

- [TOSCA Architecture PDF Documentation - Final Generation Complete](#)
 - [Architecture Diagrams](#)
 - [Changes Completed](#)
 - [1. Image Display - Full Page Width](#)
 - [2. Text Margins - Comfortable Reading](#)
 - [3. Directory Structure Fixed](#)
 - [4. Link Formatting - Professional Appearance](#)
 - [5. Font Sizes - Large and Readable](#)
 - [Generated PDFs \(32 Total\)](#)
 - [Core Architecture \(5 documents\)](#)
 - [Implementation Details \(9 documents\)](#)
 - [Architecture Decision Records \(7 documents\)](#)
 - [Additional Documentation \(11 documents\)](#)
 - [Technical Details](#)
 - [CSS Styling](#)
 - [Image Handling](#)
 - [Directory Structure](#)
 - [File Locations](#)
 - [Regenerating PDFs](#)
 - [Quality Attributes](#)
 - [Version History](#)

TOSCA Architecture PDF Documentation - Final Generation Complete

Architecture Diagrams

Date: 2025-11-05 **Total PDFs Generated:** 32 documents **Status:** Complete - All formatting issues resolved

Changes Completed

1. Image Display - Full Page Width

- Images now break out of text margins
- Uses negative margins (-0.75in left/right) to span full 8.5" page width
- Images centered and automatically scaled
- No cutoff or overflow issues

2. Text Margins - Comfortable Reading

- 0.75 inch margins on all sides for text
- Professional, readable layout
- Images extend beyond text margins for maximum size

3. Directory Structure Fixed

- Removed all Unicode box-drawing characters (├ | ┤)
- Replaced with clean 2-space indentation
- Fixed in 19 markdown files
- Renders cleanly in PDF format

4. Link Formatting - Professional Appearance

- All hyperlinks now black (#000) instead of blue
- No underlines on links
- Looks like normal text in print
- Professional, FDA-submission ready

5. Font Sizes - Large and Readable

- Body text: **16pt** (was 14pt)
 - Headers: 24pt (H1), 20pt (H2), 17pt (H3)
 - Code blocks: **14pt** (was 12pt)
 - Tables: **15pt** (was 13pt)
 - Lists: **16pt** (was 14pt)
 - All text significantly larger and more readable
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Generated PDFs (32 Total)

Core Architecture (5 documents)

- 01_system_overview.pdf
- 02_database_schema.pdf
- 03_safety_system.pdf
- 04_treatment_protocols.pdf
- 05_image_processing.pdf

Implementation Details (9 documents)

- 06_protocol_builder.pdf
- 07_safety_watchdog.pdf
- 08_security_architecture.pdf
- 09_test_architecture.pdf
- 10_concurrency_model.pdf
- 11_asyncio_pyqt6_integration.pdf
- 11_event_logging.pdf
- 12_recording_manager.pdf
- 13_calibration_procedures.pdf

Architecture Decision Records (7 documents)

- ADR-001-protocol-consolidation.pdf
- ADR-002-dependency-injection-pattern.pdf
- ADR-003-pyqt6-gui-framework.pdf
- ADR-004-sqlite-database.pdf
- ADR-005-arduino-gpio-migration.pdf
- ADR-006-selective-shutdown-policy.pdf
- ADR-TEMPLATE.pdf

Additional Documentation (11 documents)

- 00_IMPLEMENTATION_STATUS.pdf
- ARCHITECTURE_DOCUMENTATION_INDEX.pdf
- DIAGRAM_INTEGRATION_EXAMPLE.pdf
- hardware_controller_base_usage.pdf
- PDF_GENERATION_FINAL_SUMMARY.pdf

- PDF_GENERATION_GUIDE.pdf
 - PDF_GENERATION_SUMMARY.pdf
 - PDF_QUICK_START.pdf
 - QUALITY_ATTRIBUTES.pdf
 - SAFETY_SHUTDOWN_POLICY.pdf
 - SECURITY_THREAT_MODEL.pdf
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Technical Details

CSS Styling

- **Page margins:** 0.75 inches (text area)
- **Image width:** Full page (8.5 inches) via negative margins
- **Image positioning:** Centered with auto margins
- **Font family:** Arial (professional, readable)
- **Color scheme:** Black text, no blue links

Image Handling

- Images break out of text margins using calc() and negative margins
- Maintains aspect ratio automatically
- Scales to fit page width
- No manual resizing required (wkhtmltopdf handles scaling)

Directory Structure

- All Unicode box-drawing replaced with simple indentation
 - Clean, readable directory trees in all PDFs
 - No rendering issues
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File Locations

PDFs: /mnt/c/Users/wille/Desktop/TOSCA-dev/docs/architecture/pdfs/ **Configuration:** pdf-generation-config.json **Styling:** pdf-styles.css **Generator:** generate_pdfs.py **Originals:** originals/ (backup of original markdown files)

Regenerating PDFs

To regenerate after editing markdown files:

```
cd /mnt/c/Users/wille/Desktop/TOSCA-dev/docs/architecture

# Single file
python3 generate_pdfs.py --file 01_system_overview.md

# All files
python3 generate_pdfs.py --all
```

Quality Attributes

- ✓ **Professional appearance** - Clean, black-and-white for printing
 - ✓ **Large, readable text** - 16pt body, 24pt headers
 - ✓ **Full-width images** - No cutoff, proper scaling
 - ✓ **Clean directory trees** - No Unicode rendering issues
 - ✓ **Print-ready** - Black links, good margins
 - ✓ **FDA-ready** - Professional documentation for submissions
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Version History

v2.0 (2025-11-05): Full-width images, larger fonts, fixed directory structures **v1.0 (2025-11-05):** Initial PDF generation with embedded diagrams

Generated by: TOSCA PDF Documentation System **Date:** 2025-11-05 **Status:** Complete - All formatting issues resolved