

# How to Inject Accessibility Into Your Organization

(when you can't just stop everything until you get it right)

Visa

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John Slatin AccessU 2018

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## Today's Agenda

- ❖ Introduction
- ❖ Background
- ❖ The Problem
- ❖ Visa's Solution
- ❖ Your Solution
- ❖ Questions

## Introduction

James Green

- ❖ Leads Visa's Global Accessibility and UX Research teams
- ❖ Member of Board of Directors, Knowbility Inc.
- ❖ W3C WAI Education & Outreach Working Group

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## Background

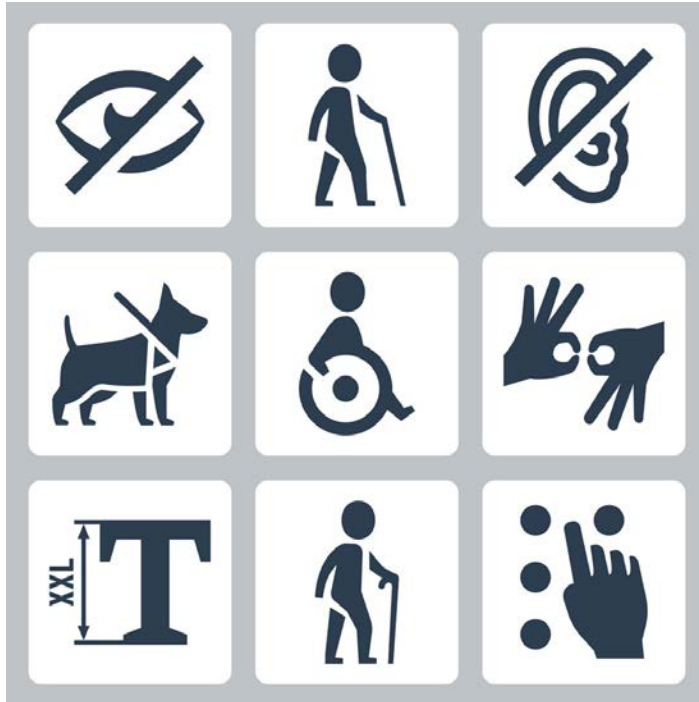
### What is Accessibility vs. Usability?

- ❖ Usability is the science and art of reducing visual, mental, motor, and memory load on users.
- ❖ Accessibility is Usability, with a focus on users with disabilities.
- ❖ Accessibility (abbreviated a11y) simply adds Personas to our list.
- ❖ The implementation is sometimes different, but the idea is the same: Understand your users, and design for them.

- ❖ While Usability is often focused on making things easier, Accessibility is often focused on making things possible.

### Digital Accessibility

Making web and mobile technology accessible is about making products and information available to... **everyone, everywhere.**



### Diverse User Needs

There are multiple audiences who benefit from accessibility but the short answer is, everyone benefits. When we design and develop products for everyone we improve the experience for everyone.

#### Vision

- ❖ Blindness
- ❖ Color Blindness
- ❖ Low Vision
- ❖ Screen Glare/sunlight

#### Hearing

- ❖ Deafness
- ❖ Hearing Loss
- ❖ Noisy Environments

#### Cognitive

- ❖ Attention Deficit

- ❖ Short Term Memory Loss
- ❖ Limited Problem-Solving Skill
- ❖ Limited Comprehension/Language
- ❖ Cognitive Overload

#### Physical

- ❖ Limited Mobility
- ❖ Slow Movement
- ❖ One Handed Mobile Use
- ❖ Reduced Dexterity
- ❖ Limited Fine Motor



#### Temporary Disabilities

Temporary disabilities can occur at any time of life for a variety of reasons including injury or illness.

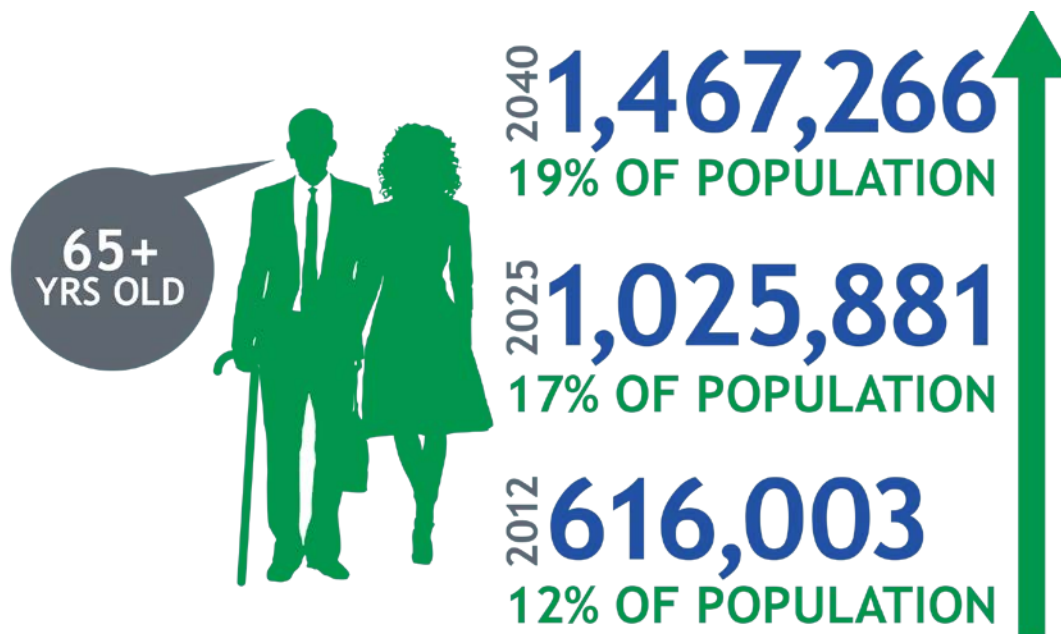
Clear Vision vs. Vision with Detached / Torn Retina



#### The Aging Population

As we age the likelihood of experiencing a disability, or change in ability, increases.

- ❖ Vision loss
- ❖ Hearing loss
- ❖ Decreased mobility
- ❖ Cognitive changes



Source: Colorado State Demographers Office, 2013

### Assistive Technologies

Many user needs are addressed through assistive tools including hardware and software

- ❖ Screen Readers
- ❖ Closed Captioning
- ❖ Audio Description
- ❖ Screen Magnification
- ❖ Voice Dictation / Speech to Text
- ❖ Input Devices
- ❖ Keyboards
- ❖ Braille Display

### Digital Inclusion – the right thing to do

Accessibility fits directly into Visa's corporate goals around financial inclusion. Developing a culture of inclusion at Visa is where it all starts.

We enable and inspire

- ❖ Inspire success
- ❖ Remove barriers
- ❖ Value inclusivity and diversity

### Laws and Regulations

Making products accessible isn't just the right thing to do, sometimes it is the legal thing to do.

- ❖ Section 508 of the Rehabilitation Act

- ❖ Americans with Disabilities Act (ADA)
- ❖ Accessibility for Ontarians with Disabilities Act (AODA)
- ❖ European Accessibility Act
- ❖ International laws

Most international a11y laws require WCAG 2.0 AA conformance

Web Accessibility lawsuits continue double digit growth

Some governments have laws that require accessibility for both public and private companies

Public awareness of and demand for human rights issues continue to grow

The US DOJ prosecutes web accessibility cases under the ADA.

### Market Opportunity

Beyond ethical and legal reasons for accessibility there are also significant economic benefits and business opportunity.



The Problem: You need a sustainable, scalable accessibility program.

To solve that problem, you need to ask a lot of questions...

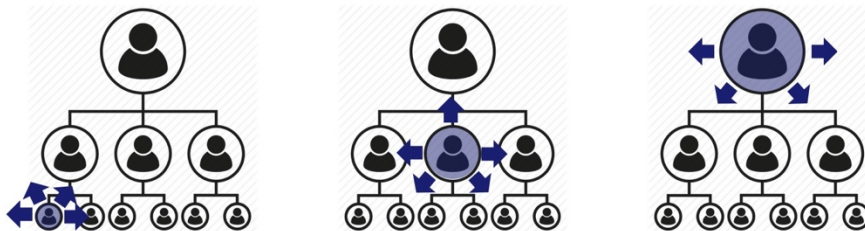
Sustainable progress needs a strategy. To make one, you must understand:

- ❖ Level of Accessibility of your Product(s)
- ❖ Leadership Support and Vision
- ❖ Current and Future Stakeholders
- ❖ Resource availability (budget, staff, tools, etc.)
- ❖ Skills and role mix among staff
- ❖ Processes and how they can change
- ❖ How much time you need/have

Where are you with Accessibility Leadership?

Consider...

- ❖ Who is leading / will lead this effort?
- ❖ Why you are doing this.
- ❖ How far up does awareness/support currently go?
- ❖ Organizational culture
- ❖ Change management
- ❖ Long term, securing support from higher up is key



### What are your Stakeholders' needs and timeframes?

Consider...

- ❖ Who are your stakeholders now and later?
- ❖ Are you under external pressure to do this?
- ❖ Legal, governmental, client, customer pressure?
- ❖ Are there hard deadlines?
- ❖ How long can/will they wait to see progress?
- ❖ Do they trust you?
- ❖ Are they mad at you?
- ❖ Do you anticipate any of these above things to happen?

### Do you have the right funding, staff, skills, and tools?

Consider...

- ❖ Getting expert help to size this effort.
- ❖ Who does your design and development now?
- ❖ Do you have the right skill set on your team?
- ❖ Who does testing now? Will they need to add this to their plates?
- ❖ Do you have enough people?
- ❖ Do you have the tools needed to develop and test accessible code?
- ❖ Do you even have the expertise to get the support you need?

### How will your process need to change to adopt A11y?

Consider...

- ❖ How does your process work now? Is it ideal?
- ❖ What is your development methodology?
- ❖ Where are your team(s) located?
- ❖ How disciplined are the teams? Is quality already an issue?
- ❖ How motivated are the teams? Will adopting new requirements need process change?

- ❖ How cooperative are the teams? If you don't have authority (sometimes even when you do) you'll need to influence.
- ❖ How will you be sure that code is accessible?
- ❖ How will you make sure it stays that way?
- ❖ How will you claim accessibility to stakeholders?

### How accessible is your product today?

Consider...

- ❖ What is your product? This will determine your requirements.
- ❖ You don't want to be comprehensive in testing yet, but you need enough accurate data to get support and funding and make a realistic plan.
- ❖ Run automated tools\* and do quick testing on key pages/templates to get a feel for how bad things are.
- ❖ Don't freak out. Existing products that didn't consider accessibility are going to be bad. Maybe very bad.
- ❖ Accessibility is great to add right before a front end redesign. Retrofitting is possible, it's just more painful.

### Once you know how things stack up...

Be ready...

- ❖ Leadership and vision are necessary to drive this but it can be done at any level of the org.
- ❖ This is primarily a organizational culture issue.
- ❖ Stakeholders must be managed carefully as jobs, deals, fines, or worse may be on the line.
- ❖ Accessibility is extra work and takes extra time.
- ❖ You have to be thoughtful and careful training, hiring, and/or procuring resources.
- ❖ Your product might look great, but your team may be just getting by. Adding accessibility to the process will show just how messy things really are.

## Visa's Solution: What we did to make WCAG usable for our design and dev teams

### Accessibility Team Origins

- ❖ First Project: Visa Debit Gift Card Web App in 2006
- ❖ Trained by Knowbility, worked with WC3
- ❖ World's First WCAG 2.0 AA Major Commercial Website in 2007
- ❖ Next Project was Section 508
- ❖ More Projects Followed as Demand Grew
- ❖ Decision Point: Grow or Scale? 2012
- ❖ UX problem to solve
- ❖ WCAG is written for policy makers, not developers
- ❖ The VGAR is first released: 2013

## Visa Global Accessibility Requirements (The VGAR)

- ❖ Technical requirements for web, iOS, and Android
- ❖ Mapped directly to WCAG 2.0 AA
- ❖ 1:1 Test Scenarios with Videos
- ❖ 90 Minute Training Module
- ❖ FAQs
- ❖ Available to all Visa Teams
- ❖ <http://accessibility/#/>

The screenshot shows the Visa Global Accessibility Requirements (VGAR) web page. The top navigation bar includes the Visa logo and links for Accessibility, Requirements, Testing, Training, and FAQ, along with a search icon. The main content area is titled "Global Accessibility <sup>beta</sup>" and features a sidebar with a table of contents. The table of contents lists various sections, with "Interaction" expanded to show sub-sections like "Accessible Forms (INT-001)", "Error Messaging (INT-002)", "System Messages (INT-003)", "Modal Windows (INT-004)", "Onchange / Onfocus (INT-005)", "Buttons and Links (INT-006)", "Control Moving Content (INT-007)", "No Blinking/Flashing (INT-008)", and "Give Users Time (INT-009)". The "Content" section is also listed. The main content area displays the title "INT-WEB-004" and the subtitle "Create keyboard friendly modal windows that trap focus". Below this, there are links for "Requirement(s)", "Test Procedure(s)", and "Related Content". The "Requirement(s)" link is highlighted, leading to a table with the following content:

Requirement(s)	
INT-WEB-004-01	Modal role="dialog"

## Why the VGAR?

Early on we realized that in order to scale accessibility across Visa we needed a program approach that would equip product development teams with little to no experience implementing accessibility.

## WCAG is Complex

- ❖ Over 1,200 pages
- ❖ Vague at times
- ❖ Requires SME
- ❖ Requires interpretation

Developers want Simple

- ❖ Workflow
- ❖ Code Snippets
- ❖ Components
- ❖ Clear Requirements

Challenges to Face

- ❖ We were few
- ❖ WCAG is scary
- ❖ Lack of Confidence
- ❖ Lack of Skills
- ❖ Self Service vs. Coaching

Screenshots of the VGAR

← → ↻ Ⓜ accessibility//

**VISA** Accessibility Requirements Testing Training FAQ Search

## Stay Globally Compliant with the Visa Global Accessibility Requirements (VGAR)



### VGAR Meets WCAG 2.0 AA

WCAG 2.0 AA is the accepted international standard for accessibility globally and by making sure that Visa products conform to this standard we also meet legal requirements globally. Additionally, by meeting WCAG 2.0 AA we also meet the U.S. government standard known as **Section 508**.

#### More Info On:

WCAG 2.0 AA      Section 508  
Accessibility for Ontarians with Disabilities (AODA)  
European Accessibility Act


#### Requirements Across All Platforms

Web	iOS	Android
	Available in Alpha status*	Available in Alpha status*

\*These requirements and test scenarios are in Alpha status and may be incomplete. Please Contact Us with all feedback and any questions.

## The Visa Global Accessibility Requirements (VGAR) Process

Everyone involved in the product development lifecycle has a role to play in making products accessible for everyone, everywhere.



Product managers and project managers have a critical role to play in ensuring a successful accessibility effort. The Visa Accessibility team can partner with you to discuss a process that makes sense for your timeline and budget.

**Get Started with Accessibility**

Contact the Visa Accessibility team to discuss your team's needs. We will introduce you to the resources available and help you implement an accessibility strategy that make sense.

**Contact Us**

VISA

Accessibility

Requirements

Testing

Training

FAQ

modal

Global Accessibility beta

Overview

General

Navigation

Interaction

Content

Visual

Accessible Forms (INT-001)

Error Messaging (INT-002)

System Messages (INT-003)

Modal Windows (INT-004)

Onchange / Onfocus (INT-005)

Buttons and Links (INT-006)

Control Moving Content (INT-007)

No Blinking/Flashing (INT-008)

Give Users Time (INT-009)

INT-WEB-004-08

Modals Trigger on Enter

Modal windows must have the < ENTER > keyboard event trigger set as the modal's main call-to-action (e.g., Submit form, etc.). For the most part you shouldn't have to do anything programmatically for this control unless you're using non-standard or custom controls. Make sure you put the focus on the first focusable element in the modal. If it's a control in a form then hitting enter should submit your form (as long as the form has a 'submit' action). If the focus is placed on a link or button then hitting Enter will activate that button. If you use custom controls make sure that if the user hits enter the primary action of the modal is triggered.

INT-WEB-004-09

Modals Close on ESC

Modal windows must have the ESC keyboard event set to close the modal.

<div id="modal" role="dialog" aria-labelledby="title" aria-describedby="description">  
<h1 id="title">Payment Information</h1>  
<div id="description" class="screen-reader-only">  
Use this modal window to pay for the thing you're trying to buy  
</div>  
</div>

```
$("#openModal").click(function(){  
  $("#modal").show();  
  $(document).on('keydown', function(evt){  
    evt = evt || window.event;  
    var charCode = evt.keyCode || evt.which;  
    if(charCode === 27){  
      $("#modal").hide();  
    }  
  });  
});
```

INT-WEB-004-10

Modals Restore Focus

Modal windows must restore focus to their triggering element when modal is closed.

<button class="open-modal" id="someId">Open Modal</button>

```
var modalOpener = '';  
  
$('.open-modal').click(function(){  
  modalOpener = $(this).attr('id');  
  $("#modal").show();  
});  
  
$("#closeModal").click(function(){  
  $("#modal").hide();  
  $('#'+ modalOpener).focus();  
});
```

## Global Accessibility beta

### Overview

- General
- Navigation
- Interaction

Accessible Forms (INT-001)  
Error Messaging (INT-002)  
System Messages (INT-003)  
Modal Windows (INT-004)  
Onchange / Onfocus (INT-005)  
Buttons and Links (INT-006)  
Control Moving Content (INT-007)  
No Blinking/Flashing (INT-008)  
Give Users Time (INT-009)

### Content

### Visual

INT-WEB-004-10

#### Modals Restore Focus

Modal windows must restore focus to their triggering element when modal is closed.

```
<button class="open-modal" id="someId">Open Modal</button>
```

```
var modalOpener = '';  
  
$('.open-modal').click(function(){  
  modalOpener = $(this).attr('id');  
  $('#modal').show();  
});  
  
$('#closeModal').click(function(){  
  $('#modal').hide();  
  $('#' + modalOpener).focus();  
});
```

#### Test Procedure(s)

INT-WEB-004-01-T

#### Screenreader

Confirm that when a modal window pops up, it is described to the user as such.

INT-WEB-004-02-T

#### Screenreader

Confirm that when a modal window pops up, the modal's main heading or title is read aloud to the user.

INT-WEB-004-03-T

#### Screenreader

Confirm that when a modal window pops up, any helpful information that is above the first focusable element is read aloud after the modal's main heading or title.

INT-WEB-004-04-T

#### Screenreader

Confirm that focus is trapped inside all modal windows by cycling through headings, landmark roles, and links.

## Visa Accessibility Training Dashboard

This training consists of 4 modules, each has a video and a test. You must pass each test with 70% or better to move on to the next module. The questions are randomized, so if you retake any module you may receive different questions. You may leave and return to this training at a later date, however your progress will only be saved up to the last completed module.

Current Status

100% Complete

Print Certificate

Module 1  
Accessibility Overview

Status: **Complete**  
Passed with 100%

Retake Module 1

Module 2  
Accessibility At Visa

Status: **Complete**  
Passed with 100%

Retake Module 2

Module 3  
Accessibility Testing

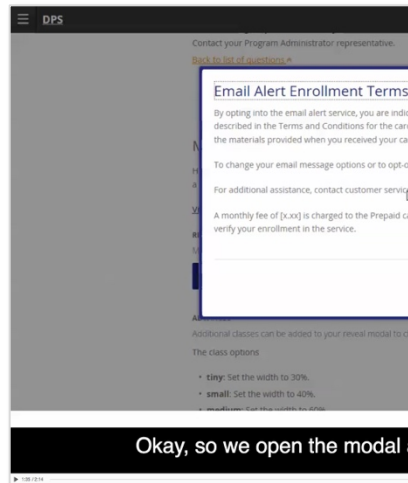
Status: **Complete**  
Passed with 100%

Retake Module 3

Module 4  
VGAR

Status: **Complete**  
Passed with 100%

Retake Module 4



## Module 3 - Accessibility Testing

Click the Take Test button to take the test for this module.

**VISA Accessibility Training**

### VGAR Site and Reporting Findings

During accessibility testing, when errors are found, it is best to report them by first submitting the error in your project's bug tracking tool. Reference the VGAR requirement code that applies to each error to make locating the requirement easy for the assigned developer.

Next, provide a brief description of the page where you discovered the error and anything else that will help the developer duplicate the error.

Sometimes, including a screenshot image or video can help to illustrate the problem.

**Requirement(s)**  
GEN-WEB-001-01

**Valid Code**  
GEN-WEB-001-01

Valid Code: All HTML pages must have code that is fully valid.

01:58

## Training Status: 156/196 Passed

[send reminder](#)

Id	User	Status	Scores	Average	Date	Actions	
14	lsmccarthy	Pass	100, 100, 100, 96	98%	4/17/2015 1:30:31 PM	Clear Quizzes	Delete
15	jgreen	Pass	100, 100, 100, 100	100%	4/22/2015 7:53:44 PM	Clear Quizzes	Delete
21	ndhickok	Pass	70, 80, 70, 100	86%	4/24/2015 4:29:28 AM	Clear Quizzes	Delete
22	jgreen	Pass	90, 100, 80, 92	90%	5/3/2018 4:50:51 PM	Clear Quizzes	Delete
23	litalboite	Pass	90, 80, 70, 92	86%	5/7/2018 8:52:25 PM	Clear Quizzes	Delete
24	ppathrak	Pass	100, 100, 90, 76	86%	1/5/2018 11:10:48 AM	Clear Quizzes	Delete
25	galimudd	Pass	80, 100, 70, 76	78%	4/24/2015 7:26:47 AM	Clear Quizzes	Delete
26	lpathrak	Pass	80, 80, 80, 92	86%	2/23/2018 6:25:03 AM	Clear Quizzes	Delete


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Accessibility
Requirements
Testing
Training
FAQ
modal

Global Accessibility <sup>beta</sup>

Overview

- Firefox Extensions
- Standalone Tools
- Screen Readers
  - JAWS by Freedom Scientific
    - NVDA
    - OSX VoiceOver (Desktop)
    - iOS VoiceOver (Mobile)
    - TalkBack for Android
- Downloads

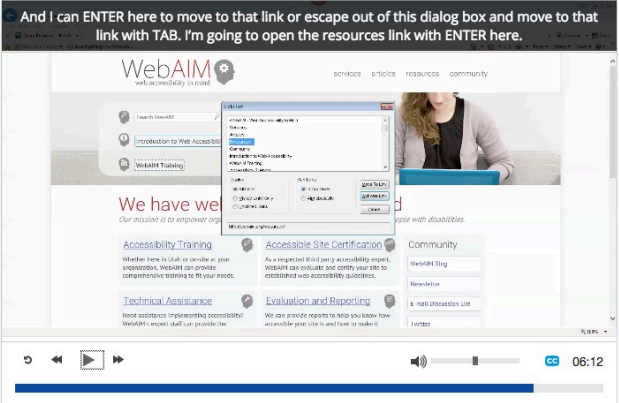
## JAWS by Freedom Scientific Desktop Screenreader



JAWS is a popular choice for Windows users with over 50% of the screenreader user market. A demo version can be downloaded and used prior to obtaining a.

[Download Tool](#)

And I can ENTER here to move to that link or escape out of this dialog box and move to that link with TAB. I'm going to open the resources link with ENTER here.



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Global Accessibility <sup>beta</sup>

Overview

- Firefox Extensions
- Standalone Tools
- Screen Readers
- Downloads
  - VGAR Test Script
  - VGAR Requirements and Tests
  - Android VGAR Requirements and Tests 2017-07-14 **ALPHA!**
  - iOS VGAR Requirements and Tests 2017-07-14 **ALPHA!**

## Web VGAR Requirements and Tests Downloads

Req. Order	Req ID	Short Name	Requirement	Test ID	Test ID	Test Tool(s)	
1	GEN-001-01	Valid Code	All HTML pages must have code that is fully valid.	3	GEN-001-01-T	HTML Validator	Run an HTML
2	GEN-002-01	Doctype	A valid and consistent doctype must be set for all pages.	4	GEN-002-01-T	HTML Validator	Check the
3	GEN-002-02	Same Doctype	All pages must have the same doctype.	5	GEN-002-02-T	HTML Validator	Check that
4	GEN-003-01	Page Title	An accurate and descriptive page title must be included on every page.	41	GEN-003-01-T	FAE > Navigation > Title	Verify that
5	GEN-003-02	Unique Page Title	The page title must be unique and conform to a consistent structure among the other pages.	42	GEN-003-02-T	FAE > Navigation > Title	Verify that
6	GEN-004-01	Lang Tag	The applicable <lang> must be defined on every page, inside the html tag.	43	GEN-004-01-T	FAE > Navigation > Language Changes	Confirm that
7	GEN-005-01	Frame Use	Frames should only be used if absolutely necessary due to potential confusion for screen-reader users.	79	GEN-005-01-T	FAE > Navigation > Frames	Confirm that
8	GEN-005-02	Frame Titles	Frames intended for user interaction must have a unique, descriptive, and consistent title so users can identify it easily.	80	GEN-005-02-T	Screenreader > Frames	Bring up it (screened)

This excel document outlines all of the current VGAR detailed requirements and related test procedures in an easy to sort, search, and follow format.

[Download Web VGAR Requirements and Tests](#)

[illegible]

The Visa Global Accessibility Requirements test procedure is outlined in the VGAR Testing Script. The test script is presented in a Microsoft Excel document so that it can be filtered as needed during testing. During the test procedure, the tester simply follows the tests in their prescribed order and determines whether each page passes or fails each test. When a failure is found, the tester can document the failure on the excel tab provided for documenting findings.

This is used to sort the document by test number. The VGAR tests are all prescribed in an order that allows you to use one tool at a time and quickly move through the test

[illegible]

## The Visa Accessibility Process

To consistently integrate accessibility across Visa's products accessibility must be integrated each phase:

## Roles and Responsibilities

- ❖ Executive Support
- ❖ Consistent Mandate
- ❖ Legal & Risk
- ❖ Global Commitment

## ❖ Partnerships

### Product

- ❖ Requirements
- ❖ Governance
- ❖ Setting Expectations
- ❖ Learn User Needs
- ❖ Issuer / Merchant

### Design

- ❖ Inclusive Design
- ❖ UX Research
- ❖ Learn User Needs
- ❖ Research
- ❖ Web vs. Mobile

### Development

- ❖ Accessibility API
- ❖ WAI-ARIA
- ❖ iOS / Android
- ❖ Automated Tools
- ❖ Ongoing Training

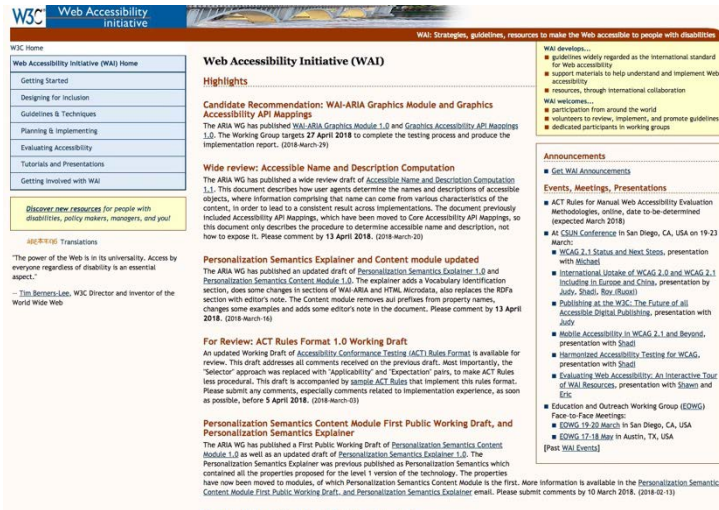
### Test and QA

- ❖ Assistive Technologies
- ❖ Testing Process
- ❖ Automated Tools
- ❖ Manual Tools
- ❖ Ongoing Testing

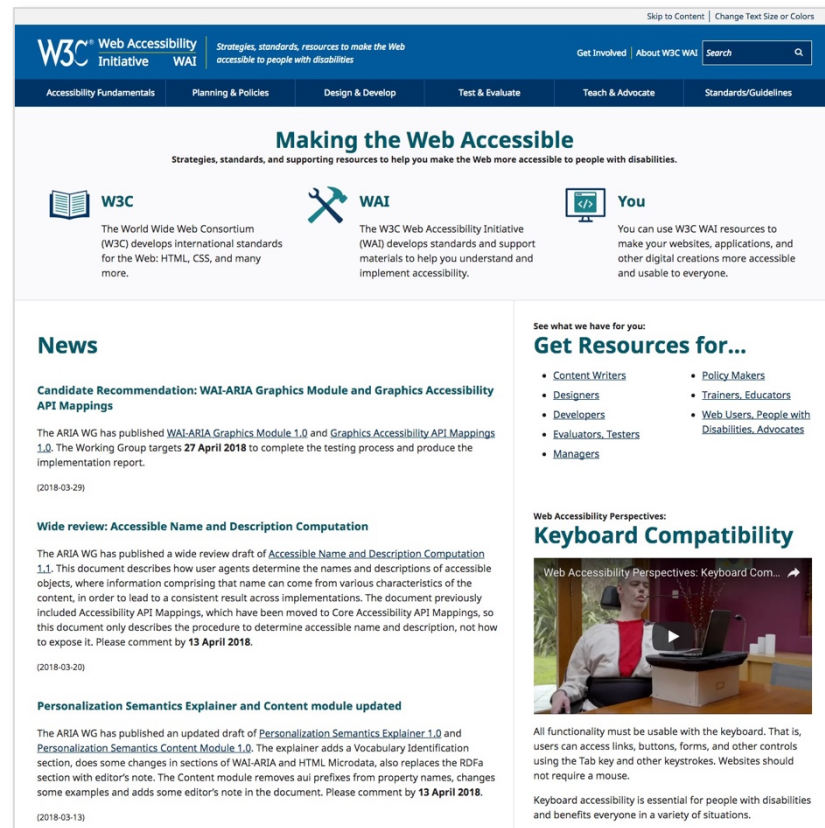
### Contributing to the Cause

#### Speaking about the Accessibility & the VGAR

- ❖ Volunteering with W3C
  - Education and Outreach Working Group (EOWG)
  - WAI Website Redesign (PM, UX Research, IA, Visual Design)



➤ Old Design:



➤ New Design:

❖ Moving the VGAR to developer.visa.com in 2018!

Your Solution: Where do you start?

How can you inject accessibility into your organization like we did?

- ❖ Gather the answers to those questions we asked earlier.
- ❖ Get GOOD help! Hiring and Procurement Matter!

- ❖ Write requirements and test cases that work for your team and product (you can start with the VGAR)
- ❖ Distribute these somewhere centrally and begin talking about them. A lot.
- ❖ Make the case for accessibility to anyone who will listen.
  - Financial Opportunity
  - Corporate Responsibility
  - Financial and Reputation Risk
- ❖ Keep going for years. Accessibility is about influencing culture, not changing process.

Team culture is what you need to change. Tell your team this:

- ❖ Accessibility is not extra, not new, and not hard.
- ❖ It's not an add-on or a burden.
- ❖ It's your job.
- ❖ Your job description was incomplete before.
- ❖ Now you get to do more and for good reason.

Questions

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**a11y**