2. Make sure the screen reader correctly conveys (*see* expectations detailed below) the following information about each component: a. Its role: For example, button, link, switch, picker, slider, stepper, switch, text field, alert, tab, etc. b. Its name: For example, a label for a form control or button, the name of the tab, the label of a switch, etc. 3. If applicable, its value or state: For example, on/off, selected, dimmed, adjustable, expanded/collapsed, slider's value, textfield's value, "tab _ of _", etc. Check that the document does not fail 'Document success criterion for Name, role, value', given in **clause 10.4.1.2** of IS 17802 (Part 1).

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Table 1 (f) (*Concluded*)

For Requirements, refer to Respective Clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria

10.4.1.3 Status messages	Inspection	Check that the ICT is a non-web document and has any status messages added to the content then:
		
		1. Identify any status messages that can appear on the document. Status messages are:
		
		   a. Defined as a message that provides information to the user on the success or results of an action (confirmation message, updated shopping cart, etc), on the waiting state of an application, on the progress of a process, or on the existence of errors
		
		   b. Added to the screen but do not receive focus
		
		2. Using screen reader, trigger each status message and confirm that the newly added status message is automatically announced by the screen reader without moving focus to the message.
		
		Check that the document does not fail WCAG 2.1 Success Criterion 4.1.3 Status Messages

10.5 Caption positioning	Advisory only and contains no testable requirements	
10.6 Audio description timing	Advisory only and contains no testable requirements*	

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* These procedures are applicable in respect of informative requirements only and, as such, are not part of normative requirements. These may be included based on user requirement in applicable cases.

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Table 1 (g) Software

(*Clause* 6.6)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.1 Perceivable 11.1.1 Text alternatives 11.1.1 Non-text content		
11.1.1.1.1 Non-text content (open functionality)	Inspection	Check that the ICT is non-web software that provides a user interface, is open for assistive technologies and there is presence of non-text. 1. Identify any non-text images present on any screen. Examples of non-text content are images, graphs, figures etc. 2. Using an assistive technology like screen reader software, verify that there is text alternative present for these non-text content. 3. Note that not all non-text content needs text alternative to be present. Any non-text element presents which already has a text equivalent present doesn't have to be exposed to screen reader users. 4. When the text alternative is needed for the image, then check that the text alternative present for the image is meaningful and descriptive of the image that is present. Check that the software does not fail WCAG 2.1 Success Criterion 1.1.1 Non-text content
11.1.1.1.2 Non-text content (closed functionality)	Testing	Check that the ICT is non-web software that provides a user interface, is closed to assistive technologies and there is presence of non-text: 1. Check that speech output is provided as an alternative for non-text content. 2. Check that if the non-text content is not pure decoration. 3. Check that the non-text content is not used only for visual formatting. Check that the software does not fail WCAG 2.1 Success Criterion 1.1.1 Non-text content
11.1.2 *Time-based media* 11.1.2.1 *Audio-only and video-only (pre-recorded)*		
11.1.2.1.1 Audio-only and video-only (pre-recorded-open functionality)	Inspection	Check that the ICT is non-web software which is open for assistive technologies and there is presence of audio/video. 1. If the content is only audio, then ensure the following: note that if the audio content is repetitive and describes the content in text elsewhere in the same software, then the following tests are not required. a. Identify the text transcript is present for the audio. b. If text transcript is present, then ensure that it has all the essential dialogs, identifies speakers and describes all essential sound effects for the audio only content. 2. If the content is a video, then ensure the following: note that if the video content is repetitive and describes the content in text elsewhere on the same document then the following tests are not required. a. Identify the video content. b. For the unique video content, text description is mandatory. Verify that either an audio description OR text description is provided for the essential visual content in the video. c. In either case of audio description or text description, check that important scenes and any other visual information that is not being conveyed via dialogues is being presented to visually impaired users. Check that the software does not fail WCAG 2.1 Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded)

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.1.2.1.2.1 Pre-recorded audio-only (closed functionality)	Inspection	Check that the ICT is non-web software that provides a user interface which is closed to assistive technologies for screen reading. Pre-recorded auditory information is needed to enable the use of closed functions of ICT. 1. Check that the visual information is equivalent to the pre-recorded auditory output.
11.1.2.1.2.2 Pre-recorded video-only (closed functionality)	Inspection	Check that the ICT is non-web software that provides a user interface which is closed to assistive technologies for screen reading. Pre-recorded video information must enable the use of closed functions of ICT. Speech output is provided as non-visual access to non-text content displayed on closed functionality. 1. Check that the speech output equivalent information for the pre-recorded video content.

11.1.2.2 Captions (pre-recorded)	Inspection	Check that the ICT is non-web software which provides a user interface and there is presence of video.
		
		1. Identify the video content present on the screen.
		
		2. Check for the presence of captions in the audio, video.
		
		3. When captions are present, check that:
		
		  a. Captions are visible with the required colour contrast between the text and the background, refer clause **11.1.4.3** contrast (minimum) of IS 17802 (Part 1) for the same.
		
		  b. Identifies speakers and any background noises.
		
		  c. Captions are in sync with the audio, video content.
		
		Check that the software does not fail WCAG 2.1 Success Criterion 1.2.2 Captions

11.1.2.3 Audi description or media alternative (pre-recorded)		

11.1.2.3.1 Audio description or media alternative (pre-recorded-open functionality)	Inspection	Check that the ICT is non-web software and has video content in user interface.
		
		1. Identify the video content.
		
		2. If the video content does not provide additional information where sight is needed to understand the content, then audio description is not a mandate for this requirement.
		
		3. If the video content contains additional information which needs sight to perceive it then ensure the following:
		
		  a. Verify that an Audio Description is provided for the essential visual content in the video that requires sight to understand.
		
		  b. In case of audio description being present, check that important scenes and any other visual information that is not being conveyed via dialogues is being presented to visually impaired users.
		
		Check that the software does not fail WCAG 2.1 Success Criterion 1.2.3 Audio Description (Prerecorded)

11.1.2.3.2 Audio description or media alternative (pre-recorded-closed functionality)	Inspection	Check that the ICT is non-web software that provides a user interface and user interface is closed to assistive technologies for screen reading. Speech output is provided as non-visual access to non-text content displayed on closed functionality. 1. Check that the speech output presents equivalent information for the (pre-recorded) video content.

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria

11.1.2.4 Captions (live)	Inspection	Check that the ICT is non-web software and has video in its user interface.
		1. Identify the live video content present on the screen.
		2. Check for the presence of captions in the live video.
		3. When captions are present, check that:
		  a. Captions are visible with the required colour contrast between the text and the background, refer clause **11.1.4.3** contrast (minimum) of IS 17802 (Part 1) for the same.
		  b. Identifies speakers and any background noises.
		  c. Captions are in sync with the video content.
		Check that the software does not fail WCAG 2.1 Success Criterion 1.2.4 Captions (Live)

11.1.2.5 Audio description (pre-recorded)	Inspection	Check that the ICT is non-web software and has video in user interface.
		1. Identify the video content.
		2. If the video content does not provide additional information where sight is needed to understand the content, then audio description is not a mandate for this requirement.
		3. If the video content contains additional information which needs sight to perceive it then ensure the following:
		  a. Verify that an audio description is provided for the essential visual content in the video that requires sight to understand.
		  b. In case of audio description being present, check that important scenes and any other visual information that is not being conveyed via dialogues is presented to visually impaired users.
		Check that the software does not fail WCAG 2.1 Success Criterion 1.2.5 Audio Description (Prerecorded)

11.1.3 Adaptable 11.1.3.1 Info and relationships		
11.1.3.1.1 Info and relationships (open functionality)	Inspection	Check that the ICT is non-web software and open for assistive technologies like screen reader. 1. Check that all the visual elements like tables, lists, form fields are programmatically conveyed to the screen reader. 2. Identify each form field like option button, dropdown list, checkbox, edit box, slider on the screen and test that associated label along with role/state is read for each control. 3. Identify any table on the screen and read the column header, row details using screen reader. Check that the software does not fail WCAG 2.1 Success Criterion 1.3.1 Info and Relationships
11.1.3.1.2 Info and relationships (closed functionality)	Inspection	Clause **11.1.3.1.2** of IS 17802 (Part 1) is advisory only and contains no testable requirements.

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.1.3.2 Meaningful sequence		
11.1.3.2.1 Meaningful sequence (open functionality)	Inspection	Check that the ICT is non-web software and it is open for assistive technologies. 1. Using the screen reader, go over the content present in the native application and any screen. 2. Check that all the content present is announced to screen reader users in a meaningful and appropriate order. 3. Check that no content is being missed by screen reader software AND that no content that is visually hidden is being announced to screen reader users. Check that the software does not fail WCAG 2.1 Success Criterion 1.3.2 Meaningful Sequence.
11.1.3.2.2 Meaningful sequence (closed functionality)	Inspection	Clause **11.1.3.2.2** of IS 17802 (Part 1) is advisory only and contains no testable requirements.
11.1.3.3 Sensory characteristics	Inspection	Check that the ICT is non-web software which provides a user interface. 1. Go over the content present on the screen of the native application. 2. Check for any instructions related to understanding or operating content. If any of those instructions refer to visual characteristics such as shape, colour, size, visual location, orientation or sound cue then check that alternative non-sensory characteristic instruction is present. Check that the software does not fail WCAG 2.1 Success Criterion 1.3.3 Sensory Characteristics
11.1.3.4 Orientation	Inspection	Check that the ICT is non-web software which provides a user interface. 1. Ensure that orientation lock is disabled on the device or software. 2. Check the application is in the default orientation of portrait mode. 3. Now change the orientation of the application by turning the device to change its orientation from portrait to landscape mode. Note that the changes to design or to the content is permissible to be different in different orientations as long as the content and functionality is present in both the orientations. Check that the software does not fail WCAG 2.1 Success Criterion 1.3.4 Orientation*
11.1.3.5 Identify input purpose		
11.1.3.5.1 Identify input purpose (open functionality)	Inspection	Check that the ICT is non-web software which supports assistive technology and there is presence of form element. 1. Turn on the screen reader. 2. Identify the form fields on the user interface. 3. Check if screen reader is giving any information about the input field, for e.g. Enter telephone number without STD code, e-mail id field. Check that the software does not fail WCAG 2.1 Success Criterion 1.3.5 Identify Input Purpose
11.1.3.5.2 Identify input purpose (closed functionality)	Inspection	Check that the ICT is non-web software that provides a user interface and user interface is closed to assistive technologies for screen reading. Auditory output is provided as non-visual access to closed functionality. 1. Check that the auditory output is delivered by a mechanism included in or provided with the ICT. 2. Check that the auditory output is delivered by a personal headset that can be connected through a 3.5 mm audio jack or an industry standard connection without requiring the use of vision. Check that the auditory output comprises of purposes from the Input Purposes for User Interface Components section.
11.1.4 Distinguishable		

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* These procedures are applicable in respect of informative requirements only and, as such, are not part of normative requirements. These may be included based on user requirement in applicable cases.

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.1.4.1 Use of colour	Inspection	Check that the ICT is non-web software which provides a user interface. 1. Check the content present on the screen or page for scenarios where colour is being used alone to convey information. Examples are charts, graphs where colour is used to distinguish different elements being presented in the graph. 2. When content is presented using colour alone, then check to ensure that the same information is presented in text so that colour blind users would still be able to get all the information. If graphs are accompanied with tabular data of the content that is being presented in the graph then this requirement is met. 3. Another scenario to look for are links being present in between blocks of text in paragraphs. When colour alone is used as the only means to differentiate links and text then colour blind users would not even know the existence of the same. 4. When links are using colour alone to distinguish themselves, then ensure that an additional visual indicator like underline or any other indicator OR if the colour contrast between the link text and the surrounding non-link text is 3:1 then this requirement is met. Check that the software does not fail WCAG 2.1 Success Criterion 1.4.1 Use of Colour
11.1.4.2 Audio control	Inspection	Check that the ICT is non-web software which provides a user interface. 1. Identify the multimedia elements on any screen of the software. 2. If the multimedia automatically starts playing audio when you launch the software or anytime during the operation that lasts for more than three seconds, then: a. Check that the audio can be paused, stopped. b. Check there is a mechanism to adjust the volume (independent of overall device volume) Check that the software does not fail 'software success criterion for audio control' contained in clause **11.1.4.2** of IS 17802 (Part 1).
11.1.4.3 Contrast (minimum)	Inspection	Check that the ICT is non-web software which provides a user interface. 1. Check for text that may have poor colour contrast. Identify the text that is not easily readable by users. examples are light grey text over white background etc. 2. For mobile applications, take a screenshot of the screen and using an automated tool, pick the colours of the text and the background. Test the codes for colour contrast of 4.5:1 for regular text and 3:1 for large text. a. Regular text is anything below 12 point. b. Large text is 14 point bold and anything above 18 point. Check that the software does not fail WCAG 2.1 Success Criterion 1.4.3 Contrast (Minimum)
11.1.4.4 Resize text		
11.1.4.4.1 Resize text (open functionality)	Inspection	Check that the ICT is non-web software which provides an user interface and it is open for assistive technologies. 1. Text resizing mechanism is provided and it works with and without assistive technology. 2. Check that the software does not lose any text and features after resizing up to 200 percent. Check that the software does not fail WCAG 2.1 Success Criterion 1.4.4 Resize text

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.1.4.4.2 Resize text (closed functionality)	Inspection and measurement	Check that the ICT is non-web software that provides a user interface and user interface is closed to enlargement features of platform or assistive technology and when even viewing distance is specified by the supplier. 1. Measure the height of a capital letter H. 2. Check that it subtends an angle of at least 0.7 degrees at the specified viewing distance.
11.1.4.5 Images of text		
11.1.4.5.1 Images of text (open functionality)	Inspection	Check that the ICT is non-web software and it is open for assistive technologies. 1. Change the font size of the software/user interface. 2. If this change is applicable to all the text on the screen, then there are no images of text present. 3. If the font size doesn't respond to the changes, then that particular element could be an image of text. There is no straight or sure way to test this requirement when it comes to native applications. Check that the software does not fail WCAG 2.1 Success Criterion 1.4.5 Images of Text
11.1.4.5.2 Images of text (closed functionality)	Testing	Check that the ICT is non-web software that provides a user interface and user interface is closed to assistive technologies for screen reading. When the non-text content is presented to users via speech output. 1. Check that speech output is provided as an alternative for non-text content. 2. Check that the non-text content is not pure decoration. 3. Check that the non-text content is not used only for visual formatting. Check that the software does not fail WCAG 2.1 Success Criterion 1.4.5 Images of Text.
11.1.4.6 Void 11.1.4.7 Void 11.1.4.8 Void 11.1.4.9 Void		
11.1.4.10 Reflow	Inspection	Check that the ICT is non-web software which provides a user interface. 1. Turn on the magnification software provided by platform. 2. Zoom/magnify the user interface by 400 percent. 3. Check that user interface is navigable and readable without losing any text and features. Check that the software does not fail 'software success criterion for reflow' given in clause **11.1.4.10** of IS 17802 : (Part 1).

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.1.4.11 Non-text contrast	Inspection	Check that the ICT is non-web software which provides an user interface and there is presence of non-text elements like icon or graphs. 1. Identify non-text elements like icons, graphs, interactive elements present on any screen of the software. 2. Ensure that icons, graphical elements do not have a text alternative present and they are the only means via which the meaning of the content is being communicated to users. 3. For icons and graphs: a. take a screenshot of the icons and graph and using colour picker choose the value of the element and the adjacent colour. Adjacent colours are the ones that are right next to them. b. Based on those values, check the colour contrast to be 3:1 between the element colour and the adjacent element colour. 4. For interactive elements: a. Trigger different states that an element may have. For ex, focused, selected, hovered etc. b. Take a screenshot of the elements in those triggered states and using colour picker choose the colour codes of the element and the adjacent colour of the element. c. based on those values, check the colour contrast to be 3:1 between them. Check that the software does not fail WCAG 2.1 Success Criterion 1.4.11 Non-text Contrast
11.1.4.12 Text spacing	Inspection	Check that the ICT is non-web software which provides a user interface. 1. Check that the text of the user interface does not overlap or wrap after adjusting the text spacing between two lines. Check that the software does not fail WCAG 2.1 Success Criterion 1.4.12 Text spacing.
11.1.4.13 Content on hover or focus	Inspection	Check that the ICT is non-web software which provides a user interface. 1. Identify the element which displays additional information when hovered or focused. 2. Make sure that this newly displayed information is dismissible without moving the focus. 3. Check that this newly displayed content is hoverable. 4. Check that this content remains visible until the hover or focus trigger is removed. Check that the software does not fail WCAG 2.1 Success Criterion 1.4.13 Content on Hover or Focus
11.2 Operable		
11.2.1 Keyboard accessible		
11.2.1.1 Keyboard		
11.2.1.1.1 Keyboard (open functionality)	Inspection	Check that the ICT is non-web software which is open for assistive technologies. 1. Using an external keyboard, this requirement can be tested. 2. Using external keyboard: a. Connect the external keyboard with the device. b. Using tab key or arrow key, ensure that all the content and functionality is usable by keyboard alone. Check that the software does not fail WCAG 2.1 Success Criterion 2.1.1 Keyboard

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.2.1.1.2 Keyboard (closed functionality)	Inspection	Check that the ICT is non-web software that provides a user interface and the user interface is closed to keyboards or keyboard interfaces. 1. Check that all functionality of the user interface is operable without vision.
11.2.1.2 No keyboard trap	Inspection	Check that the ICT is non-web software which is open for assistive technologies. 1. Turn on the screen reader. 2. Using screen reader, swipe or tab through the complete user interface of the software. 3. Ensure that the screen reader focus doesn't get trapped on any element. Meaning, user is able to swipe in and out of the elements present on the page. 4. Now, turn off the screen reader and repeat step 3 to ensure that there are no swipe or keyboard traps present. Check that the software does not fail 'Software success criterion for No keyboard trap' given in clause **11.2.1.1.3** of IS 17802 (Part 1).
11.2.1.3 Void		
11.2.1.4 Character key shortcuts		
11.2.1.4.1 Character key shortcuts (open functionality)	Inspection	Check that the ICT is non-web software that provides user interface and it support at least one assistive technology. 1. Check for the presence of shortcut keys. 2. Review the list of shortcuts and determine if any shortcuts can be triggered by typing only one printable character. 3. If a single character key shortcut exists, ensure that they can be turned off OR remapped OR are active only on focus. Check that the software does not fail WCAG 2.1 Success Criterion 2.1.4 Character Key Shortcuts
11.2.1.4.2 Character key shortcuts (closed functionality)	Inspection	Check that the ICT is non-web software that provides a user interface and the user interface is closed to keyboards or keyboard interfaces. 1. Check that all functionality is operable without vision.
11.2.2 Enough time		
11.2.2.1 Timing adjustable	Inspection	Check that the ICT is non-web software which provides user interface. 1. Turn on the screen reader. 2. Leave the application idle for the time which is needed to trigger the session extension functionality if present. 3. Once the session time out functionality is triggered, ensure that a user can do the following: a. Turn off the session extension functionality OR. b. Before you encounter the time out, you can adjust the time limit to at least 10 times the length of the default setting. c. You are warned before the time limit expires, are given at least 20 s to extend the time limit, and then can extend the time limit at least 10 times longer than the default. 4. Turn off the screen readers and repeat step to ensure that mobility users are able to access the session time out functionality as well." Check that the software does not fail 'software success criterion for timing adjustable' given under clause **11.2.2.1** of IS 17802 (Part 1).

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.2.2.2 Pause, stop, hide	Inspection	Check that the ICT is non-web software that provides an user interface and there is presence of moving, scrolling, blinking or autoupdating element. 1. Identify all the moving, scrolling, blinking or autoupdating content present on thesoftware. Ensure that these should last for more than 5 s and is presented along with other essential information. 2. Check that the moving, blinking, scrolling or autoupdating content is provided with pause, stop or hide mechanism. 3. This is applicable to all the content of the software including informative and decorative. Check that the software does not fail 'Software success criterion for Pause, stop, hide' given under clause **11.2.2.2** of IS 17802 (Part 1).
11.2.3 Seizures and physical reactions		
11.2.3.1 Three flashes or below threshold	Inspection	Check that the ICT is non-web software that provides a user interface and there is presence of flashing element. 1. Identify any element in the user interface which flashes or blinks (general flash or red flash). 2. Count the number of times an element flashes or blinks (general flash or red flash) in any one-second period, or 3. Count the number of flashes or blinks (general flash or red flash) in 10 s, and divide by 10, to verify no more than three flashes or blinks occur per second. 4. This is applicable to all the elements of the software including informative and decorative. Check that the software does not fail 'software success criterion for three flashes or below threshold' given under clause **11.2.3.1** of IS 17802 (Part 1).
11.2.4 Navigable		
11.2.4.1 Void		
11.2.4.2 Void		
11.2.4.3 Focus order	Inspection	Check that the ICT is non-web software that provides a user interface. 1. Turn on the screen reader. 2. Ensure that the focus moves from element to element in an order that preserves the meaning and operability of the interface. 3. Interact with dynamic content such as modals, adding or deleting content, etc. Ensure that focus is managed appropriately as content is added or removed from the screen. Check that the software does not fail 'Software success criterion for focus order' given under clause **11.2.4.3** of IS 17802 (Part 1).
11.2.4.4 Link purpose (in context)	Inspection	Check that the ICT is non-web software that provides a user interface and there is presence of link element. 1. Using the screen reader navigate through each link element. 2. Listen that the link texts are meaningful by themselves, meaning when the user listens to link text, user must be made aware of the link purpose or destination. Check that the software does not fail WCAG 2.1 Success Criterion 2.4.4 Link Purpose (In Context)
11.2.4.5 Void		

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.2.4.6 Headings and labels	Inspection	Check that the ICT is non-web software that provides a user interface. 1. Using the screen reader navigate to each heading element on the software. 2. Check that it provides enough description about its content and surrounding text. 3. Navigate to each form field which has label element. 4. Check that this label described the usage of the form field. Check that the software does not fail WCAG 2.1 Success Criterion 2.4.6 Headings and Labels
11.2.4.7 Focus visible	Inspection	Check that the ICT is non-web software which provides a user interface. 1. Navigate through all the interactive elements of the software. 2. Check if currently selected element is highlighted with surrounding border and different colour so that user can easily identify the active element on the screen. Check that the software does not fail WCAG 2.1 Success Criterion 2.4.7 Focus Visible.
11.2.5 Input modalities		

11.2.5.1 Pointer gestures	Inspection	Check that the ICT is non-web software that provides a user interface.
		
		1. Check for any functionality that can be triggered by:
		  a. Path-based gestures (see description of path-based gestures below) OR.
		  b. Multipoint gestures (see description of multipoint gestures below).
		2. For each functionality that can be triggered by path-based gestures or multipoint gestures, verify that the functionality can also be operated with the use of single-pointer actions that are not path-based (such as taps, double taps, long presses, clicks, click and holds, double clicks, or dragging actions that are not path-based).
		3. Exceptions exist if the functionality is essential.
		
		Check that the software does not fail 'Software success criterion for Pointer gestures' given under clause **11.2.5.1** of IS 17802 (Part 1).

11.2.5.2 Pointer cancellation	Inspection	Check that the ICT is non-web software which provides a user interface.
		
		1. Identify all controls in the software with actions that are irreversible.
		2. If that control (with an irreversible action) can be triggered by a single-pointer touch, make sure that at least one of the following is true:
		  a. No Down-event — The action triggers on the up event. (The action is not triggered on the down event).
		  b. Abort/undo — The action triggers a confirmation dialogue, giving the user an option to abort/undo.
		  c. Up reversal — The action that would be triggered on the down event (for example, placing your finger on the screen) can be reversed by releasing the pointer outside the trigger area (for example, sliding the finger off the control and then lifting it off the screen).
		  d. Essential — Completing the function on the down-event is essential.
		
		Check that the software does not fail 'Software success criterion for pointer cancellation' given under clause **11.2.5.2** of IS 17802 (Part 1).

11.2.5.3 Label in name		

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria

11.2.5.3.1 Label in name (open functionality)	Inspection	Check that the ICT is non-web software and it is open for assistive technologies.
		1. Identify all controls in the software that have a visible text label.
		2. Using screen reader, put focus on the control.
		    a. Ensure the entire onscreen visible text label is EITHER:
		    b. An exact match to the label announced by screen reader OR
		    3. Is contained within the label announced by screen reader (in the same order presented visually).
		Check that the software does not fail WCAG 2.1 Success Criterion 2.5.3 Label in Name

11.2.5.3.2 Label in name (closed functionality)	Informative only and contains no requirements requiring test	Clause **11.2.5.3.2** of IS 17802 (Part 1) is informative only and contains no requirements requiring test.

11.2.5.4 Motion actuation	Inspection	Check that the ICT is non-web software which provides a user interface.
		  1. Identify any functionality that can be triggered by:
		    a. Device motion (such as shaking or tilting the device) OR
		    b. User motion detected by a device.
		  2. For each functionality that can be triggered by motion actuation verify that both of the following are true:
		    a. Motion actuation can be disabled AND
		    b. The functionality can be operated without using motion.
		Check that the software does not fail WCAG 2.1 Success Criterion 2.5.4 Motion Actuation

11.3 Understable		
11.3.1 Readable		
11.3.1.1 Language of software		

11.3.1.1.1 Language of software (open functionality)	Inspection	Check that the ICT is non-web software and it is open for assistive technologies.
		  1. Turn on the screen reader.
		  2. Check if screen reader reads the user interface language with correct voice and accent. If multiple languages are used on any screen then check that screen reader switches to the correct voice and able to read the text.
		  3. It must detect and read all the available Indian languages in the system.
		Check that the software does not fail 'Software success criterion for Language of software:' given in clause **11.3.1.1.1** of IS 17802 (Part 1).

11.3.1.1.2 Language of software (closed functionality)	Testing	Check that the ICT is non-web software that provides a user interface and the user interface is closed to assistive technologies for screen reading. The speech output is provided as non-visual access to closed functionality. The speech output is not proper names, technical terms, words of indeterminate. language, and words or phrases that have become part of the vernacular of the immediately surrounding text. The content is not generated externally and is under the control of the ICT vendor. The displayed languages can be selected using non-visual access. The user has not selected a speech language that is different from the language of the displayed. 1. Check that the speech output is in the same human language of the displayed content provided.
11.3.1.2 Void		
11.3.2 Predictable		

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.3.2.1 On focus	Inspection	Check that the ICT is non-web software which provides a user interface. 1. Turn on the screen reader 2. Swipe or tab through the screen from top to bottom 3. Check that no unexpected change of context as any of the components receive focus. 4. Under change of context we can consider focus moving to different area or opening up a new modal dialog. Check that the software does not fail WCAG 2.1 Success Criterion 3.2.1 On Focus.
11.3.2.2 On input	Inspection	Check that the ICT is non-web software which provides a user interface. 1. Turn on the screen reader 2. Interact with any of the input control on the screen, for example, entering text in a input box, opening a dropdown. 3. Check that no unexpected change of context as you interact with any control. 4. Under change of context we can consider focus moving to different area or opening up a new modal dialog. Check that the software does not fail WCAG 2.1 Success Criterion 3.2.2 On Input.
11.3.3 Input assistance		
11.3.3.1 Error identification		

11.3.3.1.1 Error identification (open functionality)	Inspection	Check that the ICT is non-web software which is open for assistive technologies and there is presence of form element.
		1. Identify any forms on a software.
		2. Complete every form control, deliberately entering user input that falls outside the required format or values or leaving required fields blank and submit the form.
		3. If an input error is detected, verify that BOTH of the following are true:
		  a. The form control that is in error is identified in text. Options include:
		    i. Visible text on screen.
		    ii. Alternative text on an image using screen reader, listen to the alternative text).
		  b. Text that is programmatically associated with the control (using screen reader, swipe to the control and ensure that the error message is read along with the control type and label).
		Check that the software does not fail WCAG 2.1 Success Criterion 3.3.1 Error Identification

11.3.3.1.2 Error Identification (closed functionality)	Testing	Check that the ICT is non-web software that provides a user interface and the user interface is closed to assistive technologies for screen reading. Speech output is provided as non-visual access to closed functionality and when an input error is automatically detected. 1. Check that speech output identifies the item that is in error. 2. Check that the speech output describes the item that is in error. 3. Check that the speech output is provided in the same Indian language chosen by user. Check that the software does not fail WCAG 2.1 Success Criterion 3.3.1 Error Identification

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.3.3.2 Labels or instructions	Inspection	Check that the ICT is non-web software which provides an user interface and there is presence of form element. 1. Visually identify each form control on the software. 2. Verify that each form control has a label that is always visible. 3. Required fields are identified visually and programmatically or *via* error text 4. Any input that requires specific data or format is provided for all users and not only to users without disabilities Check that the software does not fail WCAG 2.1 Success Criterion 3.3.2 Labels or Instructions*.
11.3.3.3 Error suggestion	Inspection	Check that the ICT is non-web software which provides an user interface and there is presence of form element. 1. Identify any forms on a software. 2. Complete every form control, deliberately entering user input that falls outside the required format or values and submit the form. 3. If an input error is automatically detected, verify that the error message gives a suggestion about how to fix it. 4. Using screen reader, ensure each error message with the suggestion can be read properly. 5. *Ensure that this information is available in the Indian language chosen by the user. Check that the software does not fail WCAG 2.1 Success Criterion 3.3.3 Error Suggestion.

11.3.3.4 Error prevention (legal, financial, data)	Inspection	Check that the ICT is non-web software which provides a user interface.
		
		1. Identify any screen/module where a user action can cause an important legal, financial, test/exam or unrecoverable/unchangeable user data transaction to occur.
		2. Confirm that AT LEAST ONE of the following is true:
		   a. Reversible: Instructions are provided explaining how to reverse or cancel the transaction.
		   b. Verified: Data entered by the user is provided for review before final submission, and the user is able to make changes to this data.
		   c. Confirmed: A mechanism (such as a checkbox) is provided for the user to confirm the transaction.
		
		Check that the software does not fail 'Software success criterion for Error prevention (legal, financial, data)' given in clause **11.3.3.4** of IS 17802 (Part 1).

11.4 Robust		
11.4.1 Compatible		
11.4.1.1 Parsing		
11.4.1.1.1 Parsing (open functionality)	Inspection	Check that the ICT is non-web software that provides a user interface and it supports at least one assistive technology. 1. Using the evaluation tool check the markup is having proper start and end tags, it is nested according to its specifications and it is not having any duplicate ids. Check that the software does not fail 'Software success criterion for Parsing' given in clause **11.4.1.1.1** of IS 17802 (Part 1).
11.4.1.1.2 Parsing (closed functionality)	Contains no requirements requiring test	Clause **11.4.1.1.2** of IS 17802 (Part 1) contains no requirements requiring test.

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* These procedures are applicable in respect of informative requirements only and, as such, are not part of normative requirements. These may be included based on user requirement in applicable cases.

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.4.1.2 Name, role, value		

11.4.1.2.1 Name, role, value (open functionality)	Inspection	Check that the ICT is non-web software and it is open for assistive technologies.
		 1. Using screen reader, navigate through each user interface component.
		 2. Make sure the screen reader correctly conveys (*see* expectations detailed below) the following information about each component:
		   a. Its role: For example, button, link, switch, picker, slider, stepper, switch, text field, alert, tab, etc.
		   b. Its name: For example, a label for a form control or button, the name of the tab, the label of a switch, etc.
		 3. If applicable, its value or state: for example, on/off, selected, dimmed, adjustable, expanded/collapsed, slider's value, textfield's value, "tab _ of _", etc.
		 Check that the software does not fail 'Software success criterion for Name, role, value' given in clause **11.4.1.2.1** of IS 17802 (Part 1).

11.4.1.2.2 Name, role, value (closed functionality)	Contains no testable requirements	Clause **11.4.1.2.2** of IS 17802 (Part 1) contains no testable requirements.
11.4.1.3 Status messages		

11.4.1.3.1 Status messages (open functionality)	Inspection	Check that the ICT is non-web software and it is open for assistive technologies.
		 1. Identify any status messages that can appear on the software. Status messages are:
		   a. Defined as a message that provides information to the user on the success or results of an action (confirmation message, updated shopping cart, etc), on the waiting state of an application, on the progress of a process, or on the existence of errors.
		   b. Added to the screen but do not receive focus.
		 2. Using screen reader, trigger each status message and confirm that the newly added status message is automatically announced by the screen reader without moving focus to the message.
		 Check that the software does not fail WCAG 2.1 Success Criterion 4.1.3 Status Messages.

11.4.1.3.2 Status messages (closed functionality)	No testable requirements	
11.5 Interoperability with assistive technology		
11.5.1 Closed functionality	Contains no testable requirements	If device or software is a closed functionality. 1. Check that the closed functionality conforms to clause **5.1** of IS 17802 (Part 1). 2. Where the closed functionality of software conforms to clause **5.1** (Closed functionality) of IS 17802 (Part 1), it shall not be required to conform with clause **11.5.2** of IS 17802 (Part 1).
11.5.2 Accessibility services		
11.5.2.1 Platform accessibility service support for software that provides a user interface	Inspection	Check that the ICT is platform software. 1. Check that the platform software documentation includes information about platform services that may be used by software that provides a user interface to interoperate with assistive technology.
11.5.2.2 Platform accessibility service support for assistive technologies	Inspection	Check that the ICT is platform software. 1. Check that the platform software documentation includes information about platform accessibility services that enables assistive technology to interoperate with software that provides a user interface running on the platform software.

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.5.2.3 Use of accessibility services	Inspection	Check that the ICT is non-web software which provides a user interface. 1. Check that the software uses the applicable documented platform accessibility services. 2. Check that the software can meet the applicable requirements mentioned in clause **11.5.2.5** to **11.5.2.17** of IS 17802 (Part 1) whilst using the documented platform accessibility services. 3. Check that the software can meet requirements mentioned in clause **11.5.2.5** to **11.5.2.17** of IS 17802 (Part 1) whilst using the documented platform accessibility services and other documented services.
11.5.2.4 Assistive technology	Inspection	Check that the ICT is an assistive technology. 1. Check that the assistive technology uses the documented platform accessibility services.

11.5.2.5 Object information	Inspection	Check that the ICT is non-web software which provides a user interface.
		1. Using screen reader, navigate through each user interface component.
		2. Make sure the screen reader correctly conveys (*see* expectations detailed below) the following information about each component:
		   a. Its role: For example, button, link, switch, picker, slider, stepper, switch, text field, alert, tab, etc.
		   b. Its name: For xample, a label for a form control or button, the name of the tab, the label of a switch, etc.
		3. If applicable, its value or state: For example, on/off, selected, dimmed, adjustable, expanded/collapsed, slider's value, textfield's value, "tab _ of _", etc.

11.5.2.6 Row, column, and headers	Inspection	Check that the ICT is non-web software which provides a user interface. If user interface of software has a data table. 1. Using assistive technologies like screen reader navigate to the data table in which the tests are to be performed. 2. Check that each cell's row is programmatically determinable by assistive technologies. 3. Check that each cell's column is programmatically determinable by assistive technologies. 4. Check that each cell's row header, if the row header exists, is programmatically determinable by assistive technologies. 5. Check that each cell's column header, if the column header exists, is programmatically determinable by assistive technologies.
11.5.2.7 Values	Inspection	Check that the ICT is non-web software which provides a user interface. If user interface of software has any element with value. 1. Using assistive technologies like screen reader navigate to a user interface element that can have a value. 2. Check that the current value is programmatically determinable by assistive technologies. 3. If the user interface element conveys information about a range of values, check that the minimum value is programmatically determinable by assistive technologies. 4. If the user interface element conveys information about a range of values, check that the maximum value is programmatically determinable by assistive technologies.

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.5.2.8 Label relationships	Inspection	Check that the ICT is non-web software which provides a user interface. If user interface of software has label. 1. Obtain the information of each user interface element using assistive technologies like screen reader. 2. Check that the user interface element's information includes the relationship with the user interface element that is its label, if the current user interface element has a label, and that this relationship is programmatically determinable by assistive technologies. 3. Check that the user interface element's information includes the relationship with the user interface element that it is labelling, if the current user interface element is a label, and that this relationship is programmatically determinable by assistive technologies.
11.5.2.9 Parent-child relationships	Inspection	Check that the ICT is non-web software which provides a user interface. If user interface of software has some elements which are parent/child of another user interface element. 1. For user interface elements that have a parent, check that the user interface element's information includes the relationship with the user interface element that is its parent. 2. Check that the user interface elements that are parents of the user interface element selected in check include the relationship with the user interface elements that are its children in their information, and that this relationship is programmatically determinable by assistive technologies like screen reader. 3. For user interface elements that are a parent of other user interface elements, check that the user interface element's information includes the relationship with the user interface elements that are its children, and that this relationship is programmatically determinable by assistive technologies. 4. Check that the user interface elements that are a child of the user interface element selected in check include the relationship with the user interface elements that are its parents in their information, and that this relationship is programmatically determinable by assistive technologies.
11.5.2.10 Text	Inspection	Check that the ICT is non-web software which provides a user interface. If user interface of software has text rendered on the screen. 1. Using the assistive technologies like screen reader check the text content is programmatically determinable. 2. Check that all the attributes including its boundary are determinable by assistive technologies.
11.5.2.11 List of available actions	Inspection	Check that the ICT is non-web software which provides a user interface. If user interface of software has any executable elements. 1. Using the assistive technologies like screen reader check that the user interface element's information includes the* list of actions that can be executed. 2. Check that this list is programmatically determinable by assistive technologies.
11.5.2.12 Execution of available actions	Inspection and Testing	If user interface of software has executable elements and security requirement of that software permits the assistive technologies to execute the action. 1. Check that the user interface element's information includes the list of actions that can be executed by assistive technologies according to clause **11.5.2.11** of IS 17802 (Part 1). 2. Check that all the actions in the list can successfully be executed by assistive technologies like screen reader.

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* These procedures are applicable in respect of informative requirements only and, as such, are not part of normative requirements. These may be included based on user requirement in applicable cases.

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.5.2.13 Tracking of focus and selection attributes	Inspection and Testing	If user interface of software has text editing elements. 1. Check that the user interface element's information includes mechanisms to track focus, text insertion point and selection attributes. 2. Check that this information is programmatically determinable by assistive technologies. 3. Activate those tracking mechanisms using assistive technologies like screen reader. 4. As a user, use the text editing functionality in the evaluated software product. 5. Check that the tracking of focus, text insertion points and selection attributes work properly with assistive technologies.
11.5.2.14 Modification of focus and selection attributes	Testing	Check that the ICT is non-web software which provides a user interface. If software has user interface elements that can receive focus or that enable text editing. If security requirements permit platform software to programmatically modify focus, text insertion point and selection attributes of user interface. 1. For user interface elements that can receive focus and where the focus can be modified by a user without the use of assistive technology, check that the focus can be programmatically modified by assistive technologies. 2. For user interface elements that enable text editing by a user without the use of assistive technology, check that the position of the text insertion point can be programmatically modified by assistive technologies like screen reader. 3. For user interface elements that enable text editing, check that the selection attributes can be programmatically modified by assistive technologies where they can be modified by user without the use of assistive technology.
11.5.2.15 Change notification	Inspection and Testing	Check that the ICT is non-web software which provides a user interface. If software has user interface. 1. Using assistive technologies like screen reader activate notifications of changes in the user interface elements. 2. Check that notifications about changes in object information (role, state, boundary, name and description) are sent to assistive technologies, if this information changes in the software user interface. 3. Check that notifications about changes in row, column and headers of data tables are sent to assistive technologies, if this information changes in the software. 4. Check that notifications about changes in values (current value, minimum value and maximum value) are sent, if this information changes in the software. 5. Check that notifications about changes in label relationships are sent to assistive technologies, if this information changes in the software. 6. Check that notifications about changes in parent-child relationships are sent to assistive technologies, if this information changes in the software. 7. Check notifications about changes in text (text contents, text attributes and the boundary of text rendered to the screen) are sent to assistive technologies, if this information changes in the software. 8. Check that notifications about changes in the list of available actions are sent to assistive technologies, if this information changes in the software. 9. Check that notifications about changes in focus, text insertion point and selection attributes are sent to assistive technologies, if this information changes in the software.

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Table 1 (g) (*Continued*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.5.2.16 Modifications of states and properties	Testing	Check that the ICT is non-web software which provides a user interface. If user interface of software has modifiable elements and security requirement of the software permits the assistive technologies to change the state or property of an element. 1. Activate the assistive technology like screen reader and check that the state of user interface elements, whose state can be modified by a user without the use of assistive technology, can be programmatically modified by assistive technologies. 2. Check the properties of user interface elements, whose properties can be modified by a user without the use of assistive technologies, can be programmatically modified by assistive technologies.
11.5.2.17 Modifications of values and text	Testing	Check that the ICT is non-web software which provides a user interface. If user interface of software has text modification elements and security requirement of the software permits the assistive technologies to change the text or value of an element. 1. Activate the assistive technology like screen reader and check that the values of user interface elements, whose values can be modified by a user without the use of assistive technology, can be modified by assistive technologies using the input methods of the platform.
11.6 Documented accessibility usage		
11.6.1 User control of accessibility features	Testing	Check that the ICT is non-web software which provides a user interface. If software documentation has any feature defined as accessibility feature. 1. Check that sufficient modes of operation exists where user control over platform features, that are defined in the platform documentation as accessibility features intended for users, is possible.
11.6.2 No disruption of accessibility features	Testing	Check that the ICT is non-web software which provides a user interface. If software documentation has any feature defined as accessibility feature. 1. Check if software that provides a user interface disrupts normal operation of platform accessibility features. 2. Check if the disruption was specifically requested or confirmed by the user.
11.7 User preferences	Inspection and Testing	If software which provides user interface has the settings for language, colour, contrast, font type, font size, or focus cursor, that correspond to platform settings. The software is not designed to be isolated from its underlying platforms. 1. Check that the software provides a mode of operation that follows the platform settings.
11.8 Authoring tools		
11.8.1 Content technology	Inspection and Testing	Check that the ICT is non-web software which provides a user interface. If software is an authoring tool and output format of the authoring tool supports information required for accessibility. 1. Check if the authoring tool conforms to clauses **11.8.2** to **11.8.5** to the extent that information required for accessibility is supported by the format used for the output of the authoring tool.
11.8.2 Accessible content creation	Inspection and Testing	Check that the ICT is non-web software which provides a user interface. If software is an authoring tool. 1. Check if the authoring tool has features that enable and guide the production of content that conforms to Clauses 9 (Web) and 10 (non-web documents) of IS 17802 (Part 1).

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Table 1 (g) (*Concluded*)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
11.8.3 Preservation of accessibility information in transformations	Inspection	If software is an authoring tool and it supports restructuring transformations or re-coding transformations. 1. For a restructuring transformation, check if the accessibility information is preserved in the output. 2. For a restructuring transformation, check if the content technology supports accessibility information for the restructured form of the information. 3. For a re-coding transformation, check if the accessibility information is preserved in the output. 4. For a re-coding transformation, check if the accessibility information is supported by the technology of the re-coded output.
11.8.4 Repair assistance	Inspection	Check that the ICT is non-web software and is an authoring tool. The accessibility checking functionality of the authoring tool can detect that content which does not meet a requirement of clauses 9 (Web) or 10 (Non-web documents) of IS 17802 (Part 1) as applicable. 1. The authoring tool provides repair suggestions when content does not meet requirement of clauses **9** or 10 (as applicable) of IS 17802 (Part 1).
11.8.5 Templates	Inspection	Check that the ICT is non-web software which provides a user interface. If software is an authoring tool and it provides the template for content creation. 1. Check that the authoring tool provides at least one template that supports the creation of content that conforms to requirements of clause **9** (Web content) or clause **10** (Documents) of IS 17802 (Part 1) as applicable. 2. Check that at least one template identified in step 1 is available and is identified as conforming to requirements of clauses **9** or 10 of IS 17802 (Part 1) (as applicable).

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Table 1 (h) Documentation and Support Services

(*Clause* 6.6)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
12.1 Product documentation		
12.1.1 Accessibility and compatibility features	Inspection	Check that the ICT product documentation is supplied with ICT, separately or integrated within the ICT. 1. Check that it lists and explains adequately how to use the accessibility and compatibility features of the ICT Product. 2. *Check whether the product documentation is in the same Indian language chosen by the user.
12.1.2 Accessible documentation	Inspection	Check that the product ICT documentation is provided in electronic format. 1. Check that it is in Web format that conforms to clause **9** of IS 17802 (Part 1). 2. Check that it is a non-Web format that conforms to clause **10** of IS 17802 (Part 1). 3. Check that it is offered in any one of the formats given in 2 and 3 above. 4. *Check whether the electronic format of the documentation is in the same Indian language chosen by the user.
12.2 Support Services		
12.2.1 General	No test	Clauses **12.2.1** of IS 17802 (Part 1) is informative and contains no requirements requiring test.
12.2.2 Information on accessibility and compatibility features	Inspection	Check that the support services are provided. 1. Check that the support services provide information on the accessibility and compatibility features that are included in the product documentation. 2. Check that support services provide information contained in the product documentation and it explains adequately how to use the accessibility and compatibility features of the ICT.
12.2.3 Effective communication	Inspection	Check that the ICT support services are provided. 1. Check that the ICT support services accommodate the communication needs of individuals with disabilities either directly or through a referral point.
12.2.4 Accessible documentation	Inspection	Check that the documentation is provided by ICT support services. 1. Check that the documentation provided by the ICT support services in electronic format conform to the requirements of clauses **9** or **10** of IS 17802 (Part 1) as appropriate. 2. *Check that the documentation in other formats (printed or otherwise) are accessible.

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* These procedures are applicable in respect of informative requirements only and, as such, are not part of normative requirements. These may be included based on user requirement in applicable cases.

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Table 1 (i) ICT Providing Relay or Emergency Service Access

(*Clause* 6.6)

For Requirements, refer to respective clauses of IS 17802 (Part 1)	Type of Assessment	Inspection, Test Procedure and Success Criteria
13.1 Relay service requirements		
13.1.1 General	No test	Clause **13.1.1** of IS 17802 (Part 1) is informative and contains no requirements requiring test
13.1.2 Text relay services	Inspection	Check that the service is a text relay service. 1. Check that the service enables text users and speech users to interact by providing conversion between the two modes of communication. 2. *Check that the text relay service supports Indian language users-text users in a given Indian language and speech users in the same language and between one Indian language text and speech users to another Indian language or English language users.
13.1.3 Sign relay services	Inspection	Check that the service is a sign relay service. 1. Check that the service enables sign language users and speech users to interact by providing conversion between the two modes of communication. 2. Check that the sign language relay services provide two-way translation between sign language users and speech users. 3. *Check that the sign language users and various Indian language speech users interact between the two modes of communication.
13.1.4 Lip-reading relay services	Inspection	Check that the service is a lip-reading relay service. 1. Check that the service enables lip-readers and voice telephone users to interact by providing conversion between the two modes of communication. 2. *Check that translation between spoken word to Indian Sign language is facilitated.
13.1.5 Captioned telephony services	Inspection	Check that the service is a captioned relay service. 1. Check that the service assists a deaf or hard of hearing user in a spoken dialogue by providing text captions, translating the incoming part of the conversation.
13.1.6 Speech to speech relay services	Inspection	Check that the service is a speech relay service. 1. Check that the service enables telephone users who are speech impaired, or have limited cognitive, language and learning abilities, to communicate by providing assistance between them.
13.2 *Access to relay services*	Inspection	Check that the ICT system supports two-way communication. 1. Check that a set of relay services for two-way communication is specified. 2. Check that the system does not prevent access to those relay services for incoming and outgoing calls, relating to voice, RTT, or video, either individually or in combinations supported by both the relay service and the ICT system.
13.3 Access to emergency services	Inspection	Check that the ICT system supports two-way communication. 1. Check that a set of emergency relay services for two-way communication is specified. 2. Check that the system does not prevent access to those emergency services for outgoing and incoming calls, relating to voice, RTT, or video, either individually or in combinations supported by both the emergency service and the ICT system.

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* These procedures are applicable in respect of informative requirements only and, as such, are not part of normative requirements. These may be included based on user requirement in applicable cases.

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7 ACCESSIBILITY CONFORMANCE REPORT

A supplier's declaration of conformity can be substantiated by supporting documentation for which the supplier is responsible. Anyone should be able to repeat the attestation and arrive at the same result using this information. An example is Voluntary Product Accessibility Template (VPAT), specified by the Information Technology Industry Council (ITI) for supplier's declaration of their products for accessibility - one that is widely used by industry and users in many countries. In declaration of conformance, the ACR can be used as reference that is mentioned in the Annex B (*Informative*).

8 TESTING AND TOOLS

Testing for conformity in respect of ICT accessibility requires good understanding of the needs of PwDs and the requirements spelt out in Part 1 of this standard. While it is necessary and possible for testing for full compliance of a sub-system based on 'determinants of compliance' and 'success criteria' specified in Table1, it may be too arduous to test all purely by manual testing. Hence, many fully automated and semi-automatic tools have become available in the market bothopen source and proprietary or commercial types. Again, these can be limited function types or more comprehensive for various functions. Most popular tools are in respect of websites and mobile apps. Automated testing tools are also valuable for software developers at various stages of the Software Development Life Cycle (SDLC). In no case, test tools are to be fully relied upon and they must be complemented by manual testing, especially from people with disabilities.

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ANNEX A

(*Informative*)

(*Clause* 4.1.4)

A-1 MAPPING OF REAL-WORLD ICT PRODUCTS AND SERVICES WITH REQUIREMENT CLAUSES

This annexure will guide the user to understand the different categories of ICT products and services around us. A few real-world examples are also provided. In the Table 2, the ICT categories are mapped with their applicable clauses of IS 17802 (Part 1).

NOTES

1 It is difficult to list all categories of ICT products and services; however, top priority categories are mentioned along with the suitable examples.

2 Respective clauses from the IS 17802 (Part 1) are mapped against the specific ICT category; however, it is recommended that all the clauses and their requirements are referred to for better results.

3 The reader may refer to the functional performance statements specified in clause **4** of IS 17802 (Part 1) before designing or supplying or procuring any ICT product and service. This will help to understand the different requirements of different disabilities and operating conditions.

Table 2 Representative Real-World ICT Products and Services with Requirement Clauses

(*Clause* A-1)

ICT Category	Real-world Examples	Refer Clauses of IS 17802 (Part 1)
Computer hardware systems and peripherals	Desktop computers/all-in-one PC/workstation/notebooks/ptops/tablets/printers/inputting systems/biometric access systems/networking devices/ storage	5, 8, 11
Computer/mobile Operating systems	Windows, lnux, mac, android, iOS	5, 11
Application software	Security and protective software including antivirus, office suite software, DBMS, accounting package, browser	5, 11
Self-service terminals	Payment terminals (swipe machines), automated teller machines (ATM), ticketing machines, check-in machines, interactive self-service terminals providing information	5, 8, 11
Consumer terminal equipment with interactive computing capability	Set-top-boxes, interactive TV's, smart home solutions, assisted living solutions	5, 8, 11
Electronic ticketing services	Electronic tickets (for example, metro cards/tokens/machines)	5, 8, 11
Non web documents	E-books, word processing documents, spreadsheets, presentations, PDFs, e-mails	5, 10
Navigational services	Online maps/mapping services	5, 11
Web based consumer services	E-commerce, net banking and other web-based banking services, payment gateways, e-governance, voice and text chat services, video conferencing, e-learning	5, 6, 7, 9, 11, 12
Mobile [smart phone] app-based consumer services	Mobile banking apps, payment solutions, cab aggregators, food delivery apps, e-commerce, instant messaging, video conferencing, OTT apps	5, 8, 9, 11
Support services	Helpdesk systems, help documentation	5, 12
Multimedia [audio/video]	T.V. programs, movies, documentaries, web series, OTT (Over-The-Top) platforms	5, 7
Real-time communication services	Real-time transcript [RTT] calls	5, 6
Emergency or relay services	Text relay services, sign relay services, speech to speech relay services	5, 13

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ANNEX B

(*Informative*)

(*Clause* 7)

GUIDANCE DOCUMENT FOR ACCESSIBILITY CONFORMITY REPORT

This Annexe can be used by stakeholders to assess and confirm, prima facie, the fulfilment of the accessible functionalities.

B-1 PROCEDURE FOR PREPARING THE ACR

B-1.1 Identify the product/service of interest.

B-1.2 Based on the product category, identify the clauses to be complied with. Annexure 1 can be used as a guidance to do the same.

B-1.3 Identify the user's acces5sibility requirement.

B-1.4 Map the product accessibility and functional requirements with the accessibility clauses in the Standard.

B-1.5 Suppliers to declare the compliance and compliance level of their products to the Standard, as per applicable clauses, in a standardized format.

B-2 ACCESSIBILITY CONFORMANCE REPORT (ACR)

An ACR can be prepared by evaluating and recording the conformance against each requirement by following the Inspection, Test Procedure and Success criteria steps mentioned in the Table 1.

The conformance report can be presented in the format given in Table 3(a) and in specific to the clause **5.10** Indian Language, the format under Table 3(b) may be preferred.

Table 3 (a): Sample Template for Filling ACR

(*Clause* B-2)

Requirement	Conformance	Remarks

Table 3 (b) Detailed Criteria for Clause 5.10

(*Clause* B-2)

Languages Supported	UNICODE	Display	Input Support, Font	Auditory Output	Voice Command
Language 1					
Language 2					
Language 3					

NOTE — For example, ITI VPAT®, which is a leading global reporting format can be used for creating the ACR. It is a self-disclosing document produced by the vendor which details each aspect of the Standards requirements and how the product supports each criterion. The most appropriate version "Accessibility requirements suitable for public procurement of ICT products and services in Europe" is VPAT 2.4 EU: EN 301 549 template may be used as reference in preparing the ACR to any ICT. (Voluntary Product Accessibility Template® (VPAT®) EN 301 549 Edition Version 2.4 which can be downloaded from https://www.itic.org/dotAsset/22d0c5ca-e78a-4b5d-bea3-3fad313ae924.doc).

The terms used in the Conformance Level information as per VPAT® are:

a) *Supports* — The functionality of the product has at least one method that meets the criterion without known defects or meets with equivalent facilitation.

b) *Partially Supports* — Some functionality of the product does not meet the criterion.

c) *Does Not Support* — The majority of product functionality does not meet the criterion.

d) *Not Applicable* — The criterion is not relevant to the product.

e) *Not Evaluated* — The product has not been evaluated against the criterion. This can be used only in WCAG Level AAA criteria.

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ANNEX C

(*Foreword*)

COMMITTEE COMPOSITION

Active Assisted Living Sectional Committee, LITD 35

Organization	*Representative(s)*
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