PDF to Fully Accessible PDF Conversion

(WCAG 2.1 AA + PDF/UA)

PRESENTED BY:
www.cameoepublishing.com

Client

A global digital content provider requiring accessibility remediation for PDF-based learning and reference materials.

Project Scope

- **2,000+ pages** of PDF content converted into **fully accessible PDFs**
- Input: Editable PDFs + Alt-text reference sheet
- Output: WCAG 2.1 AA and PDF/UA compliant PDFs
- Content Included:
  Text, tables, lists, forms, figures, charts, footnotes, and references

Client Challenge

The client needed to ensure that visually impaired and assistive technology users could access and navigate the documents with ease, without altering the original visual design. Key challenges included:

- PDFs lacked **proper semantic tagging**
- **Reading order** was inconsistent due to multi-column layouts
- **Figures and charts** required meaningful alt-text
- **Forms** were not keyboard navigable
- **Color contrast** inconsistencies needed review and correction

Manual remediation would have been time-intensive and error-prone without a standardized methodology.

Accessibility Workflow & Solution

1. Metadata & Document Properties

- Inserted document metadata (Title, Language, Subject, Keywords)
- Ensured assistive technologies could correctly identify and classify content

2. Structural Tagging

- Applied complete semantic structure, including:
  - H1–H6 headings
  - Paragraphs and section divisions
  - Numbered and bulleted lists
  - Footnotes and cross-references
- Confirmed that structure aligned with logical reading flow

3. Image & Figure Accessibility

- Inserted descriptive **alt text** for figures and content-carrying images
- Marked decorative images as **artifacts** to avoid unnecessary screen reader verbosity

4. Table Accessibility

- Defined header rows and scope attributes
- Ensured tables could be read correctly by screen readers in navigation mode

5. Reading Order Correction

- Resolved complex document flow issues caused by:
  - Multiple columns
  - Floating images
  - Sidebars and call-outs
- Established a clean logical progression for assistive technology reading

6. Form Field Accessibility

- Converted existing forms into **fillable**, **keyboard-navigable**, and properly labeled interactive elements
- Added tooltips and meaningful labels to ensure user clarity

7. Color and Contrast Compliance

- Evaluated text and background color combinations
- Adjusted where necessary to meet **WCAG 2.1 AA** minimum contrast thresholds

Testing & Quality Validation

Used both automated and manual validation:

Tool / Method	Purpose
PAC 3 (PDF Accessibility Checker)	Verified PDF/UA structural compliance
NVDA Screen Reader	Ensured navigability and reading coherence
VoiceOver (macOS)	Validated accessibility across platforms
Manual Semantic Review	Confirmed correct heading hierarchy, table markup, and reading order

Results

Outcome	Impact
2,000+ pages successfully converted to fully accessible PDFs	Broadened accessibility and compliance coverage
Accurate semantic structure and tagging applied	Improved readability and navigation for assistive tech users
Forms made fully interactive and accessible	Enabled independent completion without additional support

Visual layout preserved while accessibility increased	No sacrifice of brand or formatting standards
Consistent compliance across entire batch of documents	Reduced need for future remediation efforts

Conclusion

This project demonstrates a **repeatable, scalable approach** to PDF accessibility.By applying structured semantic tagging, meaningful alt text, corrected reading order, and accessible form fields — all while preserving design integrity — complex PDF materials were made usable, navigable, and compliant for all readers.