

**ABBYY®**

# FlexiCapture™ 1.5

## Intelligent Technology for Semi-structured Forms and Documents

### Overview: An Answer for Semi-Structured Document Processing

Each day companies around the world struggle with the monumental task of processing millions of paper documents - all of which need to be input into the computer in the quickest, most cost-effective way possible. While today's forms processing systems have advanced significantly, the available options for processing semi-structured forms and documents have remained limited.

Traditional methods for capturing semi-structured forms and documents have required many hours, days, or months of customization - creation of multiple form templates for each form layout, form redesign and technology adaptation. Or alternatively, manual input by an operator. ABBYY now offers an alternative.

ABBYY FlexiCapture Studio provides an easy-to-use solution for processing documents that contain similar sets of information, but have varied form layouts and structures. Designed as a companion product for ABBYY FormReader™ and ABBYY FineReader® Engine, ABBYY FlexiCapture Studio enables the creation of intelligent form layouts that work together with ABBYY recognition software to detect key form field data despite variations in layout and placement. It is an ideal solution for processing a wide variety of semi-structured documents in the following areas:

| Industries                    | Finance/Banking   | Accounting   | HR/Legal   | Healthcare/ Insurance   | Transportation  |
|-------------------------------|---|--|--|---|---|
| <b>Form or Document Types</b> | <ul style="list-style-type: none"> <li>• Mortgage papers</li> <li>• Loan documents</li> <li>• Financial statements</li> <li>• Explanation of Payments (EOPs)</li> <li>• Payment orders</li> <li>• Credit notes</li> </ul> | <ul style="list-style-type: none"> <li>• Invoices</li> <li>• Purchase orders</li> <li>• Checks</li> <li>• Remittance forms</li> <li>• Payment slips</li> </ul> | <ul style="list-style-type: none"> <li>• Application forms</li> <li>• Contracts</li> <li>• Benefit enrollment forms</li> </ul> | <ul style="list-style-type: none"> <li>• HCFAs</li> <li>• UB-92 forms</li> <li>• Claim forms</li> <li>• Explanation of Benefits (EOBs)</li> </ul> | <ul style="list-style-type: none"> <li>• Bills of lading</li> <li>• Waybills</li> <li>• Customs declarations</li> <li>• Delivery notes</li> <li>• Shipping documents</li> </ul> |

### ABBYY FlexiCapture: Intelligent Technology

How does a human operator enter data from semi-structured forms into a computer? When looking for data, the operator looks at the entire form as a whole and then analyzes various form elements and individual pieces of information, such as field captions or units of measurement. The operator then looks at information surrounding the form fields to determine which information to enter into which part of the database.

ABBYY FlexiCapture uses artificial intelligence to enable ABBYY recognition technologies (ABBYY FormReader and ABBYY FineReader Engine) to act in a similar fashion. FlexiCapture is based on the principles of Intelligent, Purposeful and Adaptable (IPA) recognition. IPA imitates the ways in which humans recognize objects. With user-defined descriptions, FlexiCapture guides ABBYY recognition engines toward finding the required fields on forms with varied layouts. As a result, the recognition software can find a key field and piece of data, such as "date," on various different forms - **no matter where it is located on the paper** (at the top left, bottom right, etc.).

### How FlexiCapture Studio Works: The FlexiLayout™

FlexiCapture Studio extends the data capture and recognition capabilities of ABBYY FormReader and ABBYY FineReader Engine beyond traditional form processing. It achieves this by enabling simple creation, testing, and debugging of a FlexiLayout, a formal description, or "map" of the fields and variable layouts of a certain set of forms.

Customers can work with FlexiLayouts by:

- **Using the FlexiCapture Studio interface** - the intuitive dialogues require no coding or programming experience.
- **Fine-tuning the FlexiLayout** - using FlexiCapture's special template creation programming language.

FlexiLayouts describe the logic of data extraction. Each FlexiLayout consists of user-defined elements and blocks. Elements in the FlexiLayout serve as a set of rules or descriptions of objects and their relationship within the document. They help ABBYY recognition technology find the necessary data fields during forms processing and document recognition. Elements include static text, character strings, white spaces, etc. Blocks describe the elements from which the data must be captured - they are the areas from which ABBYY recognition technology must capture data.

High accuracy and speed is achievable because FlexiCapture uses a unique algorithm to detect data fields by analyzing whole sets of form elements. This approach is dramatically different from that of traditional forms processing technology which analyzes separate elements one by one. By analyzing a set of elements as a group, FlexiCapture can increase accuracy by viewing elements "in context" and speeds up the steps needed to process the entire form.

A completed and tested FlexiLayout is easily exported into one of the ABBYY products - FormReader or FineReader Engine - for data capture of semi-structured documents, no matter how complex the layout may be.



## Key Functionality

### Interface

- Visual environment for easy FlexiLayout creation, editing and testing
- "Tree View" option for easy viewing of FlexiLayout blocks, hypotheses and properties
- Customizable program windows
- Drag-and-drop functionality

### FlexiLayout Objects

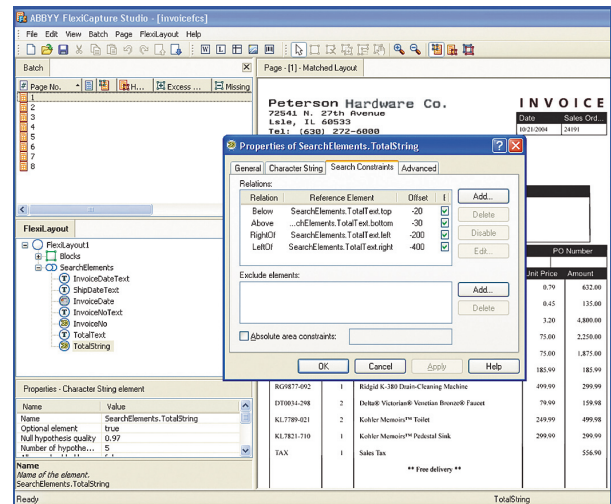
- Block (objects that contain required data) types: text, tables, barcodes, checkmarks and pictures
- Element (objects that help in locating blocks) types:
  - simple elements (static text, separators, white gaps, barcodes, character string, text fragment, object collection, table, date, phone, currency)
  - compound elements (simple elements joined by AND)

### FlexiLayout Creation

- Pre-recognition in 172 OCR languages, with the ability to select multiple language combinations
- Intuitive dialogs for setting element properties
- Specification of element properties based on type:
  - text to be searched with possible alternatives and numbers of errors
  - columns, rows, header and footer properties for tables
- Selection of search constraints with absolute search area coordinates and relative position over other elements
- Advanced code writing settings for FlexiCapture programming language such as automatic check of error message syntax
- Ability to set one-to-many relationships between elements
- Easy FlexiLayout error checking during creation process

### FlexiLayout Testing and Adjustment

- On-the-fly testing and adjustment of FlexiLayouts using a batch of sample images
- Formulation of hypotheses (assumptions that the detected objects correspond to the elements) that are:
  - created for whole set of elements (as opposed to single element)
  - arranged in a tree-like structure and ranked by quality
  - analyzed with best hypothesis selected and marked
- Visualization of relationship between a possible hypothesis and FlexiLayout element
- Usage of null hypotheses when optional elements cannot be found
- Grouping of hypotheses in clusters
- Display of hypotheses based on element types and search results (found/not found).
- Easy testing of FlexiLayouts by comparison of results with a reference layout created by:
  - drawing elements manually
  - correcting the results of matching



## Benefits of ABBYY FlexiCapture Studio

- **Expands your business options.** Provides a flexible tool for delivering reliable and effective solutions for semi-structured forms processing.
- **Supports a wide range of semi-structured documents and markets.** Can define layouts of different complexities - invoices, documents with special headers, pages with tables.
- **Ease of use.** Versatile and visualized interface enables use without the need for specialized programming skills.
- **Fast deployment.** Simple tools and pre-packaged samples expedite set up and testing.
- **Cost-effective.** Competitive pricing and ease-of-use limit the amount of resources required to develop powerful solutions.
- **Proven technology.** FlexiCapture is based on more than 4 years of development working closely with large enterprise customers on flexible form projects. Products based on ABBYY FlexiCapture technology are already in use by many organizations in North America.

## Licensing Policy for FlexiCapture Studio

ABBYY FlexiCapture Studio is an add-on module that works with ABBYY FormReader 6.5 Desktop and Enterprise Editions and ABBYY FineReader Engine SDK. At least one runtime license of the base product (FormReader or FineReader Engine) is required to process forms using FlexiCapture Studio. Contact authorized ABBYY partners for upgrade and pricing information for FlexiCapture Studio.



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