Infotainment Accessibility Analysis Report

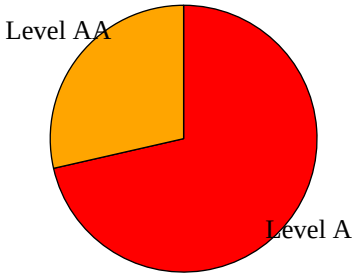
Session ID: 5670d248-6cda-4624-ab3c-ac94e06ac95d
Analysis Date: June 07, 2025
Files Analyzed: 1
Generated: 2025-06-07 10:46:27

Metric	Value
Total Files	1
LLM Models Used	1
Total Issues Found	1
Analysis Duration	Varies by model

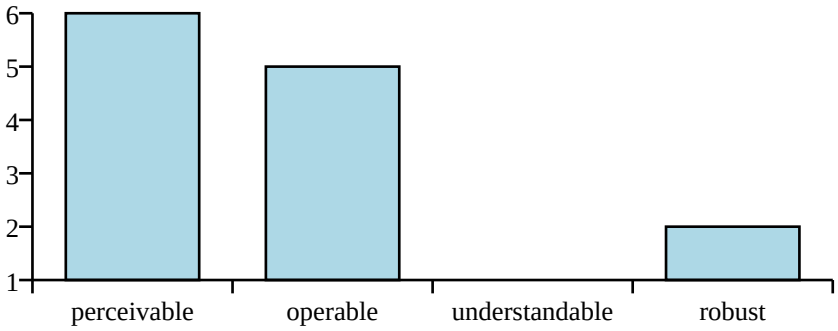
Executive Summary

This report presents the results of an automated accessibility analysis performed on 1 infotainment system files using multiple Large Language Models (LLMs). **Key Findings:**
• Total accessibility issues identified: 14
• Critical issues (Level A & AA): 14
• Most common category: perceivable
• LLM models compared: deepseek-v3
Compliance Status:
The analysis reveals varying degrees of WCAG 2.2 compliance across the analyzed files. Immediate attention is recommended for Level A and AA violations, which represent fundamental accessibility barriers for users with disabilities.

Issues by Severity Level



Issues by WCAG Category



LLM Model Analysis Comparison

Model	Files Analyzed	Total Issues	Avg Issues/File	Performance
deepseek-v3	1	14	14.0	Needs Review

deepseek-v3 Analysis

Files Processed: 1
Analysis Method: WCAG 2.2 compliance detection
Key Strengths: Code-focused analysis, technical precision
Areas for Improvement: May be overly sensitive, potential false positives

Detailed Accessibility Findings

1.1.1 Non-text Content

Occurrences: 1
Severity Distribution: A: 1
Files Affected: 1
Description: Emoji icons used without accessible alternatives
Impact: Screen reader users won't understand the meaning of emoji icons
Recommendation: Add aria-label or visually hidden text for emoji icons
Example Code:

```
user-select: none;...
```

1.3.1 Info and Relationships

Occurrences: 2
Severity Distribution: A: 2
Files Affected: 1
Description: Menu items lack proper semantic structure and ARIA attributes
Impact: Screen reader users won't understand the navigation structure
Recommendation: Use proper semantic elements (nav, ul, li) and add ARIA roles
Example Code:

```
...
```

1.3.3 Sensory Characteristics

Occurrences: 1
Severity Distribution: A: 1
Files Affected: 1
Description: Navigation relies solely on visual indicators (color change)
Impact: Users with visual impairments may not perceive the active state
Recommendation: Add additional non-color indicators (border, text style, etc.)
Example Code:

```
.menu-item:hover, .menu-item.active { background-color: #222; }...
```

1.4.11 Non-text Contrast

Occurrences: 1
Severity Distribution: AA: 1
Files Affected: 1
Description: Insufficient contrast for interactive elements' active states
Impact: Users with low vision may not perceive interactive element states
Recommendation: Ensure active states have at least 3:1 contrast ratio
Example Code:

```
.menu-item:hover, .menu-item.active { background-color: #222; }...
```

1.4.3 Contrast (Minimum)

Occurrences: 1
Severity Distribution: AA: 1
Files Affected: 1
Description: Insufficient color contrast between text and background
Impact: Users with low vision may struggle to read the content
Recommendation: Ensure text has a contrast ratio of at least 4.5:1 against its background
Example Code:

```
background-color: #000; color: #fff;...
```

2.1.1 Keyboard

Occurrences: 1
Severity Distribution: A: 1
Files Affected: 1
Description: user-select: none prevents text selection which may interfere with keyboard navigation
Impact: Keyboard users may have difficulty interacting with content
Recommendation: Remove or limit use of user-select: none
Example Code:

```
user-select: none;...
```

2.1.2 No Keyboard Trap

Occurrences: 1
Severity Distribution: A: 1
Files Affected: 1
Description: Potential keyboard trap in search input without clear exit method
Impact: Keyboard users may get stuck in the search input
Recommendation: Ensure users can exit the input with standard keyboard commands
Example Code:

```
...
```

2.4.6 Headings and Labels

Occurrences: 1
Severity Distribution: AA: 1
Files Affected: 1
Description: No heading elements found - poor document structure
Impact: Impact not specified
Recommendation: Add appropriate heading elements (h1-h6) to structure content
Example Code:

```
...
```

2.4.7 Focus Visible

Occurrences: 1
Severity Distribution: AA: 1
Files Affected: 1
Description: No visible focus indicator for interactive elements
Impact: Keyboard users won't know which element has focus
Recommendation: Add clear focus styles for all interactive elements
Example Code:

```
...
```

2.5.1 Pointer Gestures

Occurrences: 1
Severity Distribution: A: 1
Files Affected: 1
Description: Touch targets may be too small (80px height)
Impact: Users with motor impairments may have difficulty activating controls
Recommendation: Ensure touch targets are at least 48x48 CSS pixels
Example Code:

```
...
```

3.3.2 Labels or Instructions

Occurrences: 1
Severity Distribution: A: 1
Files Affected: 1
Description: Form input missing associated label
Impact: Impact not specified
Recommendation: Add label element or aria-label attribute
Example Code:

```
. . .
```

4.1.1 Parsing

Occurrences: 1
Severity Distribution: A: 1
Files Affected: 1
Description: Interactive elements implemented as divs instead of buttons
Impact: Screen readers may not announce these as interactive elements
Recommendation: Use button elements for interactive controls
Example Code:

```
. . .
```

4.1.2 Name, Role, Value

Occurrences: 1
Severity Distribution: A: 1
Files Affected: 1
Description: Interactive elements lack proper ARIA attributes
Impact: Screen reader users won't understand the purpose or state of interactive elements
Recommendation: Add role="button" and aria-pressed="true/false" where appropriate
Example Code:

```
. . .
```

Remediation Results

No remediation has been performed yet.

Recommendations

Priority Actions

1. Immediately address 10 Level A violations - these are critical accessibility barriers
2. Plan remediation for 4 Level AA violations to meet standard compliance
3. Focus on improving visual and sensory accessibility (alt text, contrast, etc.)

General Recommendations

1. Implement automated accessibility testing in your CI/CD pipeline
2. Train development team on WCAG 2.2 guidelines and best practices
3. Establish accessibility code review processes
4. Consider using accessibility testing tools like axe-core or WAVE
5. Implement user testing with assistive technologies
6. Create accessibility guidelines specific to infotainment systems
7. Regular audit schedule for accessibility compliance

Suggested Implementation Timeline:
• **Week 1-2:** Fix all Level A violations
• **Week 3-4:** Address Level AA violations
• **Month 2:** Implement automated testing
• **Month 3:** Team training and process improvement
• **Ongoing:** Regular audits and continuous improvement

Appendices

Appendix A: Analyzed Files

Filename	Size (bytes)	Type
sample1c.html	31268	text/html

Appendix B: WCAG 2.2 Guidelines Reference

This analysis is based on Web Content Accessibility Guidelines (WCAG) 2.2, which provides recommendations for making web content more accessible. The guidelines are organized under 4 principles: • **Perceivable:** Information must be presentable in ways users can perceive • **Operable:** Interface components must be operable • **Understandable:** Information and UI operation must be understandable • **Robust:** Content must be robust enough for interpretation by assistive technologies Each guideline has three levels of conformance: A (minimum), AA (standard), AAA (enhanced).

Appendix C: Analysis Methodology

Analysis Approach:
1. File preprocessing and format detection
2. Static code analysis for common accessibility patterns
3. LLM-based semantic analysis using specialized prompts
4. Cross-model result comparison and validation
5. Issue prioritization and remediation suggestions

LLM Models Used:
• GPT-4o: Advanced reasoning and code understanding
• Claude Opus 4: Strong analytical capabilities
• DeepSeek-V3: Code-focused analysis
• LLaMA Maverick: Alternative perspective validation

Limitations:
• Automated analysis may miss context-dependent issues
• Some accessibility aspects require manual testing
• LLM outputs should be validated by accessibility experts