

# Licensable Components and Their Features

Components are the smallest licensable part of GdPicture.NET, with each component consisting of a set of unique features. When you license a component, you license the component's entire feature set, regardless of if you use a single feature or all of them.



## Automatic Document Recognition (ADR) and Optical Mark Recognition (OMR)

Identify and classify invoices, checks, forms, orders, delivery notes, page separators, or any kind of structured document (ADR)

Create automatic or manual document classification workflows (ADR)

Develop image comparison applications (ADR)

Leverage scanning workflows by adding the instant page separator feature (ADR)

Leverage a structured document processing system by realigning regions of interest (Anchoring Mechanism – OMR)

Detect and decode checkmarks of sheets and surveys (OMR)

Template-recognition engine based on sophisticated pattern matching (Anchoring Mechanism – OMR)

Enhance OCR zoning accuracy (OMR)



## Annotations

Read and write XMP annotations from PDFs or images

Support for all major annotation types (custom, rubber stamp, highlight, freehand, text, arrow, rectangle, ellipse, line, connected line, link, ruler, and polygon ruler annotations)

Rotate, resize, and move annotations

Blending and printing support

Unicode support

Multipage document support

Annotation collections can be loaded or saved in XML format

Annotation collections can be stored as document metadata

Annotations can be flattened on any document

Let the user move, resize, rotate, and scale annotations

Manage annotations programmatically or by user interaction



## Barcode Reading and Writing

Read 1D, 2D, QR, MicroQR, Data Matrix, PDF417, Aztec Code, and MaxiCode barcodes from a bitmap

Write 1D, 2D, QR, MicroQR, Data Matrix, PDF417, Aztec Code, and MaxiCode barcodes from a bitmap

- Recognize barcode orientation from 0° to 360°
- Detect multiple barcodes from black and white, grayscale, palletized, and color images
- Return the string value, type, and bounding box of recognized barcodes, or if the barcode has a checksum
- Detect barcodes on a full page or in a region of interest
- Save images into folders based on their barcode
- Get the number of rows and columns of each 2D barcode recognized
- Read 2D barcodes from a full page or region of interest
- Recognize partially destroyed symbols using Error Correcting Codes (ECC algorithm)
- Full Unicode support for reading and writing barcodes



## Digital Signatures

- Add, remove, and validate digital signatures
- PDF/A-conformant digital signatures
- Support for European signature standards
- Add an optional visual appearance of a signature (page, size, color, position, text, image, etc.)
- Support for multiple digital signatures
- RFC3161-compliant timestamp support



## Document Capture (TWAIN / WIA)

- Complete TWAIN and WIA scanning support
- Image source enumeration and selection
- Duplex scanning support
- All transfer modes are fully implemented and automatically negotiated by the engine
- API to enforce a specific transfer mode, such as memory, file, or native mode
- Handles 32-bit and 64-bit data sources
- Automatic Document Feeder (ADF) and flatbed control
- Detect and reject blank pages during scanning
- Number of image transfers negotiation (acquire a predefined amount of pages from a document feeder system)
- Save and restore scanner configuration from file
- Image scanning attributes control, such as color depth, resolution, brightness, contrast, size, and more
- Detect and read barcode symbols
- Acquire images in multiple formats, including PDF/A, PDF OCR, encrypted PDF, multipage TIFF, JPEG, JPEG 2000, JBIG2, GIF, PNG, and EXR (TWAIN and WIA)
- Save acquired images to an FTP or HTTP server
- Can use standard Windows acquisition wizard or fully customized dialogs
- Single-page and multipage acquisition support
- Low-level APIs to handle more than 150+ TWAIN capabilities



## Document Editor

- Reorganize or impose pages in a PDF document
- Swap, move, delete, and resize specific pages in a PDF document
- Merge several PDF documents with advanced resource handling
- Merge several PDF documents specifying how to handle attachments
- Split a PDF document with input conformance preservation
- Merge specific pages of a PDF document into a single one
- Rotate specific pages in a PDF document using any floating angle
- Rotate specific pages in a PDF document using standard angles (90, 180, 270)
- Rotate all pages in a PDF document using standard angles (90, 180, 270)
- Draw a page over another page in a PDF document



## Document Viewing and Printing (UI)

- Display and print more than 100 formats using WinForms and WPF user controls
- Support for very large and very complex documents
- Built-in adaptive caching mechanism with user action prediction to dramatically speed up rendering
- Display documents from file, stream, memory RAW, OLE Picture, GDI+ bitmap, byte array, string, and others
- Display documents from an HTTP server or an FTP server
- Display multipage document files with high-quality rendering
- Password support for encrypted documents
- Generate high-quality thumbnails from PDF pages or images in more than 100 formats
- Generate thumbnails from a directory, including subfolders
- Generate thumbnails from the GdPicture image or GdPicturePDF object with multipage support
- Asynchronous thumbnail generation
- Thumbnail drag-and-drop support
- Thumbnail reordering by mouse actions
- Customize thumbnail width and height
- Convert viewer coordinates to document coordinates and vice versa
- Display any type of image on any display device or .NET Graphics object
- Draw highlighted regions within GdViewer using the mouse, which is useful when creating anchors for document recognition, as well as in OMR applications
- Zoom or stretch documents using very optimized interpolation algorithms for high-quality display
- Use a custom gamma setting to increase the visibility of an image
- Customize the viewer: Change the background, select a border style, enable or disable the scrollbars, and select the mouse action
- Apply any kind of rotation or flip to the displayed image
- Use the panning tool, area selection tool, and auto-zoom tool to perform any kind of action
- Scroll through multipage TIFF or PDF files (go to the next page, previous page, last page, first page, or a custom page number)
- Send an image or selected pages to a printer

- Enable or disable the built-in context menu that gives the end user a wide range of tools
- Display animated GIF images with low CPU usage
- Use the viewer to store any kind of object, including shapes, buttons, and grids
- Catch any kind of event, including mouse and keyboard events, paint and display events, and zoom events
- Printing devices enumeration
- Select a destination printer, print quality mode, position, orientation, and color mode (black and white or color)
- Print a single page or a range of pages
- Raise printer configuration dialog box
- Stretch or zoom an image to a specific size
- Automatic page orientation support
- Print silently or using dialog boxes
- Print on a local or network printer or using a specific paper bin
- Set a custom printing job name
- Print a specific number of copies
- Catch printing errors or events (before and after printing – get remaining pages)



## HTML Conversion

- View HTML pages in WinForm and WPF viewers
- Convert HTML pages to PDF
- Manage a pool of instances that will speed up processing
- HTML, HTML, MHT, MHTML, CSS, JavaScript, image, SVG, hyperlink, and forms support



## Image Conversion

- Convert images to PDF
- Convert any document to image or SVG



## Image Documents

- Browse the list of supported file formats (raster images)**
- Functionalities to handle alpha channel and transparency
- Functions to adjust brightness, contrast, saturation, and gamma
- Functions to read/write data from/to the clipboard (Windows only)
- Color mapping and color profile management
- Color palette manipulation
- Color quantization and pixel formats conversion
- Load/create images
- Bitmap drawing and shape or text drawing
- Effects and filters for color, grayscale, and bitonal bitmaps
- Image exporting and saving
- Get and set image properties

- Metadata support for EXIF, IPTC, GEO, comments
- DICOM, multipage TIFF, multipage JBIG2, and multiframe GIF manipulation
- Access any single pixel of an image separately
- Resize and rotate images
- Image document processing and analysis
- Thumbnail creation and embedded thumbnail management



### KVP and Table Processing – Smart Redaction

- KVP engine returns the type of data (nature of the content) and accuracy data (confidence level)
- Fully automated redaction processes with Smart Redaction support for PDF
- Table extraction support for PDF



### Linearization

- Save a document to a linearized PDF
- Save any document to a linearized PDF



### MICR

- Support for CMC7 and E13B fonts
- Returns recognized characters with confidence level and an alternate set of recognized characters at next-lower level of confidence
- Works on any bit-depth bitmap (color, grayscale, and monochrome)



### MRC – Hyper Compression

- PDF generation or optimization with mixed raster content compression
- PDF generation or optimization with color detection



### MRZ/MRTD Reader

- OCR-B font support
- Support for all standardized MRZ formats (TD, TD2, TD3, MRV-A, MRV-B)



### OCR

- Perform OCR (optical character recognition) with full Unicode support on PDFs and more than 100 file formats (also requires the PDF processing component)
- Supports more than 100 languages, including English, French, Italian, German, Spanish, Portuguese, Vietnamese, Chinese, Russian, Polish, and Dutch
- Character recognition confidence scores
- Retrieves the font information (style, family, and more)
- Retrieves the character's location
- Retrieves paragraph properties (justification, alignment, bounding box, and more)

- Support for PDF/A OCR generation (PDF image and hidden searchable text)
- Can produce PDF and PDF/A with Unicode characters with a very small size
- Can recognize only digits, only alpha, or only allowed characters – plus an option to specify a denylist of characters
- OCR context support: defines if the engine is processing a document, single word, single character, text block, vertical text, etc.
- High-performance zonal engine that uses a caching mechanism and parallelization
- Automatic document orientation detection
- Can detect paragraphs in the same document with different orientations
- Automatic skew correction
- Intelligent automatic image correction to increase OCR accuracy and speed
- Segmentation features to detect blocks, paragraphs, lines, words, and characters
- Built-in multithreaded engine for PDF/OCR creation



## Office Conversion

- Convert MS Word OpenXML (DOCX) to PDF or TIFF
- Convert MS Word (DOC) to PDF, TIFF, or DOCX
- Convert MS Word template (DOTX) to PDF or TIFF
- Convert MS Word macro-enabled document (DOCM) to PDF or TIFF
- Convert MS Excel OpenXML (XLSX) to PDF or TIFF
- Convert MS Excel (XLS) to PDF or TIFF
- Convert MS Word macro-enabled spreadsheet (XLSM) to PDF or TIFF
- Convert MS PowerPoint OpenXML (PPTX) to PDF or TIFF
- Convert MS PowerPoint (PPT) to PDF or TIFF
- Convert MS PowerPoint macro-enabled spreadsheet (PPTM) to PDF or TIFF
- Convert OpenDocument Text (ODT) to PDF or TIFF
- Convert Rich Text Format (RTF) to PDF or TIFF



## PDF Conversion

- Convert Microsoft Outlook item (MSG) to PDF
- Convert electronic mail format (EML) to PDF
- Convert TXT to PDF



## PDF Processing

- Create PDF documents from scratch, from 1.4 to 2.0
- Create PDF/A documents with any version and conformance level
- Load/save PDF documents from/to disk or memory
- Edit PDF metadata at document, page, and object levels
- Support any PDF version from 1.0 to PDF 2.0
- Create and place 1D or 2D barcodes that comply with major standards (e.g. Code128, QR Code)
- Manipulate content streams and optional content groups (OCG)

- Create, modify, and extract annotation or form field properties
- Capabilities to flatten form fields, annotations, and layers
- Create, modify, and extract link properties
- Fully manage PDF actions
- Create, modify, and extract bookmark (or outline) properties
- Encrypt and decrypt documents with 256-bit AES and apply security properties
- Digitally sign PDF documents and validate electronic signatures
- Create, modify, and extract document properties
- Fully control all possible ways to handle file attachments for reading and writing
- Manage fonts with complete subsetting and Unicode support
- Render text with advanced layout support
- Rasterize pages to images at blazing speed and with very high fidelity
- Extract and embed images with any supported compression scheme and color space preservation
- Add image or text watermarks to existing PDF documents
- Advanced text search with regex and fuzzy search support
- Search and highlight text of existing PDF documents
- Advanced text extraction powered by a state-of-the-art layout-understanding engine
- Handle measurement and coordinate units for reading and writing operations
- Manage all graphics state operators to describe content appearance
- Draw any common shape such as ellipses, circles, lines, rectangles, and more
- Fully control path construction and painting operations
- Advanced printing support, including full control over the printing process
- Create accessible PDFs by fully managing marked content and tags
- Optimize PDFs with advanced content processing features, font optimization, and unused resources removal
- Repair corrupted PDF documents using advanced content retrieval capabilities
- Advanced content manipulation capabilities to remove text, hidden text, and text area
- Convert pages to grayscale with vector content preservation
- Analyze content of specific pages to determine the presence of hidden text, visible text, images, and graphics, and determine if a page is raster-based
- Remove interactive content of PDFs, such as annotations, form fields, hyperlinks, and JavaScript



## PDF/A Conversion and Validation

- Convert more than 100 formats to PDF/A
- Convert to all PDF/A versions and conformance levels
- Validate any PDF/A version and conformance level
- Convert to PDF/A by direct modification (fixing existing content to fit PDF/A requirements, as opposed to creating a completely new file based on the original), vectorization, or rasterization
- Automatically determine the claimed conformance of a document
- Provides both a basic validation result and a detailed machine-readable report (XML)



## Redaction

Add redaction marks

Customize redaction marks