## **ABSTRACT**

Digital product accessibility, taken into consideration at the end of the production chain, leads to processing too late, issues that should have been dealt with before, without the appropriate means or resources to do so. Understanding how critical this is, is a crucial part of the web accessibility process. Who, then, gets to be responsible for which accessibility requirements, and when in a web production? This document aims to identify the WCAG 2.0 Success Criteria by roles (e.g., graphics designer, interaction designer, back-end developer, etc.) so web accessibility becomes all about being able to plan the right intervention, by the right person, at the right time within the product development lifecycle.

#### **INTRODUCTION**

Accessibility is not simply an extra requirement that can be added to the digital product development lifecycle. In order to show significant conformance results, accessibility must be incorporated in each existing link of the production chain. The only way to successfully accomplish accessibility is to be able to plan it from the very start, and that means assigning responsibility to the various stakeholders and share the tasks in order to produce accessible content.

Accessibility standards for people with disabilities, aging populations and mobile web users require changing many habits within the organisations who are seeking to incorporate them into their development practices. The recommendations found in WCAG 2.0 often challenge practices that are usually considered appropriate, proven and optimal by the organisation that has put them into place.

The willingness to integrate accessibility requirements within a production team's roadmap often results in sudden habit changes, which may seriously jeopardise the profitability of any development production. How then, can an organisation achieve web accessibility efficiently and within available resources?

Although the principles applied in web accessibility practice are not difficult to implement for the most part, the risk of making certain costly mistakes is very high. The purpose of this document is to break down the 61 Success Criteria found in WCAG 2.0 into different smaller checklists, so each stakeholder in a development lifecycle could then integrate into his or her daily practice.

### **COMPLIANCE STRATEGY**

Clarity and transparency is important throughout the entire product lifecycle and thus is our strategy for accessibility comformance<sup>1</sup> and achievement of this through both our internal process as well as any further specific enhancements raised by stakeholders or clients.

#### **MVP WCAG 2.0 COMPLIANCE**

Our minium level of compliance for an MVP (minimum viable product) should adhere to the applicable WCAG 2.0 Level A success criteria. See testing strategy for more details.

# **DEFAULT WCAG 2.0 COMPLIANCE**

Our default level of compliance throughout our production chain on a major versions of a product should adhere to the applicable **WCAG 2.0 Level A and Level AA success criteria**. See testing strategy for more details.

#### **ADVANCED WCAG 2.0 COMPLIANCE**

Continous improvements on design and development should attempt to adhere to the applicable WCAG 2.0 Level AAA success criteria where applicable. Advanced compliance should only be considered post successful default compliance application of our defualt accessibility strategy on any digital product offerings. See testing strategy for more details.

#### **ISSUES IDENTIFIED ON POST PRODUCTION**

Any accessibility and/or usability issues that are covered in WCAG 2.0 and raised by either internal or external stakeholders and/or clients, or a client's external agency, should be raised against a specific success criteria as identified in the following lists in order to be considered for prioritasations and production. Only applicable WCAG 2.0 Level A and AA can be raised.

Any accessibility and/or usability issues that are covered in WCAG 2.0 and raised by either internal or external stakeholders and/or clients, or a client's external agency that are direct result of the client's environment and/or customisation are to be discussed and act as consultants to direct the applicable teams in possible rectification but will not automatically be placed in prioritasation and/or production. For the purposes of a generic project, this constitutes a proposal of a typical digital service production chain consisting of the following stakeholders:

ROLE WCAG 2.0	LEVEL	LEVEL AA	LEVEL AAA
Project/Product Management	N/A	N/A	N/A
Analysis	2	2	5
Architecture	2	3	4
Ux/Ix Design / Usability	15	7	14
Graphics / Visual Design	12	9	11
Content Strategy	11	3	7
Search Engine Optimisation	13	6	9
HTML/CSS Prototyping	12	7	6
Front-End Development	25	13	22
Back-End Development	15	7	10
Quality Assurace/Control	25	13	23

Obviously, not every production chain has access to all those resources and some times, the same people will cumulate more than one responsibility. In some cases, there are even more stakeholders taking part in the project. This is not meant to be an exhaustive list. Rather, this is meant as customisable guidelines intended to help us develop checklists that will fit nicely with their own reality.

## **TOTAL SUCCESS CRITERIA**

N/A	
9	
9	
36	
32	
21	
28	
25	
60	
32	
61	

#### GENERAL OVERVIEW

Breakdown / Summary of the general idea of the SC link to techniques available.

SUCCESS CRITERIA (LEVEL) PRODUCTION CHAIN PHASES	Analysis	Architecture	Ux/Ix Design / Usability	Graphics / Visual Design	Content Strategy	Search Engine Opt.	HTML/CSS Prototyping	Front-End Development	Back-End Development	Quality Assurace/Control	FINASTRA APPLICABLE LEVEL A AND AA SC RESPONSIBILITIES	CLIENT APPLICABLE LEVEL A AND AA SC RESPONSIBILITIES
1.1.1 Non-text Content - Provide text alternatives for non-text content	·				•		•				RESPONSIBILITIES	RESPONSIBILITIES
1.2.1 Audio-only and Video-only (Pre-recorded) - Provide an alternative to video-only and audio-only content					•	•		•		•	_	-
1.2.2       A       Captions (Pre-recorded) - Provide captions for videos with audio					•	•		•		•		
1.2.3       Audio Description or Media Alternative (Pre-recorded) - Video with audio has a second alternative					•	•		•				
					•	•				•		
1.2.4       A       Captions (Live) - Live videos have captions         1.2.5       A       Audio Description (Pre-recorded) - Users have access to audio description for video content					•			•		•		
					•			•		•		-
1.2.6       Main Sign Language (Pre-recorded) - Provide sign language translations for videos         Sign Language (Pre-recorded) - Provide sign language translations for videos						•		•		•		
1.2.7 Extended Audio description (Pre-recorded) - Provide extended audio description for videos					•	•		•		•		
1.2.8 Media Alternative (Pre-recorded) - Provide a text alternative to videos					•	•		•		•		
1.2.9 Audio Only (Live) - Provide alternatives for live audio						•		•		•		
1.3.1 A Info and Relationships - Logical structure		•	•	•	•	•	•	•	•	•	-	
1.3.2 A Meaningful Sequence - Present content in a meaningful order							•	•	•	•	•	
1.3.3 A Sensory Characteristics - Use more than one sense for instructions			•	•	•			•		•	•	
1.4.1 A Use of Colour - Don't use presentation that relies solely on colour			•	•				•		•	•	•
1.4.2 Audio Control - Don't play audio automatically			•	•				•		•		
1.4.3 🙆 Contrast (Minimum) - Contrast ratio between text and background is at least 4.5:1				•				•		•		
1.4.4 AA Resize Text - Text can be resized to 200% without loss of content or function			•	•				•		•		
1.4.5 ӎ Images of Text - Don't use images of text				•				•		•		
1.4.6 Contrast (Enhanced) - Contrast ratio between text and background is at least 7:1				٠				•		٠		
1.4.7 Low or No Background Audio - Audio is clear for listeners to hear			•	•				•		•		
1.4.8 MAX Visual Presentation - Offer users a range of presentation options			•	•				•		•		
1.4.9 Images of Text (No Exception) - Don't use images of text				•				•		•		
2.1.1 A Keyboard - Accessible by keyboard only			•	•		•	•	•	•	•		
2.1.2 No Keyboard Trap - Don't trap keyboard users					•		•	•				
2.1.3 Keyboard (No Exception) - Accessible by keyboard only, without exception				· ·	· ·		•	•		•	_	
2.2.1 A Timing Adjustable - Time limits have user controls								•	•		-	
2.2.2 A Pause, Stop, Hide - Provide user controls for moving content										•		
			•	•		•		•		•	-	
2.2.3 ӎ No Timing - No time limits	•			•		•		•	•	•		
2.2.4 M Interruptions - Don't interrupt users	•		•	•				•		•		
2.2.5 AN Re-authenticating - Save user data when re-authenticating	•		•					•	•	•		
2.3.1 A Three Flashes or Below - No content flashes more than three times per second			•	•						•	•	
2.3.2 M Three Flashes - No content flashes more than three times per second			•	•				•		•		
2.4.1 A Bypass Blocks - Provide a 'Skip to Content' link				•		•	•	•		•		
2.4.2 A Page Titled - Use helpful and clear page titles		•			•	•	•	•		•	<ul> <li>••••••••••••••••••••••••••••••••••••</li></ul>	
2.4.3 A Focus Order - Logical order						•	•	•	•	•		
2.4.4 A Link Purpose (In Context) - Every link's purpose is clear from its context			•		•	•		•	•	•		
2.4.5 🔥 Multiple Ways - Offer several ways to find pages		•	•	•		•	•	•	•	•		
2.4.6 (A) Headings and Labels - Use clear headings and labels		•	•	•	٠	•	•	•	•	•		
2.4.7 🔥 Focus Visible - Ensure keyboard focus is visible and clear				•		•	•	•	•	•		
2.4.8 AAA Location - Let users know where they are		•	•	•		•	•	•				
2.4.9 Link Purpose (Link Only) - Every link's purpose is clear from its text			•		•	•		•	•			
2.4.10 🚧 Section Headings - Break up content with headings		•				•	•	•	•	•		
3.1.1 A Language of Page - Page has a language assigned							•	•				
3.1.2 A Language of Parts - Tell users when the language on a page changes											-	
3.1.3 M Unusual words - Explain any strange words			•		•		•	•	•	•	-	
3.1.4 M Abbreviations - Explain any abbreviations		•	•				-	•	•	•		
3.1.5 AND Reading Level - Users with nine years of school can read your content		-			•			•		•		
			•		•			-		•		
3.1.6 A Pronunciation - Explain any words that are hard to pronounce					•			•		•		
3.2.1 • On Focus - Elements do not change when they receive focus	•		•	•				•	•	•	•	
3.2.2 • On Input - Elements do not change when they receive input			•					•	•	•	•	
3.2.3 A Consistent Navigation - Use menus consistently			•	•				•		•		
3.2.4 A Consistent Identification - Use icons and buttons consistently			•	•			•	•	•	•		
3.2.5 M Change on Request - Don't change elements on your website until users ask			•	•			•	•	•	•		
3.3.1 A Error Identification - Clearly identify input errors	•		•	•	•			•	•	•		
3.3.2 A Labels or Instructions - Label elements and give instructions			•	•			•	•	•	•		
3.3.3 A Error Suggestion - Suggest fixes when users make errors	•		•	•				•	•	•		
3.3.4 A Error Prevention (Legal, Financial, Data) - Reduce the risk of input errors for sensitive data	٠		•					•	•	•	<ul> <li>••••••••••••••••••••••••••••••••••••</li></ul>	
3.3.5 AAA Help - Provide detailed help and instructions										-		



https://www.wuhcag.com/wcag-checklist/

#### **PROJECT MANAGEMENT**

For the purposes of any project, the project management role includes the tasks normally associated with production planning and the various related monitoring activities. While the project manager (PM) does not really have any implication when it comes to implementing the different Success Criteria from WCAG 2.0, he or she plays a vital role in making sure every stakeholder understands what their role is when it comes to web accessibility.

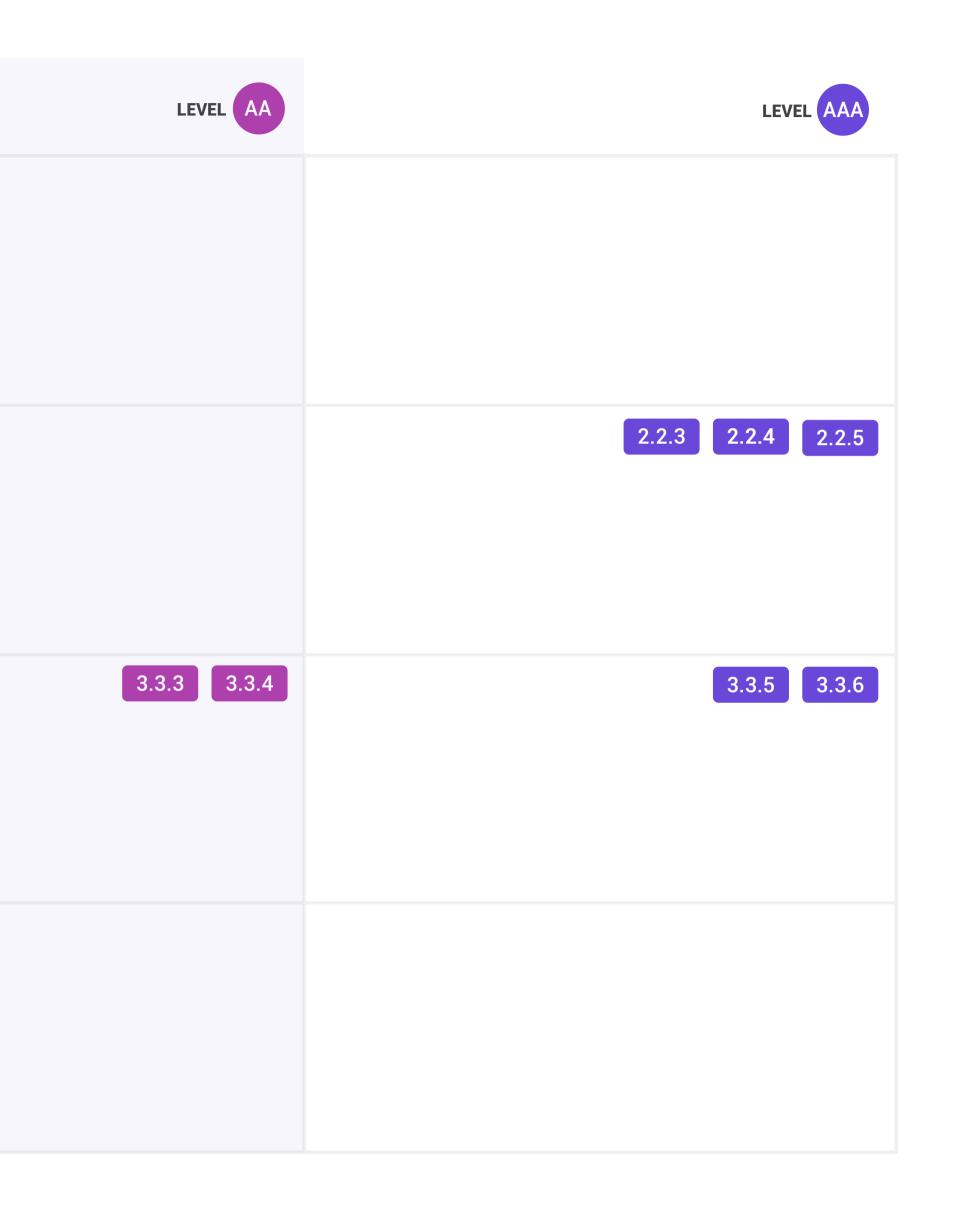
More specifically, in a web accessibility context, the project manager's responsibilities consist of ensuring optimization of the production chain by:

- Integrating the concept of transversality, which is inherent in web accessibility
- Assisting on planning accessibility at each step of the web development lifecycle where applicable
- Allocating the relevant web accessibility responsibilities to every stakeholders
- Along with the Standards Lead, ensuring the technical and functional criteria are being met at every milestone
- Understanding the difference between accessible content and conforming content
- Being aware of the tools' accessibility limitations and working around them
- Assessing the impact of technology platforms on the overall project

# ANALYSIS

The analysis function covers tasks and related quality control normally associated with analysis of the project's strategic orientations, analysis of the options for technology platforms, or functional analysis of Web interfaces.

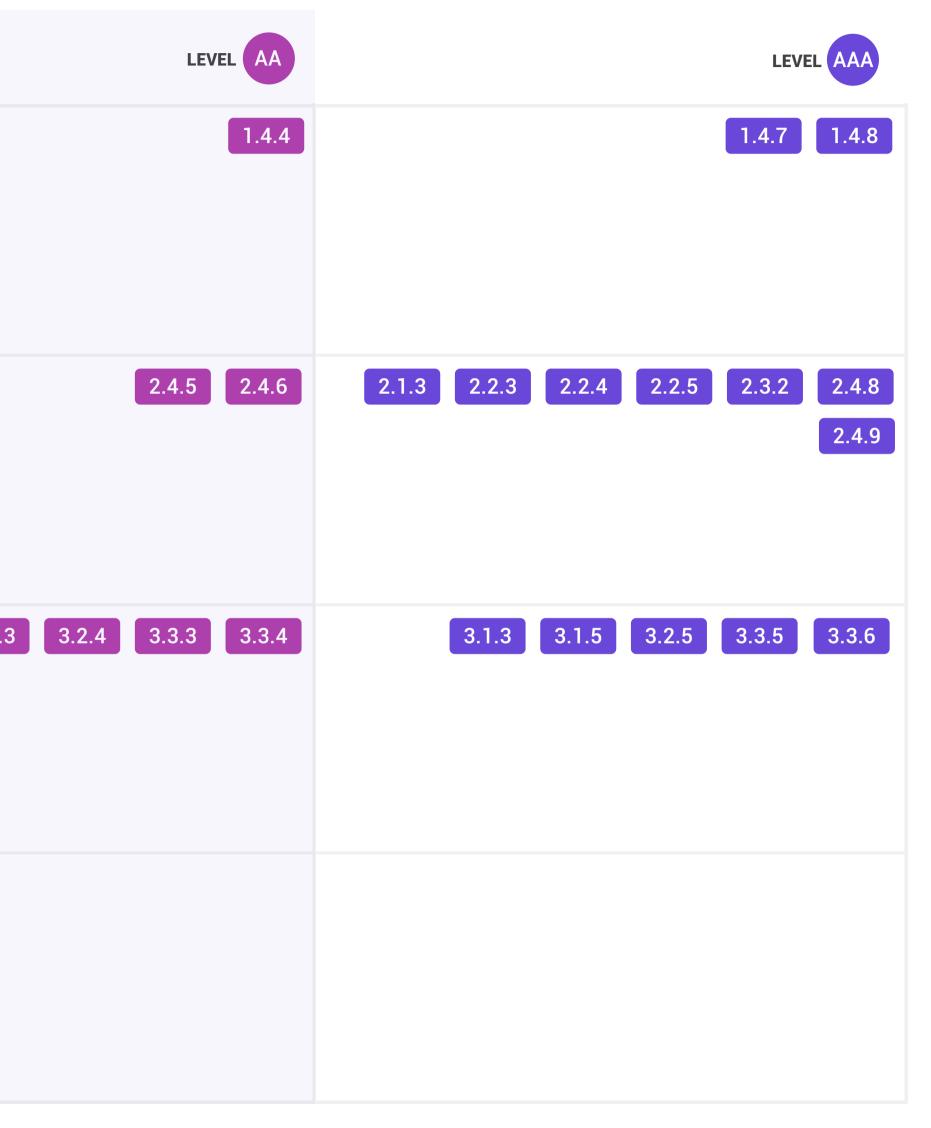
PRINCIPLES	APPLICABLE SUCCESS CRITERIA	LEVEL	
Perceivable			
Operable			
Understandable		3.2.1 3.3.1	
Robust			



# **Ux/Ix DESIGN / USABILITY**

The interaction design / usability function covers tasks and related quality control normally associated with the planning of web interfaces, content changes, interactivity and other interface-related contents of the pages.

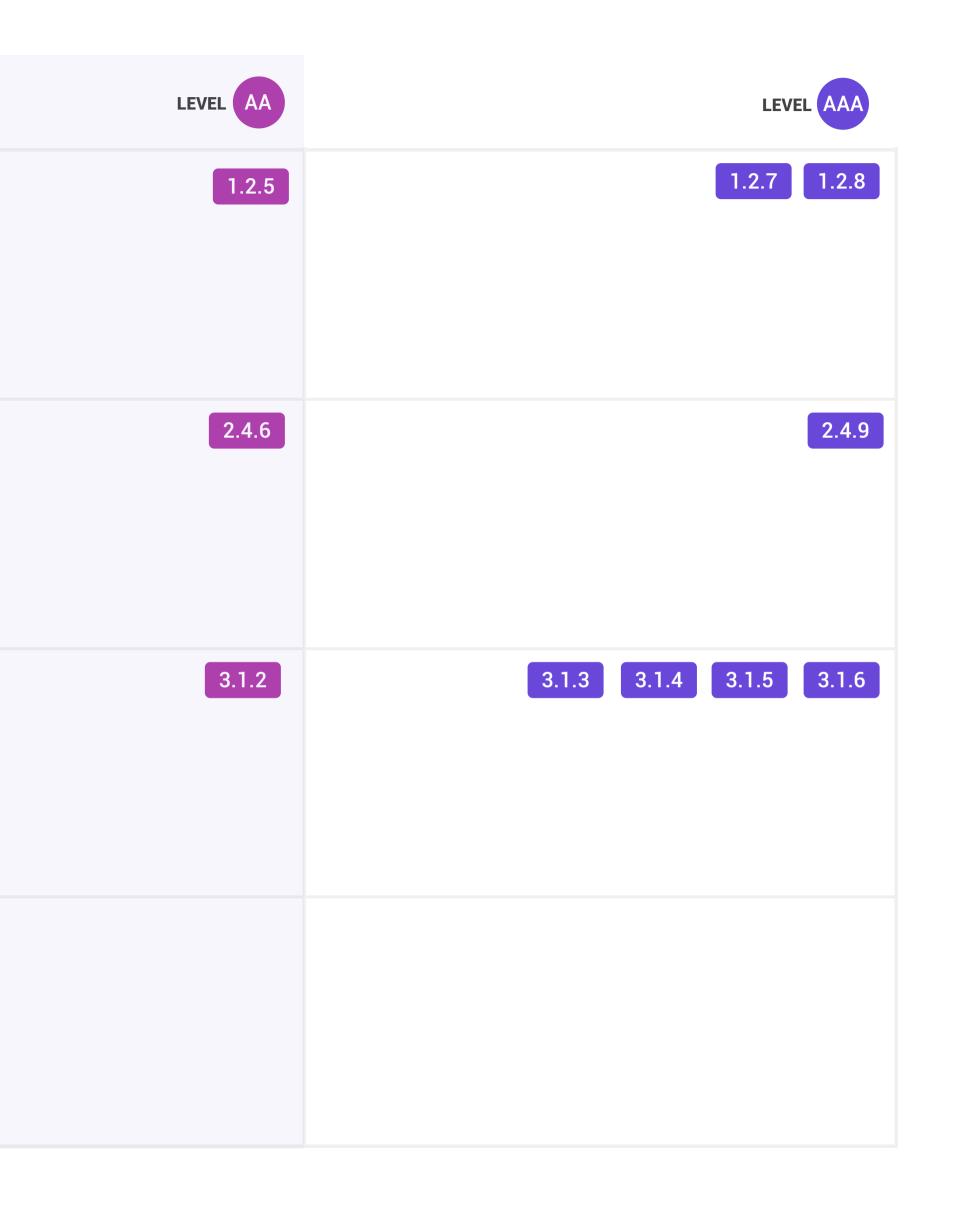
PRINCIPLES	APPLICABLE SUCCESS CRITERIA	LEVEL	
Perceivable	1.3.1	1.3.3 1.4.1 1.4.2	
Operable	2.1.1 2.1.2 2.2.1	2.2.2 2.3.1 2.4.4	
Understandable	3.2.1	3.2.2 3.3.1 3.3.2	3.2.3
Robust		4.1.2	



# **CONTENT STRATEGY**

The content strategy function covers tasks and related quality control normally associated with producing the site's textual contents, equivalent alternative for non-text content and other general text elements presented in the pages.

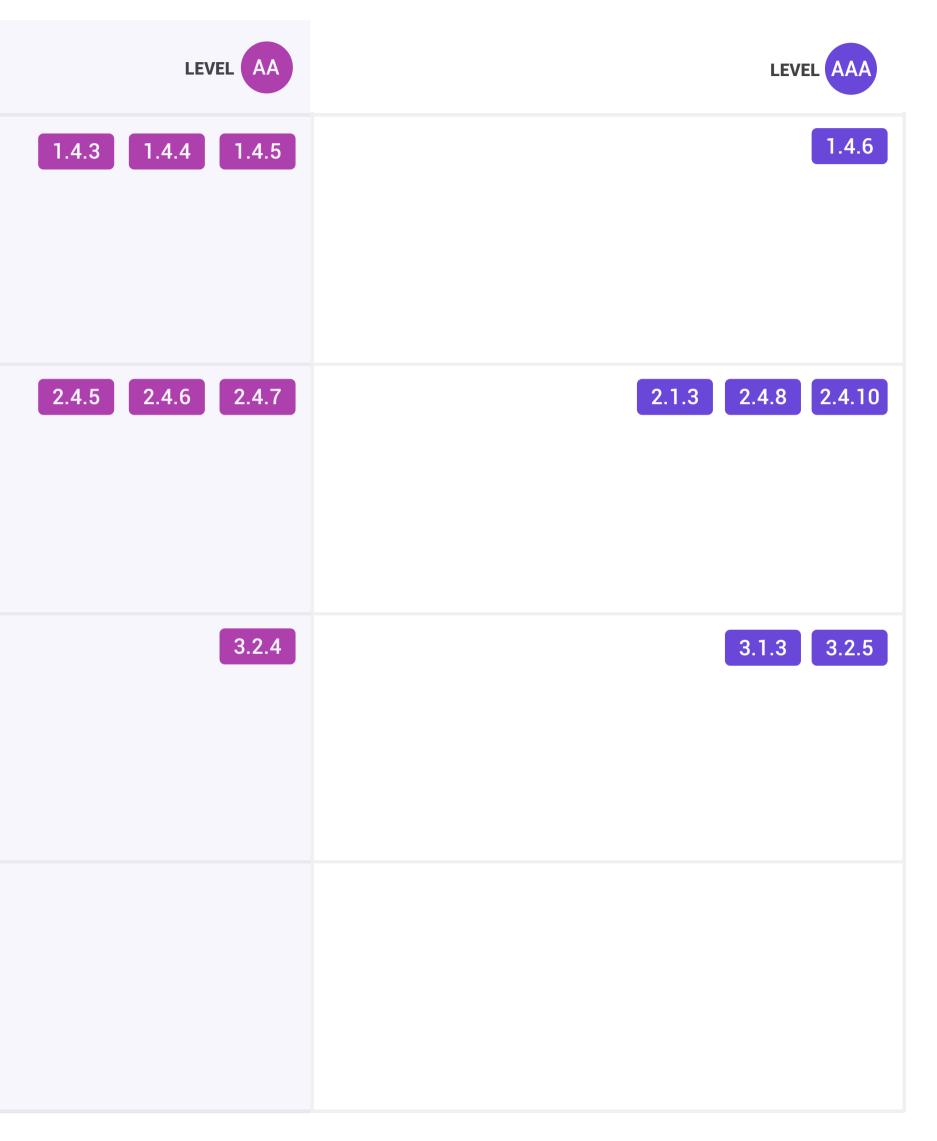
PRINCIPLES	APPLICABLE SUCCESS CRITERIA	LEVEL	
Perceivable	1.1.1 1.2.1 1.2.2	1.2.3 1.3.1 1.3.3	
Operable	2.1.1	2.1.2 2.4.2 2.4.4	
Understandable		3.3.1	
Robust			



# **HTML/CSS PROTOTYPING**

The HTML/CSS prototyping function covers tasks and related quality control normally associated with the production of all web site master templates (HTML and CSS).

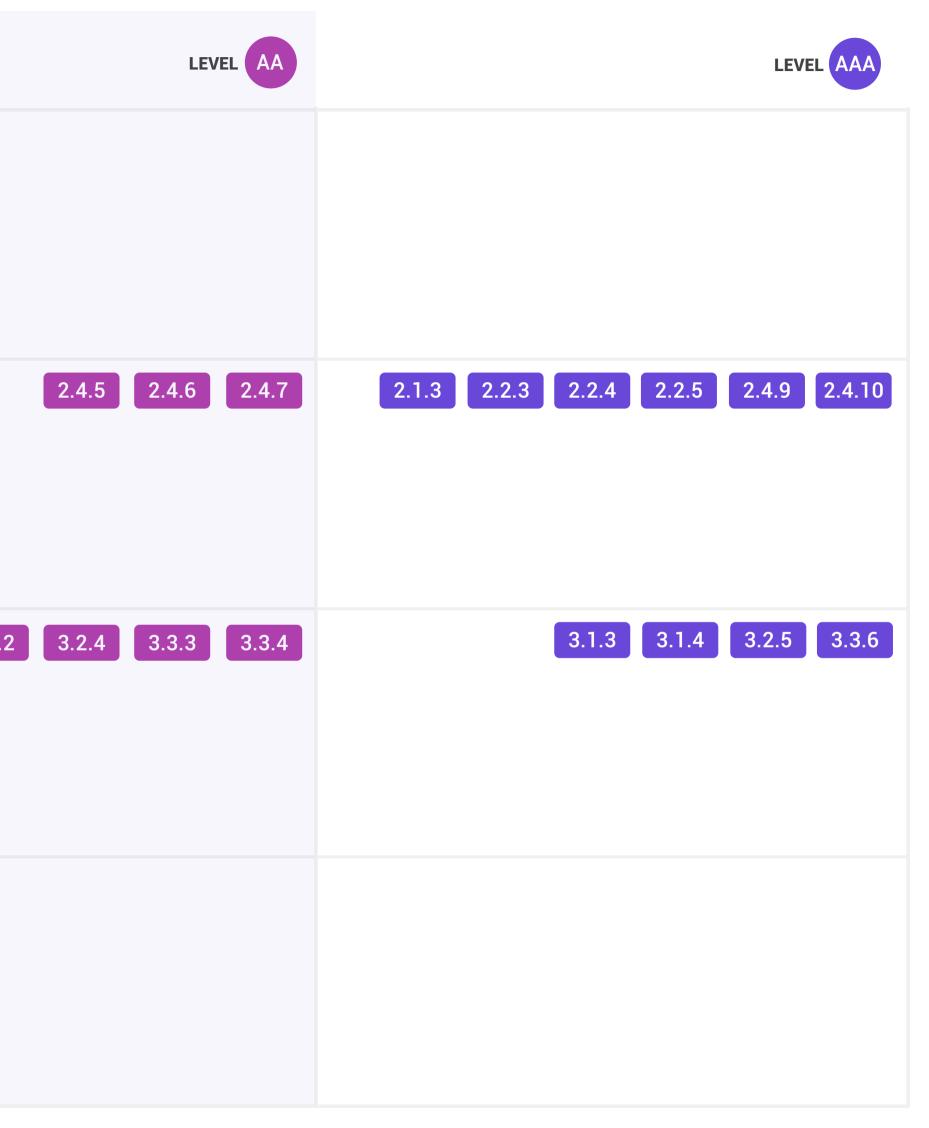
PRINCIPLES	APPLICABLE SUCCESS CRITERIA	LEVEL	
Perceivable		1.1.1 1.3.1 1.3.2	
Operable	2.1.1 2.1.2	2.4.1 2.4.2 2.4.3	
Understandable		3.1.1 3.3.2	
Robust		4.1.1 4.1.2	



# **BACK-END DEVELOPMENT**

The back-end development function covers tasks and related quality control normally associated with the development of server side programing and database management.

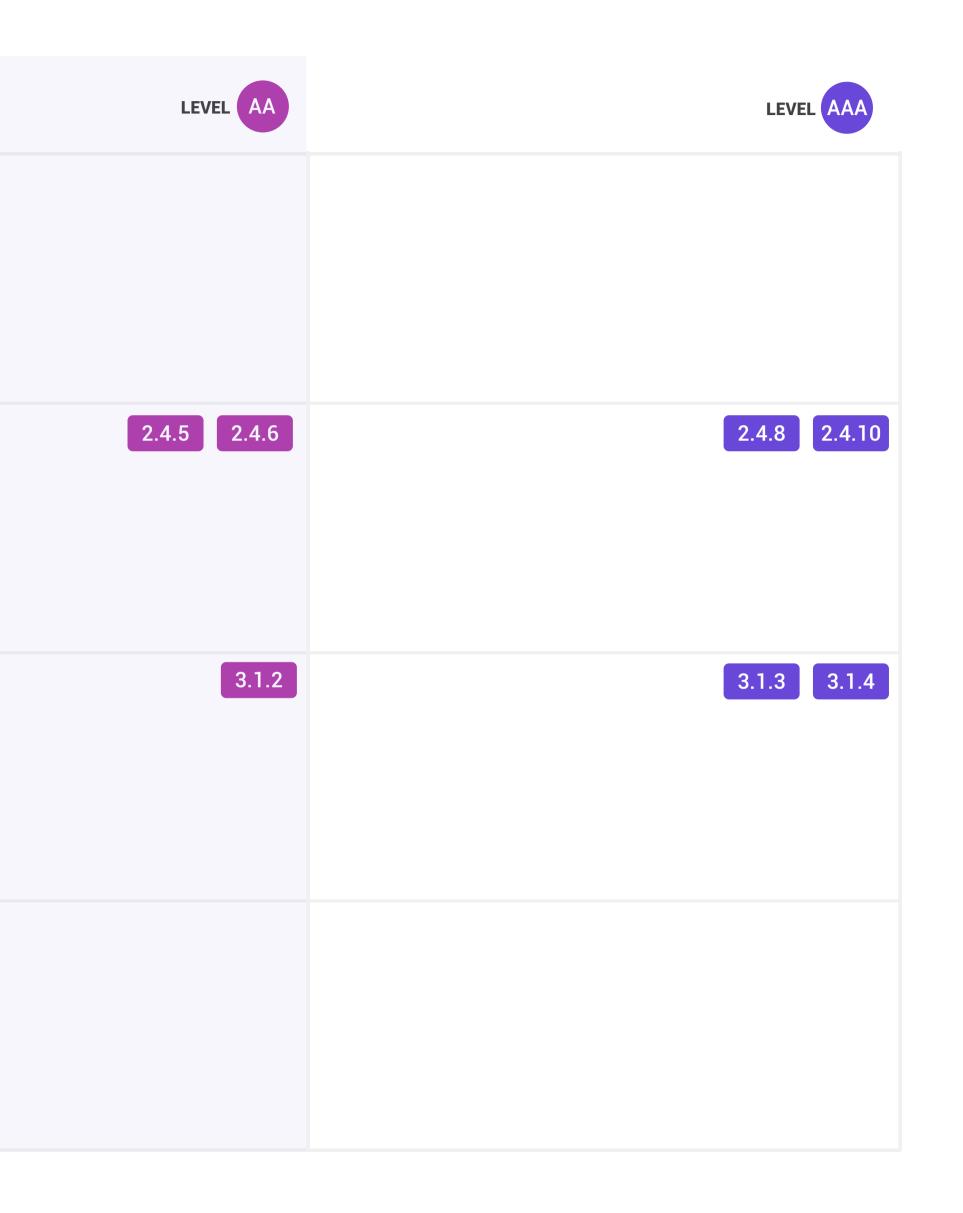
PRINCIPLES	APPLICABLE SUCCESS CRITERIA	LEVEL	
Perceivable		1.1.1 1.3.1 1.3.2	
Operable	2.1.1 2.1.2 2.2.1	2.2.2 2.4.3 2.4.4	
Understandable	3.2.1	3.2.2 3.3.1 3.3.2	3.1.2
Robust		4.1.1 4.1.2	



# ARCHITECTURE

The architecture function covers tasks and related quality control normally associated with the architecture of the information (Web content) and the architecture of the data.

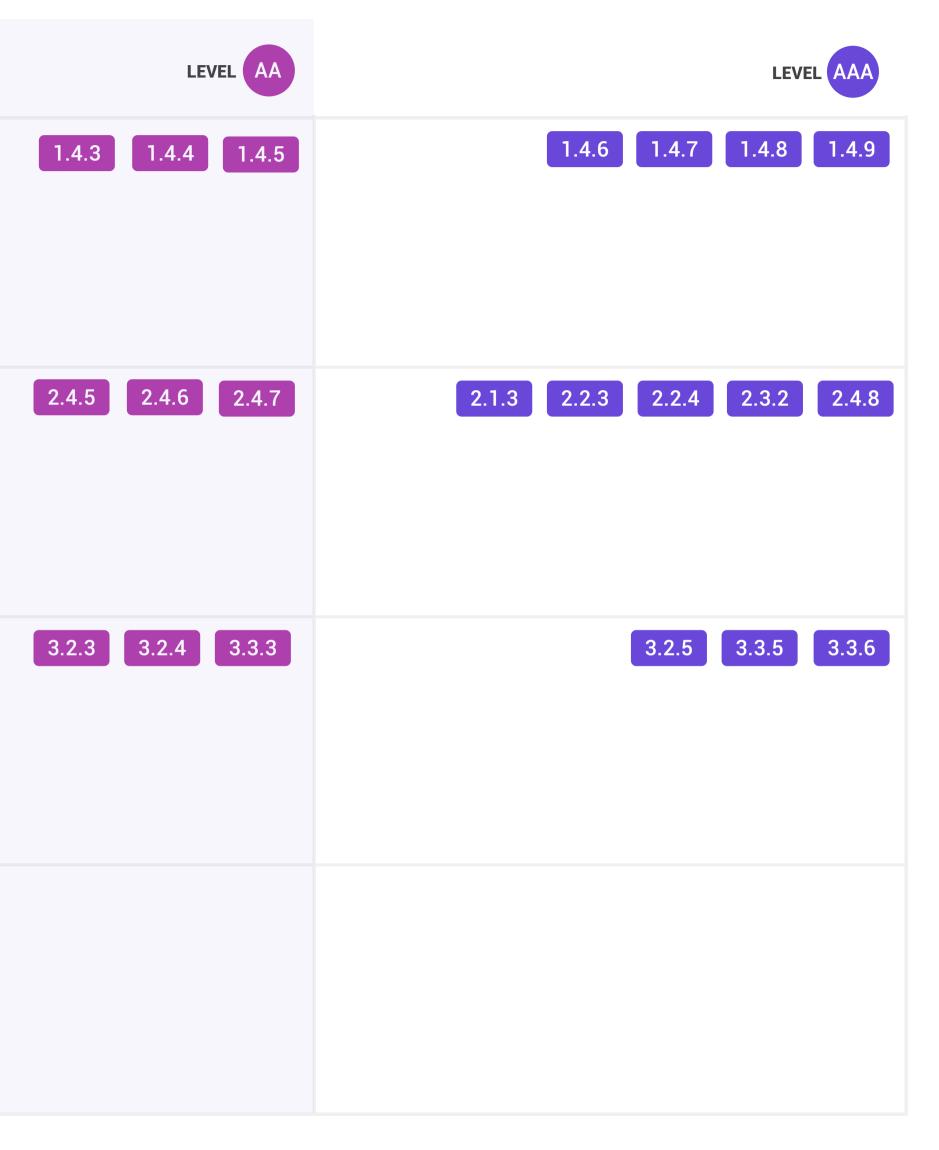
PRINCIPLES	APPLICABLE SUCCESS CRITERIA	LEVEL	
Perceivable		1.3.1	
Operable		2.4.2	
Understandable			
Robust			



# **GRAPHICS / VISUAL DESIGN**

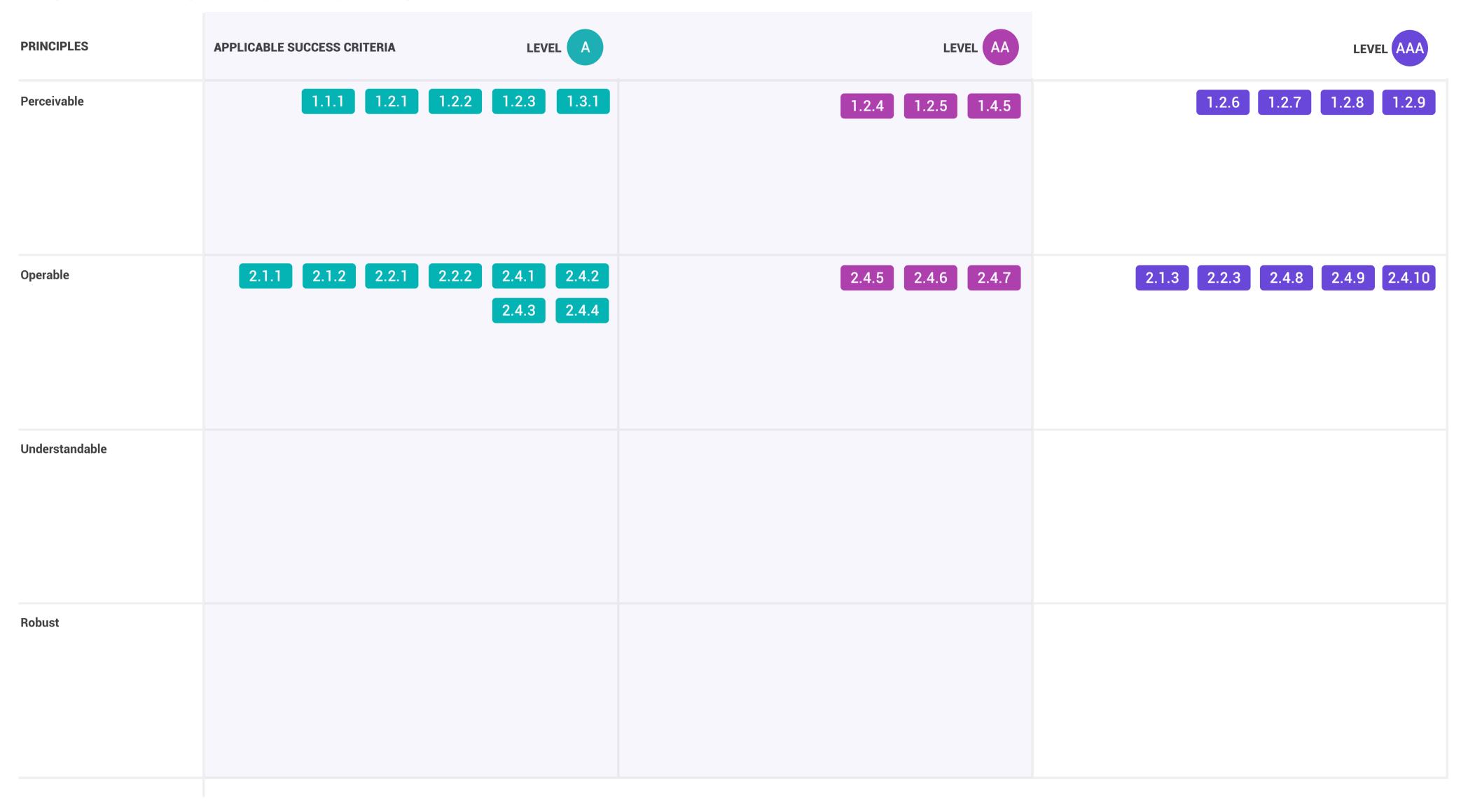
The interaction design / usability function covers tasks and related quality control normally associated with the planning of web interfaces, content changes, interactivity and other interface-related contents of the pages.

PRINCIPLES	APPLICABLE SUCCESS CRITERIA	LEVEL	
Perceivable	1.3.1	1.3.3 1.4.1 1.4.2	
Operable	2.1.1 2.1.2	2.2.2 2.3.1 2.4.1	
Understandable		3.2.1 3.3.1 3.3.2	
Robust			



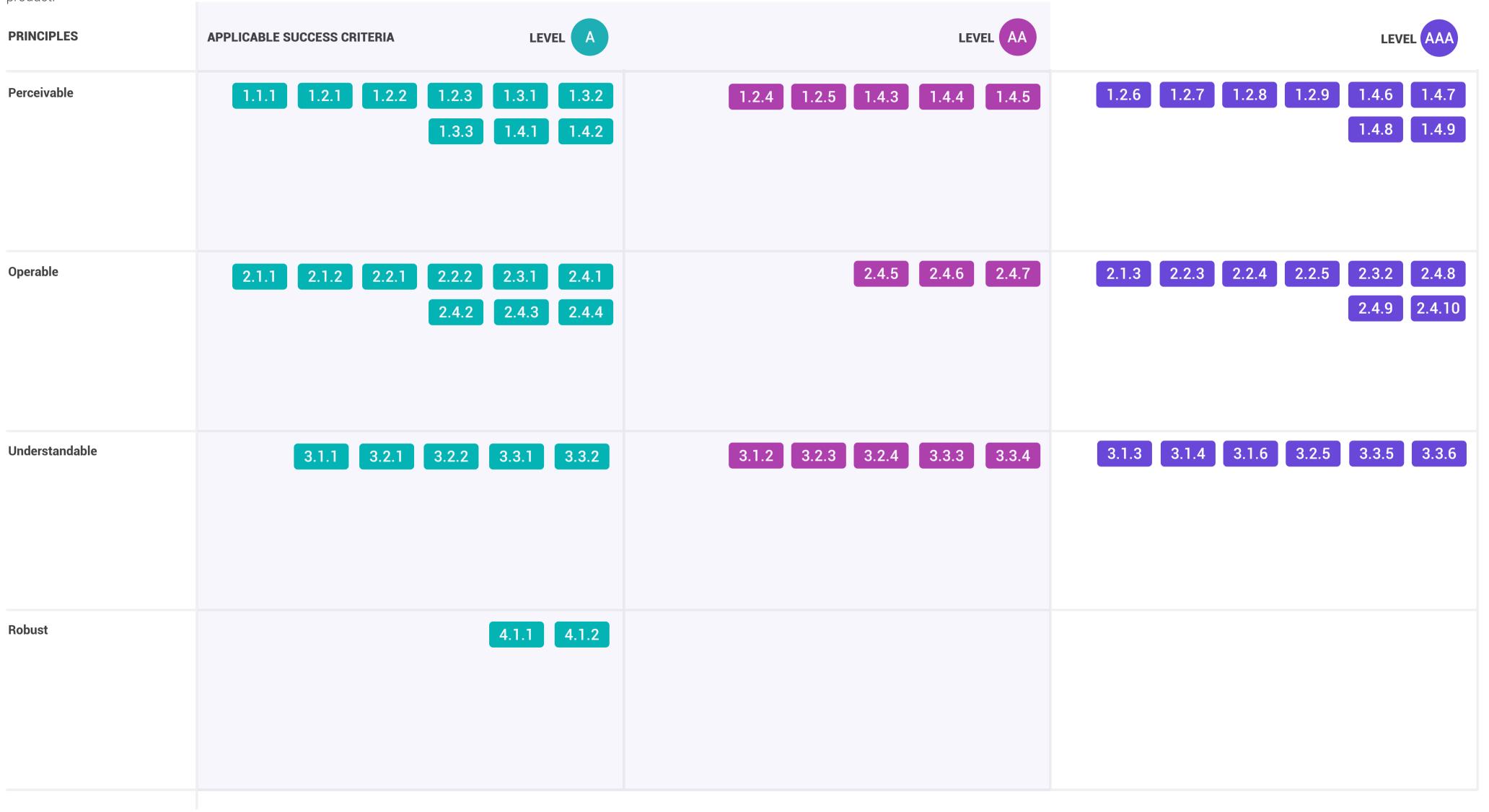
# **SEARCH ENGINE OPTIMISATION**

The search engine optimization function covers tasks and related quality control normally associated with providing text equivalents for non-text contents and making contents on a web page more easily indexable by search engines.



# **FRONT-END DEVELOPMENT**

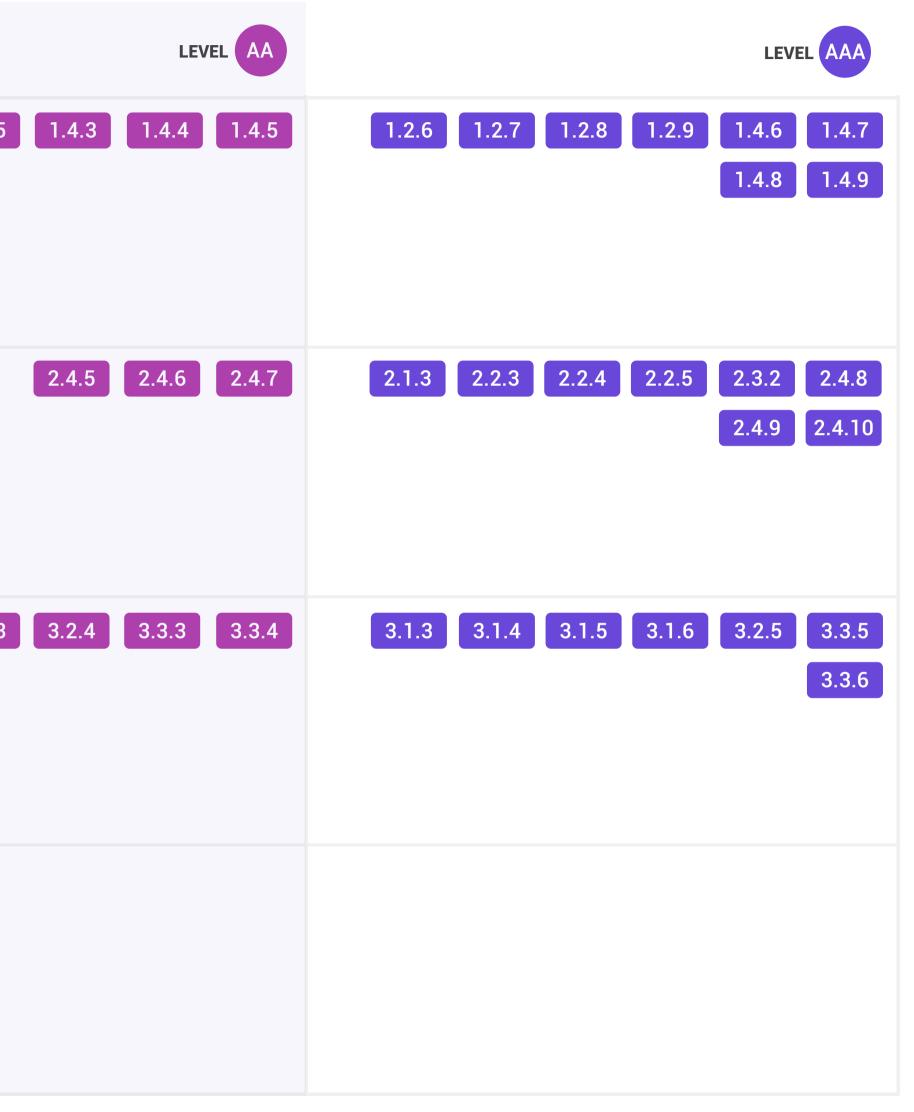
The front-end development function covers tasks and related quality control normally associated with the development of contribution tools, HTML and CSS integration, and the programming of proposed scripts and applications on the product.



# **QUALITY ASSURANCE/CONTROL**

The quality control function covers tasks normally associated with general validations at the very end of the project, before launching.

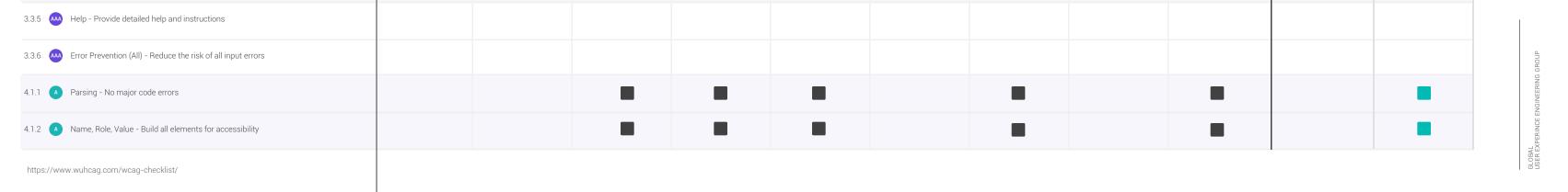
PRINCIPLES	APPLICABLE SUCCESS CRITERIA	LEVEL	
Perceivable	1.1.1 1.2.1 1.2.2	1.2.3       1.3.1       1.3.2         1.3.3       1.4.1       1.4.2	1.2.4 1.2.5
Operable	2.1.1 2.1.2 2.2.1	2.2.2       2.3.1       2.4.1         2.4.2       2.4.3       2.4.4	
Understandable	3.1.1 3.2.1	3.2.2 3.3.1 3.3.2	3.1.2 3.2.3
Robust		4.1.1 4.1.2	



#### **COMMON TOOLS**

This is a collection that suggest a tool to assist with testing a specific success criteria.

unena.	TOOLS / SOFTWARE										
SUCCESS CRITERIA (LEVEL)	JAWS	JAWS Inspect	ARC (Paciello Group)	SORTSITE	ADT Chrome Plugin	A11Y Comp.Plat.	AATT (Aut.Code)	KOA11LY	DYNOMAPPER	USERTESTING.COM (manual persona testing)	<b>QA</b> (manual-only testing)
1.1.1 A Non-text Content - Provide text alternatives for non-text content											
1.2.1 Audio-only and Video-only (Pre-recorded) - Provide an alternative to video-only and audio-only content											
1.2.2 A Captions (Pre-recorded) - Provide captions for videos with audio											
1.2.3     Audio Description or Media Alternative (Pre-recorded) - Video with audio has a second alternative											
1.2.4 🙀 Captions (Live) - Live videos have captions											
1.2.5 Audio Description (Pre-recorded) - Users have access to audio description for video content											
1.2.6 M Sign Language (Pre-recorded) - Provide sign language translations for videos											
1.2.7 Extended Audio description (Pre-recorded) - Provide extended audio description for videos											
1.2.8 Media Alternative (Pre-recorded) - Provide a text alternative to videos											
1.2.9 Audio Only (Live) - Provide alternatives for live audio											
1.3.1 🔥 Info and Relationships - Logical structure											
1.3.2 A Meaningful Sequence - Present content in a meaningful order											
1.3.3 (A) Sensory Characteristics - Use more than one sense for instructions	-	-	_								
	-	-			-			_	_	-	
1.4.1 A Use of Colour - Don't use presentation that relies solely on colour					-		•	•	•	-	-
1.4.2 Audio Control - Don't play audio automatically											
1.4.3 A Contrast (Minimum) - Contrast ratio between text and background is at least 4.5:1											
1.4.4 🗛 Resize Text - Text can be resized to 200% without loss of content or function											•
1.4.5 🙀 Images of Text - Don't use images of text											
1.4.6 K Contrast (Enhanced) - Contrast ratio between text and background is at least 7:1											
1.4.7 🙀 Low or No Background Audio - Audio is clear for listeners to hear											
1.4.8 M Visual Presentation - Offer users a range of presentation options											
1.4.9 Mages of Text (No Exception) - Don't use images of text											
		_	_	_			_	_	_	_	_
2.1.1 A Keyboard - Accessible by keyboard only		-			-	-		-			-
2.1.2 🔥 No Keyboard Trap - Don't trap keyboard users											•
2.1.3 Keyboard (No Exception) - Accessible by keyboard only, without exception											
2.2.1 A Timing Adjustable - Time limits have user controls											•
2.2.2 A Pause, Stop, Hide - Provide user controls for moving content											
2.2.3 🙀 No Timing - No time limits											
2.2.4 And Interruptions - Don't interrupt users											
2.2.5 ᇞ Re-authenticating - Save user data when re-authenticating											
2.3.1 A Three Flashes or Below - No content flashes more than three times per second											
2.3.2 A Three Flashes - No content flashes more than three times per second										-	-
		_	_			_	_				_
2.4.1 A Bypass Blocks - Provide a 'Skip to Content' link											•
2.4.2 A Page Titled - Use helpful and clear page titles											•
2.4.3 A Focus Order - Logical order											•
2.4.4 A Link Purpose (In Context) - Every link's purpose is clear from its context											•
2.4.5 Multiple Ways - Offer several ways to find pages											
2.4.6 A Headings and Labels - Use clear headings and labels											
2.4.7 🗛 Focus Visible - Ensure keyboard focus is visible and clear											
2.4.8 AM Location - Let users know where they are			-	_						_	-
2.4.9 AAA Link Purpose (Link Only) - Every link's purpose is clear from its text											
2.4.10 ARA Section Headings - Break up content with headings											
3.1.1 A Language of Page - Page has a language assigned											•
3.1.2 A Language of Parts - Tell users when the language on a page changes											•
3.1.3 Mag Unusual words - Explain any strange words											
3.1.4 Abbreviations - Explain any abbreviations											
3.1.5 Reading Level - Users with nine years of school can read your content											
3.1.6 M Pronunciation - Explain any words that are hard to pronounce											
3.2.1 (A) On Focus - Elements do not change when they receive focus											
3.2.2 On Input - Elements do not change when they receive input											
3.2.3 Ocnsistent Navigation - Use menus consistently											•
3.2.4 A Consistent Identification - Use icons and buttons consistently											•
3.2.5 A Change on Request - Don't change elements on your website until users ask											
3.3.1 A Error Identification - Clearly identify input errors											
3.3.2 A Labels or Instructions - Label elements and give instructions											
3.3.3 A Error Suggestion - Suggest fixes when users make errors											
3.3.4 A Error Prevention (Legal, Financial, Data) - Reduce the risk of input errors for sensitive data											
3.3.5 A Help - Provide detailed help and instructions											_



## **TESTING STRATEGY**

#### FOUR-POINT TESTING METHODOLOGY

Our four-point testing starts with:

**P1** // Each production phase is responsible and accountable to the implementation of the associated success criteria as per the compliance strategy.

**P2 //** Individuals (persona based) with at least one impairment using assistive technology who examine pages and functions of each website and/or mobile application for the guidelines as defined by WCAG 2.0 A/AA.

**P3** // A Subject Matter Expert then reviews each outcome during the second pass testing, answering deferred questions, ensuring accuracy and adding their input as needed.

**P4** // These manual results are then married with the results from QA testing and automated testing output, creating two comprehensive reports which are again reviewed for accuracy by a senior programmer, ultimately giving our clients indepth, real-world results

#### WCAG 2.0 IMPLEMENTATION

WCAG 2.0 is a series of measurable Web guidelines published by the W3C's Web Accessibility Initiative (WAI) which explains to developers and authors how to make Web content accessible to people with disabilities. The guidelines consist of four principles:

**Perceivable:** Available through sight, hearing, or touch

**Operable:** User interface and navigation must be operable and compatible with keyboard or mouse

**Understandable:** User-friendly, easy to comprehend

**Robust:** As technologies and user agents evolve, the content needs to remain accessible.

Each principle consists of guideline and checkpoints with multiple items to test. All WCAG 2.0 A/AA Success Criteria are written as testable benchmarks;for objectively determining if content satisfies them. The testing of each page, element and scenario requires a mix of automated and manual (human) testing. The manual testing is done by human testers (some of which may have multiple disabilities) who use assistive technology, such as a screen reader, to perform real-life functions emulating visual, audible and mobility disabilities. They will also perform site-specific functions and processes, such as creating a membership, registering for a class,, filling out a form or gathering specific information.