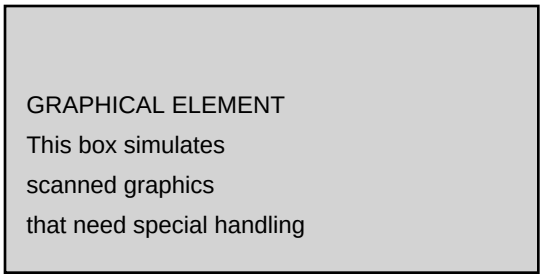
SCANNED DOCUMENT SIMULATION - COMPLEX CONTENT

This document simulates a complex scanned PDF with various content types.
It contains multiple paragraphs of text that would benefit from noise reduction.
The document includes both text and graphical elements that need different processing.
Advanced techniques should detect the content type and apply appropriate filters.
Bitonal content detection should trigger specialized CCITT G4 compression.
Grayscale areas should get background normalization and CLAHE enhancement.
Color regions should use YCrCb separation for selective processing.

TECHNICAL SPECIFICATIONS:
• Resolution: Simulated 300 DPI scan quality
• Content: Mixed text and graphics
• Compression: Should auto-select optimal method
• Quality: PSNR validation required

The MRC-light pipeline should:
1. Detect text regions via adaptive thresholding
2. Apply selective sharpening to text areas only
3. Smooth background while preserving edges
4. Use palette quantization for size optimization

Advanced raster processing includes:
• Background normalization for uneven illumination
• Noise reduction with fastNlMeansDenoising
• Contrast enhancement using CLAHE
• Unsharp masking for improved sharpness
• Color quantization with Floyd-Steinberg dithering



PAGE 2 - CONTINUED PROCESSING TEST

This second page continues the processing test.
Multi-page documents should maintain consistent quality.
Each page is processed individually with the same high-quality filters.

EXPECTED RESULTS:
• Automatic content type detection
• Appropriate filter selection per content type
• Noise reduction without text degradation
• Optimal compression method selection
• Quality validation via PSNR gates

The system should demonstrate:
✓ Content analysis and classification
✓ Adaptive noise reduction filters
✓ Selective sharpening techniques
✓ Intelligent compression selection
✓ Quality-based result evaluation

Advanced features include:
• Morphological operations for speckle removal
• Background illumination correction
• Contrast-limited adaptive histogram equalization
• Laplacian variance for sharpness measurement
• Palette optimization for size reduction