Comments on the draft Policy on IT Accessibility for People with Disabilities

2nd May, 2017

We welcome the initiative of the MEITY to formulate a policy/ set of guidelines to implement electronic accessibility for persons with disabilities within the government and provide our comments to the draft document below:

a. Accessibility of the document:

The present document is not completely accessible. The first two Annexures cannot be read at all using a screen reader and there is also scope for improving accessibility in the rest of the document. Given the government's policy requiring electronic accessibility and the nature of this document itself, this error may be rectified immediately. A good resource for creating accessible electronic documents is available at https://help.rnib.org.uk/help/daily-living/technology/accessible-documents

b. Title and content presentation:

The present title reads- 'Policy for IT Accessibility for people with disabilities". This may be rephrased to - Policy for Implementing IT accessibility for persons with disabilities so that its purpose is clear and differentiated from the National Policy on Universal Electronics Accessibility.

The policy may be broadly divided into four main aspects- Content and communication, technology, training and procurement, since these are the four areas where specific interventions are required and have different needs and associated standards.

c. Preliminary sections:

The policy would benefit from clearly articulated vision, objectives, scope, applicability and statement.

d. Content and communication:

All communication, including documents and publications, whether print or electronic, should be universally accessible. This could include documents, mails, invoices, leaflets etc. We recommend use of Unicode, EPUB 3, EPUB 3 Accessibility Guidelines and WCAG 2.0 (level AA) as the standards to be followed while creating and publishing electronic documents and information. The need to use Unicode for regional languages is especially emphasised, as also the need to provide alternatives in case of scanned notifications and documents. We would also like to stress the need to use alternate modes of communication for transactions such as Alternative mode of authentication other than visual captcha (IE: One time password (OTP), logical reasoning (2+2) etc.)

e. Accessibility of technologies

ICT accessibility interventions for different disabilities- This section should be circulated to experts of different disabilities to get their inputs. Attention may be given to also providing technology options such as the screen reader NVDA which are open source, efficient and work with indian languages. Overall, it is recommended that this section, recognises that persons with disabilities be provided with suitable assistive technologies and accessible technologies to enable them to work efficiently. The illustrative list of disabilitywise technologies may be provided as annexures to the policy/ guidelines and not be part of the main document.

f. WCAG 2.0:

The point relating to WCAG 2.0 may reference the standard as the current version of WCAG, now WCAG 2.0 (level AA). Reference may also be made to adherence to other associated standards of W3C

g. Mobile apps accessibility:

Since this is a key means of communication, governance and business today, guidelines need to be in place for these to be accessible. There is presently no single uniform standard for mobile apps accessibility. We have put together a set of guidelines based on review of global accessibility practices, user surveys and expert discussions. This is provided as annexure.

h. Monitoring and Training:

There should be a mechanism in place to ensure that the policy is implemented, with thought given to the consequences of non-compliance. This is extremely important, otherwise this will be an ineffective policy like the previous National Policy on universal Electronics Accessibility, which has had little impact on accessibility of public electronic infrastructure today. With respect to training, in addition to the training for persons who will be in charge of producing and maintaining/ disseminating publications and content, we recommend that every government official get sensitised to the issue of accessibility, perhaps through a half day workshop on the requirements of persons with disabilities. Those who are involved in the first case may of course get a more detailed and thorough technical training.

i. Accessible ICT Procurement:

Having a policy around accessible ICT procurement is key to achieving digital accessibility and inclusion within the government and to services, information and infrastructure by members of the public. This involves making specific accessibility related interventions at every stage of the procurement process. The present document lists out some procurement requirements and priorities, however this is inadequate and ineffectual to implement accessible ICT procurement as we intend it. We strongly recommend that the Government adopt the comprehensive global standard EN 301-549 in its entirety. since it addresses all aspects of technologies. Furthermore, for ease of reference, we provide below sample sections to integrate accessibility through the procurement process.

(i) **Defining accessibility as a key criterion of ICT procurement**

Procuring authorities may define and incorporate accessibility as a procurement requirement for ICTs through every stage of the procurement process[1] including advertising, development, use, execution, delivery, payment and use of IT products. In doing this, they may quote applicable functional performance statements, such as those specified in EN301549 clause 5 to 13, or provide a reference to the standard itself in any call for tenders.

(ii) **Preparatory study**

Where a preparatory study is required to be carried out prior to commencing a procurement process, the study should also include accessibility considerations. While identifying the user needs of persons with disabilities with respect to that product or service, the authority may do the following:

a) Examine existing market availability and cost and potential to deliver
b) Estimate user needs and extent of usage by persons with disabilities
c) Enquire about experience of potential vendors with respect to designing or providing accessible products or services and any other accessibility related policies-, business models -or controls which affect accessible product delivery within the vendor's organisation.

j. Request for Tender

(iii) **Pre-Qualification**

The tender or pre-qualification questionnaire should have questions about the vendor's experience in accessibility and universal design, specify accessibility as one of the vendor selection criteria and also specify accessibility targets for the specific product or service. While doing so, the procuring authority may require the vendor to furnish proof by providing:

a) A~~a~~ description of the vendor's track record in the accessibility domain
b) A~~a~~ description of employees and policies and the internal expertise to deliver accessible products and services
c) Commitment of the vendor to integrate accessibility as part of mainstream product and service delivery or under exclusive contract requirements.
d) Third party references attesting to the above
e) Any proof such as links to a web site the vendor may have designed etc.

(iv) **Processes**

The procuring authority may define the processes by which the contract may be delivered and also define requirements for an eligible vendor which may include accessibility track record. In the case of off the shelf products, the procuring authority may specify accessibility requirements or reference a minimum subset of

1. Centre for Excellence in Universal Design, http://universaldesign.ie/Technology-ICT/IT-Procurement-Toolkit/Stages-of-Procurement/

accessibility features from existing product standards to ensure that they are accessible. Accordingly, products may be evaluated based on their meeting these specified accessibility requirements.

(v) **Accessibility Requirements**

Procuring authorities may ensure that identified mandatory accessibility requirements are fundamental and practical to implement. They should be functional based on use outcomes rather than specify a technical solution. Accessibility criteria may be articulated in the award criteria in case of evaluating tenders based on their cost effectiveness.

(vi) **Assessing Tenders**

Vendors should be assessed based on their accessibility credentials as well as the extent of inclusion and use; user inputs should be solicited.

(vii) **Development and implementation**

In case of contracts which involve development and maintenance of an ICT system, such as a web site, procurement authorities shall require that the vendor delivers the product in accordance with the specified accessibility requirements and continues after delivery to monitor and maintain the product/ service in accordance with the same standard.

(viii) **Evaluating deliverables**

Procuring authorities should ensure that user testing is carried out across all possible groups of users of varying abilities.

(ix) **Maintaining accessibility**

Procuring authorities should ensure that accessibility remains a key factor in review meetings and that the products or services remain accessible over time.

(x) **Verification**

Procuring authorities should verify that the product or service delivered meets all specified standards/ targets of accessibility. Verification may take place at any stage of the procurement process. In case of an off the shelf product, it may take place before the tender is awarded and in the case of a customised product or service which is developed, such as a website, it may take place during development and once the product or service is completed. The verification/ audit may be carried out by competent access auditors, who may be independent of the government; they must have credibility and track record in the domain of digital accessibility. It is also recommended that machine-readable digital signatures (applied on digital documents) be used by procuring authorities during various stages of the procurement process instead of printed stamps and written signatures which are not accessible.

(xi) **Attestation**

Procuring authorities may require vendors to furnish proof by attestation that their product or service meets the accepted standard for accessibility. Different degrees of attestation may be adopted depending upon various factors such as nature of the product or service, extent to which non-compliance would affect users with disabilities, cost and time involved etc. For instance, the attestation could be vendor's self-declaration of compliance or a self-declaration coupled with a third party certificate, or self-declaration accompanied by information on how the conformance was measured or how the results measure up to accessibility standards in other countries or the results of an accessibility test conducted on the vendor's product/ service in another country.[2]

(xii) **Accessibility in contract clauses**

Procuring authorities may ensure that accessibility compliance is prescribed in contract clauses, including the call for tender and that the contract provides for the authority to verify accessibility throughout the life cycle of procurement, including development and design, delivery and subsequent maintenance. To this end, the procuring authority may lay down procedures which may be followed and also ensure that any ongoing

2. For more on the different conformity assessment types see EN/ L /ETSI TR 101 552 "Guidance for the application of conformity assessment to accessibility requirements for public procurement of ICT products and services in Europe".www.etsi.org/deliver/etsi_tr/101500_101599/101552/01.00.00_60/tr_101552v010000p.pdf)

maintenance which is contracted takes into account any changes in accessibility of a product or service which are triggered by continued use, updation, interoperability with the software ecosystem, developments in assistive technologies , software upgrades and user feedback.

(xiii) **Accessibility training**

Procuring authorities may consider including, where appropriate a clause requiring vendors to undergo accessibility training as part of the contract.

(xiv) **Accessibility statement**

Procuring authorities may require vendors to have an accessibility statement for their product/ service, which is also available in accessible formats.

(xv) **Product Accessibility templates**

Procuring authorities may require vendors to record their accessibility compliance by filling out product accessibility templates; Sample template of mandatory specification is indicated in the Annexure II.

(xvi) **Accessible communication**

Procuring authorities may ensure that all communication and processes relating to inviting and awarding tenders, execution, payment and use of a product/ service is done in an accessible manner. The website where the vendors interface with the government for uploading their applications or prequalification documents, provide status updates or inform/ submit completed work and process payments must conform to standards of web accessibility.

(xvii) **Transparency**

Procuring authorities may ensure that every stage of the procurement process is carried out in an open and transparent manner. This is a necessary criterion to ensure within-government as well as from public monitoring of whether accessibility concerns have been recognised and operationalised during the procurement process. It is not only important to incorporate accessibility considerations into the procurement process, but also to allow citizens, especially persons with disabilities, to have access to information regarding how such considerations have been incorporated. This transparency mechanism is critical for the success of the policy. The Open Contracting Data Standards is an emerging global standard to publish documents from various stages of the procurement/contracting process in structured and machine-readable digital form. In the interest of interoperability, adoption of such standards is highly recommended. Additional information is available at http://standard.open-contracting.org/

We hope that these inputs will be taken into account while finalising the present policy. We would be happy to provide any further information or assist in any way possible in this regard.

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ANNEXURE I

1. Introduction and explanatory note

The objective of these mobile accessibility practices is to help developers, designers and testers to create mobile apps that are universally accessible. An accessible application is one which is usable by everyone irrespective of their abilities. These mobile accessibility practices have been formulated after reviewing various globally accepted standards and guidelines, as mentioned in the section on the international position on Mobile app standards.

The Mobile Accessibility practices discussed below are not technology specific, but the examples are based on either Apple iOS or Google Android operating systems. The other mobile platforms are either not accessible or not used widely. The techniques to test or implement a specific practice may differ depending on the operating system.

Both the Android and iOS operating systems provide standardized mechanisms to communicate various attributes of a user interface element (UI Element) such as the label associated with a UI element, role of a UI element (such as whether it is a button or an edit control,) and state information (such as whether it is disabled, checked or pressed.) This mechanism is called Accessibility Application Programming Interface (API) and it provides reasonably good information for standard UI elements.

2. Mobile Practices

(xviii) Mobile Practice 1: Support platform accessibility settings

Most mobile platforms provide accessibility settings such as contrast between background and foreground text, invert colors, large text, grayscale, mono audio etc. Users select the relevant setting as per their requirement and expect all the apps to behave accordingly. Review all the accessibility options in the device settings and make sure each accessibility feature behaves as intended. For example, if a user chooses invert color option, and the app is already showing black text on a white background then it should show white text on black background which is easy on the eyes for many users with photosensitive eyes. Many other users without any well-known eye condition also find this easier for prolonged reading.

(xix) Mobile Practice 2: Provide proper labels for UI elements

There must be an accessible label for each UI element, such as images, buttons and other controls. An accessible label is recognizable by assistive technology such as Voiceover or TalkBack. Avoid labels embedded into an image as they cannot be parsed by screen readers.

Consider the following key points while labelling UI elements:

1. **A label must be precise and clear:** Think about the purpose that the UI element serves. For example, label “Add to Cart” for adding an item to cart. Consider using action verbs that describe the purpose of the UI element in order to provide appropriate labels.

2. **Timely Update**: In case the functionality of the UI element changes, the label must be updated as well. For example, “Play” button must change to “Pause” and vice versa for media files. Updated labels make it easy for the users to interact with the app.

3. **Do not provide the role and state information as part of label**: This information is provided separately through Accessibility API (described in Practice 3). For instance, “Play” button to be labeled as “Play”, and not “Play button” because the button’s role will be indicated through accessibility API.

4. **Localize the label strings**: This is required for users using the applications in different languages.

WCAG 2.0 corresponding success criteria: 1.1.1, 1.3.1, 2.4.2, 3.3.2, and 4.1.2.

(xx) **Mobile Practice 3: Provide role information for UI elements**

Every UI element can be identified visually with its look and feel. As users with blindness cannot perceive visual information, the role for a UI element must be available programmatically so that assistive technology can report this either through speech or Braille. In order to do so, use platform specific roles or traits for standard UI elements. For example, a button is announced as "Button" along with the label for assistive technology users. In case of custom UI elements, use platform accessibility API to report the role information.

WCAG 2.0 corresponding success criteria: 1.3.1, 3.2.4 and 4.1.2.

(xxi) **Mobile Practice 4: Provide hints for active UI controls**

A Hint is a brief, localized phrase that describes the results of an action on a UI control. It is like a tool tip that lets the user find out how to interact with the UI control. Hints are only required for UI controls that allow users some interaction, and are not required for UI elements such as labels or plain text. In case of custom UI controls, hints also report the screen reader gestures that users could perform to interact with the control. For example, in a shopping website that has a button "Add" that adds items to the cart, the button could have the hint as "Adds the item to the cart". Similarly, for a drag and drop widget, the hint can be "Double tap and hold until you hear a sound, then drag your finger to move the element to the desired location and lift the finger". The standard UI controls have hints supplied by the APIs, but those hints might have to be changed depending on the usage.

WCAG 2.0 corresponding success criteria: 3.3.2 and 3.3.5.

(xxii) **Mobile Practice 5: Provide state information for a UI control**

In addition to the role of a UI control, assistive technologies must identify the current state of a UI control. For example, the state of checkbox checked/ unchecked, tab selected or not, a push button pressed or not etc. should be notified. This information must also be reported as soon as it is changed. The standard UI controls provide this information by default, but for custom controls, this information must be supplied by platform specific accessibility APIs. The changes of state must be dynamically updated and accurately available to the assistive technologies.

WCAG 2.0 corresponding success criterion: 4.1.2.

(xxiii) **Mobile Practice 6: Group the related UI elements**

Related UI elements such as song title and singer name for a song must be grouped together so that assistive technologies can present it as a single UI element, reducing the gestures for interaction. This also helps to increase the touch target (Explained in Practice 8) so that users with low vision, users having motor difficulties and users with big fingers can more easily interact with it.

The following points are important for grouping related elements:

1. A group must have only one actionable UI control.
2. Updating UI controls such as progress bar must not be grouped with any other control as users need only the updated information.

(xxiv) **Mobile Practice 7: Design a simple interface and provide enough spacing**

Make the UI clean and simple. Avoid vertical and horizontal scrolling. This allows users with low vision to zoom and interact with the controls with ease. Provide non-interactive space between actionable UI elements of at least one point for iOS or 1 DP for android. This allows users with low vision, users having motor difficulties and users with big fingers to avoid touching a wrong UI element.

(xxv) **Mobile Practice 8: Touch Target must be at least 9x9mm**

Many users find it difficult to interact with small screen elements. It could be due to big or unsteady fingers or motor or visual difficulties. So, the touch targets must be at least 9x9mm regardless of screen size.

(xxvi) **Mobile Practice 9: Bring focus to the active UI control**

Since Mobile screens are small, all the UI elements cannot fit on the screen at a time. So UI elements such as buttons that take less space are used to bring up other UI elements such as dropdowns. For example, users would activate the "MM" button to bring up the month dropdown. In such scenarios, the dropdown should get the focus when the user activates the button. If the focus is not set properly, blind and low vision users may not be able to realize that the UI has changed. It sometimes takes many attempts to find out the new elements and if such interactions are time sensitive, a timeout could occur and the user would have to start all over again. Even

without timeouts, new users could find it difficult to manage such interactions thus impacting the user experience.

WCAG 2.0 corresponding success criterion: 2.4.3.

(xxvii) **Mobile Practice 10: Use custom actions for context specific UI controls**

When a UI control has context specific menu items, users must be informed that such a menu is present and must be able to activate those menu items. A Custom Action is an effective technique to support such an interaction. Both Android and iOS provide Custom Actions that are available to assistive technology users. When an element with a custom action is focused, assistive technology lets the user know that such actions are available and then users can use well-known gestures to perform those actions. Alternatively, use the accessibility API to report to the user what new UI elements are available and where such elements are present on the screen. This way users can locate those elements. This technique should only be used if Custom Actions are not available.

WCAG 2.0 corresponding success criterion: 1.3.1.

(xxviii) **Mobile Practice 11: Provide a logical and meaningful sequence**

Screen reader mobile users rely on gestures to navigate and interact with the content and the UI controls. Content when navigated using the screen reader gestures, must form a meaningful sequence. The controls on the mobile screens and the interaction produced need to be logical.

WCAG 2.0 corresponding success criterion: 1.3.2, 2.4.3.

(xxix) **Mobile Practice 12: Handle screen orientation change consistently**

Assistive technology users could lock screen orientation to avoid interference with their interaction with the device.

Pay attention to the following points while handling screen orientation:

1. **Screen orientation change is disabled**: If the user has turned on "Locked Orientation" option for iOS or disabled the Auto-rotate screen option for Android, then try not to change the screen orientation.
2. **Screen orientation change is not disabled**: Make sure that the screen orientation change is not disruptive and the focus does not move from the focused screen element.
3. **Report screen orientation change using accessibility API**: Report Screen orientation at the start if it is different from the default setting when screen orientation change is disabled. Otherwise, the change should be reported every time the orientation changes.

(xxx) **Mobile Practice 13: The content must be resizable**

Users with low vision may need to increase the size of the UI elements to be able to see well. The app must resize its UI elements in accordance with device settings for text size.

WCAG 2.0 corresponding success criterion: 1.4.4.

(xxxi) **Mobile Practice 14: Color contrast must be minimum 4.5:1**

Users with low vision or users in poor lighting condition would find it difficult to see the UI elements on the screen if the foreground elements cannot be differentiated from the background. Therefore, suggested color contrast ratio between foreground text for up to 18 point font and background must be at least 4.5:1 as per WCAG 2.0 Level AA or 7:1 as per WCAG 2.0 level AAA.

WCAG 2.0 corresponding success criteria: 1.4.3 and 1.4.6

(xxxii) **Mobile practice 15: Color or shape should not be the only way to communicate important information**

Relying only on color or shape to communicate important information can be problematic for certain persons with disabilities such as users with color blindness or users with blindness.

The following considerations are critical:

1. **App designers must add text equivalence for color coded or shape dependent information**. For example, if an app has a required field, then it could provide the word (Required) if the space permits or use placeholders.
2. **The app must disable the button used to move the menu forward until the field is filled-out**. Just relying on the shape of a button to indicate the disabled state does not work for many users with disabilities.
3. **Apps must not use color-based references** such as Click on Red or Square button, instead have text references such as Click on Next button.[3].

WCAG 2.0 corresponding success criteria: 1.4.1, 1.3.1 and 1.3.3.

(xxxiii) **Mobile Practice 16: onscreen keyboard and hardware keyboard must be accessible**

Mobile platforms provide support for both onscreen keyboard and hardware keyboard. App designers must ensure that both are accessible with assistive technology such as magnifier or a screen reader.

Note the following points while developing and testing the input interface:

1. **Do not automatically change focus**: If a user is entering data and the focus shifts automatically, the user would find it difficult to enter data. Focus must be changed only when the user activates a UI element that is designated for confirming an action such as the Submit button.
2. **Select the correct onscreen keyboard**: Ensure that the appropriate keyboard is invoked by the app depending on the type of field or the data that needs to be provided by the user. For example, the appropriate on-screen keyboard must be invoked for normal text, numerical data, email address or web address. This recommendation is not only helpful for users with disabilities, it also enhances the comfort of other users.
3. **Apps must be compatible with hardware keyboard**: Though many users work with the onscreen keyboard, others still prefer using a hardware keyboard that comes built-in or is connected with mobile devices via Bluetooth. Therefore, apps must be tested with hardware keyboards as well.

WCAG 2.0 corresponding success criteria: 2.1.1, 2.1.2, 3.2.1, 3.2.2 and 3.2.5.

(xxxiv) **Mobile Practice 17: Keep the gestures simple**

Avoid gestures that require 3 or more fingers to interact with UI elements. These complex gesture patterns make application usage difficult for those who do not have the use of all of their fingers, or use the device single-handedly. If such complex patterns cannot be avoided, provide an alternate to perform the same action or allow the user to create a custom gesture. For example, an added setting may be provided to customize gestures as per user requirements.

(xxxv) **Mobile Practice 18: Provide enough time**

Many users require extra time to be able to finish an action. So, avoid session timeouts. If a timeout cannot be avoided, then provide an option for users to extend the time limit before the timeout occurs. Also, make sure that the time extension element focus is properly set.

WCAG 2.0 corresponding success criterion: 2.2.1.

(xxxvi) **Mobile Practice 19: Provide captions for audio content and subtitles/transcripts for video content that is accompanied by audio**

Many users who have hearing difficulties or who find the language in the audio difficult to understand would need captions or transcripts that help them to understand the text of the audio.

WCAG 2.0 corresponding success criteria: 1.2.2, 1.2.4, 1.2.6, 1.2.8 and 1.2.9.

3. http://webaim.org/articles/visual/colorblind#designing

(xxxvii) **Mobile Practice 20: Provide audio descriptions for video content**

Users with blindness may find it difficult to understand important visual information which is not available in the audio format. If the application contains video that does not have an audio equivalent, provide audio description for the content that is crucial for blind users to understand the content. It is not required to provide audio for decorative and non-essential video content.

WCAG 2.0 corresponding success criteria: 1.2.1, 1.2.3, 1.2.5, 1.2.7, 1.2.8

(xxxviii) **Mobile Practice 21: No content must flash more than 3 times a second**

Some users get seizures if any content flashes more than 3 times per second. Therefore, it is recommended that no content flashes more than 3 times a second.

WCAG 2.0 corresponding success criteria: 2.3.1 and 2.3.2.

Annexure II

SRN	Features	Brief Explaination	Classifications	Remarks
1	The navigation order of links, form elements, etc. is logical and intuitive	if a webpage can be navigated sequentially and the navigation sequence affect the meaning of operation, then all components receive focus in an order that preserves the meaning/operation.(Creating a logical tab order through links, form controls, and objects)	Essential	
2	Skip to main content link that is available to screen reader users and keyboard only users.	Web pages allow the user to bypass repeated blocks of content (by using the skip to main content link)	Essential	
3	The page is readable and functional when browser zoom is set to 200% of its initial size	Except for captions and images of text, text can be resized without assistive technology up to 200 percent without loss of content or functionality. (using the zoom function of the browser or inbuilt controls in the webpage)	Essential	
4	Active/informative images: Linked or informative images have descriptive alternative text that serves the same purpose and presents the same information as the linked or informative image.	Websites provide textual information such as Alt text & Captions to describe non-text elements, such as audio/video clips & multimedia presentations, images etc	Essential	

5	Information structure and relationship is preserved in all presentation styles.	Semantics: Semantic HTML markup is used to designate content. Data tables: Data cells are explicitly associated with header cells for data tables, and descriptive table captions and summaries are provided where appropriate. Form labels: Labels are programmatically associated with form input elements using label (explicit or implicit). Group related form elements: For groups of related controls where the individual labels for each control do not provide sufficient description, fieldset and legent (or ARIA) are used to describe the relationship. Headings: Content is structured hierarchically using heading elements. Lists: Lists are marked up using real HTML lists elements. [ul, ol, dl or role="list" & role="listitem"]	Essential
6	The meaningful reading sequence is preserved in all presentation styles.	Reading order: The reading and navigation order (determined by code order) is logical and intuitive. Finding added content: Dynamically generated content following user interaction meets one of the following: assistive technology is automatically made aware of new content OR the new content is the very next thing the assistive technology will encounter on the page.	Essential
7	Changing the setting of a component does not change the context unless the user has been informed of the same.	When a user inputs information or interacts with a control, it does not result in a substantial change to the page, the spawning of a pop-up window, an additional change of keyboard focus, or any other change that could confuse or disorient the user unless the user is informed of the change ahead of time.	Essential

8	When any component receives focus it does not initiate change in context.	When a page element receives focus, it does not result in a substantial change to the page, the spawning of a pop-up window, an additional change of keyboard focus, or any other change that could confuse or disorient the user.	Essential
9	Efficient, intuitive and clearly identified text based alerts are provided to users for form validation cues and errors.	If an input error is automatically detected, the item that is in error is identified and the error is described to the user in text.	Essential
10	Time limit for time dependent web functions can be adjusted by the user (also refer exceptions).	If a page or application has a time limit, the user is given options to turn off, adjust, or extend that time limit. If a page or application has a time limit, the user is given options to turn off, adjust, or extend that time limit.	Essential
11	Labels have been provided when content requires input from the users.	Sufficient labels for form field elements are provided.	Essential
12	The purpose of each link can be determined from the link text alone or from the link text together with its programmatically determined link context. (eg Supplementing link text with the title attribute or supplement the link text by adding additional text that describes the unique function of the link but styling the additional text so that it is not rendered on the screen by user agents that support CSS)	The purpose of each link, form image button or image map hotspot can be determined from the link text alone, or from the link text and the context.	Essential
13	There is a mechanism to control (stop, pause…) audio that starts automatically.	A mechanism is provided to stop, pause, mute, or adjust volume for audio that automatically plays on a page for more than 3 seconds.	Essential
14	There is a mechanism to control scrolling, blinking content.	Automatically moving, blinking, or scrolling content that lasts longer than 5 seconds can be paused, stopped, or hidden by the user.	Essential

15	Web pages do not contain any content that flashes for more than three times in a second	No page content flashes more than 3 times per second unless that flashing content is sufficiently small, the flashes are of low contrast and do not violate general flash thresholds.	Essential
16	Functionality of content is operable through keyboard	Keyboard navigation: Page functionalities are available using the keyboard, unless the functionality cannot be accomplished in any known way using a keyboard.	Essential
17	Focus is not trapped in any component while navigating through keyboard only.	Keyboard focus is never locked or trapped in a particular page element and the user can navigate to and from all navigable page	Essential
18	All information conveyed with color is also available without color.	Color is not used as the sole method of conveying content or distinguishing visual elements.	Essential
19	There is adequate contrast between text and background colour.	Regular text: Regular text and images of regular text have a contrast ratio of at least 4.5 to 1 with the background.	Essential
20	Default human language of each webpage can be programmatically determined (eg by using html 'lang' attribute)	The language of the page is identified using the HTML lang attribute	Essential
21	Name and Role of all interface components 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	The name, role and value of page components are programmatically determinable by assistive technologies. In case of custom controls, HTML mark up must meet W3C specifications and facilitate accessibility support with assistive technologies.	Essential
22	Instructions for operating/understanding content do not rely solely on characteristics like shape size location etc.	Visual cues: Instructions provided to users rely on more than just visual cues. Sound cues: Instructions provided to users rely on more than just sound or auditory cues	Essential

23	In content implemented using markup languages the elements have been used according to specification.	Parsing: • Elements should have complete start and end tags • Elements should be nested according to their specifications • Elements should not contain duplicate attributes • Element IDs should be unique	Essential
24	Audio or Video only (Prerecorded)	• Prerecorded audio web-based files such as mp3 files and audio podcasts come with an adjacent or easily reachable verbatim text transcript. • Prerecorded video files that contain no dialogue come with an adjacent or easily reachable text or audio description of what happens on the visual track.	Essential
25	Scheme notification / government circular should be in accessible format (disabled friendly)	Accessible PDF should beuploaded	Essential
26	Non-visual capcha solutions should be provided for transaction authentication	Additional authentication mechanism should be provided (IE: One time password on registered mobile, logical questions (2+2), etc)	Essential