Voluntary Product Accessibility Template[®] (VPAT[®]) WCAG Edition

Version 2.4Rev

About This Document	1
Essential Requirements and Best Practices for Information & Communications Technology (ICT) Vendors	3
Getting Started	3
Essential Requirements for Authors	3
Best Practices for Authors	6
Posting the Final Document	8
Table Information for VPAT [®] Readers	9
[Company] Accessibility Conformance Report	. 10

About This Document

The VPAT is provided in four editions based on the standards/guidelines being evaluated. The editions are WCAG, Revised 508, EN 301 549 and International, which includes all of the standards.

This is the WCAG edition of the VPAT. It includes the following standards/guidelines:

- Web Content Accessibility Guidelines 2.0
- Web Content Accessibility Guidelines 2.1

If you need to report on a different combination of standards/guidelines, use the appropriate alternate edition of the VPAT found on <u>ITI Accessibility web page</u>.

This document is broken into two main sections:

- Essential Requirements and Best Practices for using the VPAT[®] to complete an Accessibility Conformance Report (the instructions)
- The VPAT

Please carefully review the Essential Requirements and Best Practices sections before using the VPAT to create an Accessibility Conformance Report.

The purpose of these instructions is to promote accurate and consistent reporting of product accessibility information.

The VPAT is a template used to document a product's conformance with accessibility standards and guidelines. The purpose of the Accessibility Conformance Report is to assist customers and buyers in making preliminary assessments regarding the availability of commercial "Electronic and Information Technology," also referred to as "Information and Communication Technology" (ICT) products and services with features that support accessibility.

The Information Technology Industry Council (ITI) provides the VPAT. Use of the template and service mark does not require membership in ITI.

Essential Requirements and Best Practices for Information & Communications Technology (ICT) Vendors

This section provides guidance for reporting product conformance for major accessibility standards and guidelines using the VPAT[®] to produce the Accessibility Conformance Report. Deviating from these guidelines precludes vendors from referencing the template by name and/or the VPAT acronym.

Getting Started

- 1. Before creating a report, read all of the materials provided in this document.
- 2. Determine which accessibility standards/guidelines will be included in the product conformance report and use the appropriate VPAT file.
- 3. It is the vendor's responsibility to maintain the integrity of the data in the report.

Essential Requirements for Authors

The following are the minimum requirements to produce an Accessibility Conformance Report based on the VPAT[®].

- The VPAT name and template are registered service marks of ITI. Use of the VPAT template and name requires the inclusion of the registered service mark (i.e., "VPAT[®]"). Users of the VPAT agree not to deviate from the Essential Requirements for Authors.
- 2. The template file can be used as is or replicated in a different delivery format, for example as HTML or PDF. The final conformance report must be accessible.
- 3. A report must contain the following content at a minimum:
 - **Report Title** In the heading format of "[Company Name] Accessibility Conformance Report"
 - VPAT Heading Information Template version
 - Name of Product/Version Name of Product being reported, including product version identifier if necessary

- **Report Date** Date of report publication. At a minimum, provide the month and year of the report publication. For example, "May 2016". If date is included, ensure it is clear "4 May 2016" or "May 4, 2016".
- **Product Description** A brief description of the product
- **Contact Information** Contact Information for follow-up questions. Listing an email is sufficient.
- **Notes** Any details or further explanation about the product or the report. This section may be left blank.
- Evaluation Methods Used Include a description of evaluation methods used to complete the VPAT for the product under test.
- **Applicable Standards/Guidelines** A clear indication of which Standards/Guidelines this Conformance Report covers.
 - The list must include only the Standards/Guidelines used to evaluate the product.
 - The applicable Standards/Guidelines that are included in this edition of the VPAT template are:
 - <u>Web Content Accessibility Guidelines 2.0</u> or WCAG 2.0 (ISO/IEC 40500)
 - Web Content Accessibility Guidelines 2.1 or WCAG 2.1
 - If other Standards/Guidelines are reported then use the appropriate VPAT edition.
 - This information can be in a table format at the top of the report with the table heading 'Standards/Guidelines' and the reported Standards/Guidelines identified. This information can alternatively be supplied in the introductory text of the report. In the VPAT we have used a table as an example and listed "(yes / no)" for each guideline. To indicate what the report covers leave the appropriate yes or no on each guideline.
 - If multiple Guideline tables are included, each table must identify the Guideline that the criteria in that table represent.
- Terms The report must list the definition of the terms used in the Conformance Level column. ITI recommends the following terms. If a vendor deviates from the ITI definitions, the vendor shall reference this change in the heading Notes section. If a term is not used it can be removed from the list. The ITI definitions are:

- **Supports**: The functionality of the product has at least one method that meets the criterion without known defects or meets with equivalent facilitation.
- **Partially Supports**: Some functionality of the product does not meet the criterion.
- **Does Not Support**: The majority of product functionality does not meet the criterion.
- **Not Applicable**: The criterion is not relevant to the product.

<u>Note</u>: When filling in the WCAG tables, a response may use 'Supports' where one might otherwise be inclined to use 'Not Applicable'. This is in keeping with <u>WCAG 2.0 Understanding Conformance</u>: This means that if there is no content to which a success criterion applies, the success criterion is satisfied.

- **Not Evaluated**: The product has not been evaluated against the criterion. This can only be used in WCAG 2.x Level AAA.
- **Tables for Each Standard or Guideline** Tables showing the responses to the criteria.
- 5. WCAG Conformance Information The answers in the WCAG success criteria are based on the level of conformance being reported (Level A, AA or AAA).
 - These tables are used to answer:
 - The selected levels of WCAG 2.x Guidelines.
 - When reporting on WCAG 2.0 criteria it is acceptable to remove the WCAG 2.1-specific criteria from the table. These are marked '2.1 only' within the row.
- Remarks and Explanations Detailed remarks should be provided in the Remarks and Explanations column to justify your answer in the Conformance Level column.
 - When the conformance level is 'Partially Supports' or 'Does Not Support', the remarks should identify:
 - 1. The functions or features with issues
 - 2. How they do not fully support
 - If the criterion does not apply, explain why.
 - If an accessible alternative is used, describe it.

Best Practices for Authors

ITI suggests that authors adopt the following best practices when using the VPAT[®] to create an Accessibility Conformance Report.

- Branding Header: Company logo or branding information
- **Report Date Changes:** If a report is revised, change the report date and explain the revision in the Notes section. Alternately, create a new report and explain in the Notes section that it supersedes an earlier version of the report.
- Notes: Add any notes applicable to product or the report
 - Additional information about the product version that the document references
 - Any revisions to the document
 - Links to any related documents
 - Additional information describing the product
 - Additional information about what the document does or does not cover
 - Information suggested by the <u>WCAG 2.0 Conformance Claim</u>
 - Information needed to satisfy ISO/IEC 17050-1:2004, Supplier's Declaration of Conformity
- Evaluation Methods Used Information to enter may include the following:
 - Testing is based on knowledge of general product functionality (Instructional note: this would mean the tester knows how to use the common uses and flows of the product in addition to accessibility)
 - Similar to another evaluated product
 - Testing with assistive technologies
 - Published test method (provide name, publisher, URL link)
 - Vendor proprietary test method
 - Other test method
- Remarks and Explanations: This section may include:
 - Information regarding the testing of a given criteria.
 - Information on application dependencies to support accessibility (e.g. OS, app frameworks, browsers recommended).

- How the customer can find more information about accessibility issues. One method can be to include the bug ID where customers can call the company's customer support to get additional information.
- Known workarounds for accessibility issues.
- Legal Disclaimer: Area for any legal disclaimer text required by your organization.
- **Report Size:** To reduce the size of the report it is acceptable to remove sections. Individual criteria cannot be removed, only sections at a time. Section removal is acceptable in four situations:
 - When an entire section is not being reported on because it does not apply to the product, for example:
 - Chapter 4: Hardware. Information should be included in the notes for that section why it has been removed.
 - A card reader that does not have sound could remove the criteria in section 413 Closed Caption Processing Technologies and just note the why the criteria does not apply.
 - When reporting on WCAG 2.0 criteria it is acceptable to remove the WCAG 2.1-specific criteria from the table. These are marked '2.1 only' within the row.
 - If the product is not being evaluated for a level of the criteria (for example Level AAA) then that table may be deleted.
 - If a requesting customer has identified that a section of the standard does not apply, information should be included in the notes that the section has been removed.
- WCAG 2.x Tables: The WCAG 2.x criteria are shown in three tables, Level A, Level AA, and Level AAA.
 - If desired, these tables can be combined into one table.
 - When reporting on a level (A, AA or AAA) all criteria for that level must be answered for the particular version of WCAG that the report includes.
- Language: Translation to other languages is permitted.
- **Multiple Reports:** When using the VPAT to create an Accessibility Conformance Report for complex products it may be helpful to separate answers into multiple reports. For example, when a product is an Authoring Tool that also has web content and documentation. When multiple reports are used for a complex product, it is required to explain this and how to reach the other reports in the Notes section of each report.

- **Criteria Text:** To help conserve space in the ITI template only the criteria ID number and a short title have been included. Where possible, links have been included to the standard/guideline.
 - It is acceptable to add the full text of the criteria into the cell if desired to help with understanding.
 - The links to the standards/guidelines can be removed.
- Ordering of Tables: The order that the guideline tables appear may be changed to facilitate reading. For example, instead of separating the Level A, Level AA and Level AAA criteria, they may be put in one table in numerical order.
- **Guideline Section Heading Rows in Tables:** The tables include heading rows to facilitate understanding the context of the criteria.
 - The cells in these rows do not require answers as indicated by "Heading cell – no response required."
 - It is optional to add a response if desired.
 - The shading of the row is also optional.
 - If removing the heading rows, edit the criteria titles so it's clear where they apply.

Posting the Final Document

- When publishing your Accessibility Conformance Report, be sure to remove the entire first 9 pages of this document, including the table of contents, introductory information and instructions.
- Check for each required item in the VPAT[®] document:
 - [Company Name] Accessibility Conformance Report (report title)
 - (Based on VPAT[®] Version 2.4Rev)
 - Name of Product/Version
 - Report Date
 - Product Description
 - Contact Information
 - Notes
 - Evaluation Methods Used
 - Applicable Standards/Guidelines

- Terms
- Tables for Each Standard or Guideline
 - Check that there is a response for each criterion for 'Conformance Level' and 'Remarks and Explanations.'
- Verify that the final document is accessible.
- Post your final document on your company's web site, or make the document available to customers upon request.

Table Information for VPAT[®] Readers

For each of the standards, the criteria are listed by chapter in a table. The structures of the tables are: the first column contains the criteria being evaluated, the second column describes the level of conformance of the product regarding the criteria and the third column contains any additional remarks and explanations regarding the product.

- When sections of criteria do not apply, or are deemed by the customer as not applicable, the section is noted as such and the rest of that table may be removed for that section.
- When multiple standards are being recorded in this document, the duplicative sections are noted and responded to only one time. The duplicate entry will note the cross reference to the data.

Marketplace Microsimulations Accessibility Conformance Report

WCAG Edition

(Based on VPAT[®] Version 2.4Rev)

Name of Product/Version: Marketplace Microsimulations Student Software

Report Date: 12-12-2022

Product Description: Marketplace Microsimulations are short, interactive exercises to help university students learn business topics. They are available to play online from supported web browsers on computers and mobile devices. This VPAT covers the shared and individual components of the execises: Fundamentals of Product Design, Fundamentals of Production Scheduling, Profitability, Fundamentals of Accounting, Fundamentals of Online Marketing, Online Paid Advertising, Fundamentals of Strategic Planning, Fundamentals of Pricing, and Price Elasticity in Practice

Contact Information: design@ilsworld.com

Notes: This VPAT covers the student-facing interface. It is our preliminary VPAT.

"Voluntary Product Accessibility Template" and "VPAT" are registered service marks of the Information Technology Industry Council (ITI) **Evaluation Methods Used:** Automated code-scanning with Axe-Core Library, Manual keyboard testing on Mac in Safari with the new enhanced accessibility keyboard toggled off, Manual testing with NVDA, Manual testing with JAWS 2021, Manual testing with VoiceOver, Orientation lock was tested on a mobile device.

Applicable Standards/Guidelines

This report covers the degree of conformance for the following accessibility standard/guidelines:

Standard/Guideline	Included In Report
Web Content Accessibility Guidelines 2.0	Level A (Yes)
	Level AA (Yes)
	Level AAA (No)
Web Content Accessibility Guidelines 2.1	Level A (Yes)
	Level AA (Yes)
	Level AAA (No)

Terms

The terms used in the Conformance Level information are defined as follows:

- **Supports**: The functionality of the product has at least one method that meets the criterion without known defects or meets with equivalent facilitation.
- Partially Supports: Some functionality of the product does not meet the criterion.
- Does Not Support: The majority of product functionality does not meet the criterion.
- Not Applicable: The criterion is not relevant to the product.
- Not Evaluated: The product has not been evaluated against the criterion. This can be used only in WCAG 2.0 Level AAA.

WCAG 2.x Report

Note: When reporting on conformance with the WCAG 2.x Success Criteria, they are scoped for full pages, complete processes, and accessibility-supported ways of using technology as documented in the <u>WCAG 2.0 Conformance Requirements</u>.

Table 1: Success Criteria, Level A

Notes:

Criteria	Conformance Level	Remarks and Explanations
<u>1.1.1 Non-text Content</u> (Level A)	Supports	Images have alt text or are marked "" if they are incidental. Time-based media is identified by an ARIA label that corresponds to the page title. Time-based media is essential to the activity, so navigation between identified media is the biggest user concern. Complex visuals are described with text available to screen readers. UI elements have accessible names.
1.2.1 Audio-only and Video-only (Prerecorded) (Level A)	Supports	Closed captioning is available for pre-recorded audio. No pre-recorded video is used.
1.2.2 Captions (Prerecorded) (Level A)	Supports	Closed captioning is available for pre-recorded multimedia.
1.2.3 Audio Description or Media Alternative (Prerecorded) (Level A)	Supports	The narration is written to inherently contain any necessary audio description.
1.3.1 Info and Relationships (Level A)	Partially Supports	Tables are not used for layout and markup is used consistently with its intended purpose. Header structure, landmarks, regions, tables, element groupings, and programmatically available form labels work very well in NVDA. Many features work in JAWS. Software does not work in VoiceOver on Apple devices.
1.3.2 Meaningful Sequence (Level A)	Supports	Whitespace is not used inappropriately. The meaning of content is identical between the DOM and the visual order.
1.3.3 Sensory Characteristics (Level A)	Supports	Instructions provided for understanding and operating content do not rely solely on sensory characteristics of components.
1.4.1 Use of Color (Level A)	Supports	Nothing requires solely the use of color for understanding or operation.
1.4.2 Audio Control (Level A)	Supports	There is a way to pause all audio/multimedia within the browser native players. For screen reader users, there is

Criteria	Conformance Level	Remarks and Explanations
		a switch before beginning an exercise to turn off all auto play.
<mark>2.1.1 Keyboard</mark> (Level A)	Partially Supports	The product works well with keyboard-only use on Windows, while some components are not currently working on Mac (without using the enhanced accessibility keyboard). A workaround is to use the accessibility keyboard, but this requires different keyboard interaction. The product works well with NVDA. There are some shortfalls with JAWS, but most content is accessible. VoiceOver is not currently supported.
2.1.2 No Keyboard Trap (Level A)	Partially Supports	In some technology combinations (see 2.1.1 for explanation), component operation is either nonstandard but workable or not workable.
2.1.4 Character Key Shortcuts (Level A 2.1 only)	Supports	The product does not set character key shortcuts. Code was reviewed to search for unintended shortcut key use.
2.2.1 Timing Adjustable (Level A)	Supports	Activities within the product have no time limit and are re-playable. The user account session terminates after 20 hours for security reasons.
2.2.2 Pause, Stop, Hide (Level A)	Supports	There is no moving, blinking, or scrolling content that starts automatically. Multimedia video can start automatically, but there is a pause button.
2.3.1 Three Flashes or Below Threshold (Level A)	Supports	Videos were screened with the Harding Test broadcast standard tool to eliminate any problematic content.
2.4.1 Bypass Blocks (Level A)	Partially Supports	In some technology combinations (see 2.1.1 for explanation), links are not recognized affecting the skip link.
2.4.2 Page Titled (Level A)	Supports	Web pages have appropriate and meaningful page titles.
<u>2.4.3 Focus Order</u> (Level A)	Partially Supports	For the most part focus follows the DOM and mirrors the visual layout. There are a few instances where focus order does not appear in a top-down, left to right order.

Criteria	Conformance Level	Remarks and Explanations
2.4.4 Link Purpose (In Context) (Level A)	Partially Supports	In some technology combinations (see 2.1.1 for explanation), links are not recognized.
2.5.1 Pointer Gestures (Level A 2.1 only)	Not Applicable	No multipoint and path-based gestures are used in the product.
2.5.2 Pointer Cancellation (Level A 2.1 only)	Supports	Actions triggered by pressing down on a mouse key or stylus can be reversed or aborted, unless it is essential that pressing down triggers the action. Code was checked for events.
2.5.3 Label in Name (Level A 2.1 only)	Supports	UI elements with a visible label include this name in the accessible name. NVDA was used to test.
2.5.4 Motion Actuation (Level A 2.1 only)	Not Applicable	There are no functions that rely on device motion or special user motion.
3.1.1 Language of Page (Level A)	Supports	Code was checked to ensure that the language of the page was appropriate for all translated versions.
3.2.1 On Focus (Level A)	Supports	No change is initiated upon receipt of keyboard focus.
<u>3.2.2 On Input</u> (Level A)	Partially Supports	Changing the setting of certain UI components will change context in a predictable way in certain situations. However, users are not warned in advance. The interactions could be improved.
3.3.1 Error Identification (Level A)	Supports	Input errors are automatically detected and the item that is in error is identified and the error is described to the user in text.
3.3.2 Labels or Instructions (Level A)	Partially Supports	Labels and instructions are provided to users of NVDA and JAWS. Visual, mouse-navigation and keyboard-only users have most of this available to them. VoiceOver is not currently supported.
4.1.1 Parsing (Level A)	Supports	The product is built in Angular which is a widely-used, standardized, development library/framework. We check our code using the Axe-Core library from Deque before every release, which checks for certain validation errors. <u>https://dequeuniversity.com/rules/axe/4.5/</u> Much of our code is rendered client-side, and the W3C style validators don't work. In-browser manual checks

Criteria	Conformance Level	Remarks and Explanations
		have been performed to supplement this routine testing.
<mark>4.1.2 Name, Role, Value</mark> (Level A)	Partially Supports	The product is built in Angular which is a widely-used, standardized, development library/framework with accessibility features. Many components in the product are not default HTML UI elements, but they have been heavily tested with NVDA to provide name, role, and value. JAWS has good support. VoiceOver is not currently supported.

Table 2: Success Criteria, Level AA

Notes:

Criteria	Conformance Level	Remarks and Explanations
1.2.4 Captions (Live) (Level AA)	Not Applicable	Product does not contain live audio or video.
1.2.5 Audio Description (Prerecorded) (Level AA)	Supports	The narration is written to inherently contain any necessary audio description.
1.3.4 Orientation (Level AA 2.1 only)	Supports	Content is not locked into a specific screen orientation.
1.3.5 Identify Input Purpose (Level AA 2.1 only)	Supports	The software makes almost no use of the type of fields where autocomplete would be appropriate. But in the few places it makes sense to have, it is to specification.
<u>1.4.3 Contrast (Minimum)</u> (Level AA)	Supports	Text, large text, text in videos, important images, many decorative images, UI components, focus styling, and graphical objects have been designed to meet or exceed minimum contrast requirements from the beginning.
<mark>1.4.4 Resize text</mark> (Level AA)	Supports	Text can be resized without assistive technology up to 200 percent without loss of content or functionality. This requirement does not include captions or images of text.
1.4.5 Images of Text (Level AA)	Supports	Images of text are not used except in a few cases where they are essential to the presentation of information.

Criteria	Conformance Level	Remarks and Explanations
		This use is in graphs and diagrams.
<u>1.4.10 Reflow</u> (Level AA 2.1 only)	Supports	Content is developed with the widely-used, mobile-first Angular framework from Google to support reflow and mobile behavior.
1.4.11 Non-text Contrast (Level AA 2.1 only)	Supports	Text, large text, text in videos, important images, many decorative images, UI components, focus styling, and graphical objects have been designed to meet or exceed minimum contrast requirements from the beginning.
1.4.12 Text Spacing (Level AA 2.1 only)	Supports	The product is designed on a responsive framework (Angular). The product was checked with the ARC tool.
1.4.13 Content on Hover or Focus (Level AA 2.1 only)	Supports	Content does not appear upon receipt of focus. There is one instance of supplemental content appearing on hover.
2.4.5 Multiple Ways (Level AA)	Partially Supports	There are two ways of navigating to mouse users and most keyboard users. NVDA is also well-supported. JAWS is mostly supported. VoiceOver is not currently supported.
2.4.6 Headings and Labels (Level AA)	Supports	Headings and Labels accurately describe topic or purpose.
2.4.7 Focus Visible (Level AA)	Partially Supports	Focus is visually discernible except in certain currently not-supported technologies. This primarily effects VoiceOver.
3.1.2 Language of Parts (Level AA)	Supports	Content was manually reviewed to ensure all text was translated.
3.2.3 Consistent Navigation (Level AA)	Partially Supports	Navigation is consistent visually. However, for certain users inconsistencies in tab order or component compatibility cause simple level inconsistencies. VoiceOver is the worst affected.
3.2.4 Consistent Identification (Level AA)	Supports	Components are used in a structured and consistent way across the product. They are identified consistently per function.
3.3.3 Error Suggestion (Level AA)	Supports Page 17 of 19	Input errors and automatically detected and suggestions for correction are provided.

Criteria	Conformance Level	Remarks and Explanations
3.3.4 Error Prevention (Legal, Financial, Data) (Level AA)	Supports	Depending on how teachers use the product, it could be considered a test. The product is designed to be explored at the user's own pace, with trial and error and suggestions. Teachers may of their own accord choose to enforce strict deadlines or limitations of attempts. In this scenario the product is used similarly to a test. Students can review all of their submissions before leaving the exercise, as long as it is before a time when the teacher locks access.
4.1.3 Status Messages (Level AA 2.1 only)	Partially Supports	In NVDA status messages are implemented to allow assistive technologies to be alerted programmatically and are able to expose status messages to users without a change in focus. JAWS has most of this functionality. VoiceOver is not currently supported.

Table 3: Success Criteria, Level AAA

Notes:

Criteria	Conformance Level	Remarks and Explanations
1.2.6 Sign Language (Prerecorded) (Level AAA)	Not Evaluated	
1.2.7 Extended Audio Description (Prerecorded) (Level AAA)	Not Evaluated	
1.2.8 Media Alternative (Prerecorded) (Level AAA)	Not Evaluated	
1.2.9 Audio-only (Live) (Level AAA)	Not Evaluated	
1.3.6 Identify Purpose (Level AAA 2.1 only)	Not Evaluated	
1.4.6 Contrast (Enhanced) (Level AAA)	Not Evaluated	
1.4.7 Low or No Background Audio (Level AAA)	Not Evaluated	
1.4.8 Visual Presentation (Level AAA)	Not Evaluated	
1.4.9 Images of Text (No Exception) (Level AAA)	Not Evaluated	
2.1.3 Keyboard (No Exception) (Level AAA)	Not Evaluated	

Criteria	Conformance Level	Remarks and Explanations
2.2.3 No Timing (Level AAA)	Not Evaluated	
2.2.4 Interruptions (Level AAA)	Not Evaluated	
2.2.5 Re-authenticating (Level AAA)	Not Evaluated	
2.2.6 Timeouts (Level AAA 2.1 only)	Not Evaluated	
2.3.2 Three Flashes (Level AAA)	Not Evaluated	
2.3.3 Animation from Interactions (Level AAA 2.1 only)	Not Evaluated	
2.4.8 Location (Level AAA)	Not Evaluated	
2.4.9 Link Purpose (Link Only) (Level AAA)	Not Evaluated	
2.4.10 Section Headings (Level AAA)	Not Evaluated	
2.5.5 Target Size (Level AAA 2.1 only)	Not Evaluated	
2.5.6 Concurrent Input Mechanisms (Level AAA 2.1 only)	Not Evaluated	
3.1.3 Unusual Words (Level AAA)	Not Evaluated	
3.1.4 Abbreviations (Level AAA)	Not Evaluated	
3.1.5 Reading Level (Level AAA)	Not Evaluated	
3.1.6 Pronunciation (Level AAA)	Not Evaluated	
3.2.5 Change on Request (Level AAA)	Not Evaluated	
3.3.5 Help (Level AAA)	Not Evaluated	
3.3.6 Error Prevention (All) (Level AAA)	Not Evaluated	

Legal Disclaimer (Company)

Include your company legal disclaimer here, if needed