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## Rule Manager Window

Chapter 3 describes the features of the *Rule Manager Window*, and the tools of its *Fingerprints & Zones* and *Rules* panels.

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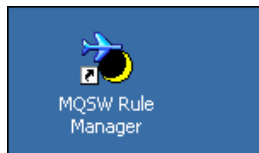
## Introduction

The *Rule Manager Window* is a workshop that supports two activities:

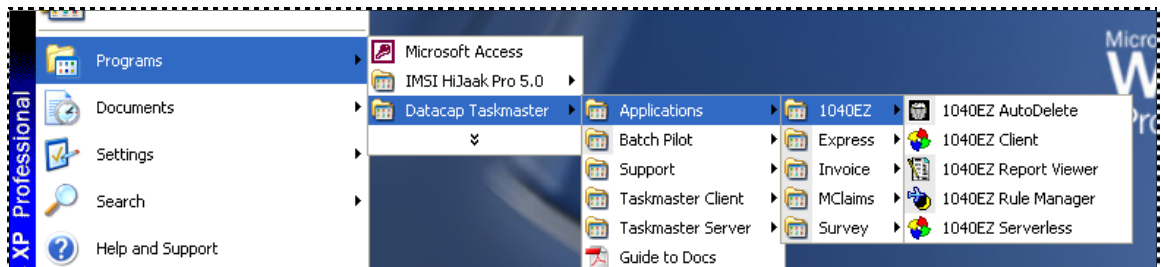
- ◆ **Development of Fingerprints.** A fingerprint is the electronic representation of a single *source* page – a page which contains user-entered data. A fingerprint stores information about the location of fields on the page, their titles *and* the values they contain. *Rule Manager* ensures that each field of the fingerprint is correctly linked to a **Field** object of an application’s Document Hierarchy.

An application such as *Taskmaster for Invoices* establishes numerous fingerprints to process a variety of *source* pages, each with a unique design. However, the scope of other applications is limited to *source* pages with a single design, so the application needs just a few fingerprints. The *1040EZ* training application, for example, employs relies on one fingerprint to represent its *source* page and the fields it contains.

- ◆ The *Fingerprints & Zones* panel of the *Rule Manager Window* has tools to set up new fingerprints and add them to a Fingerprint Inventory.
  - ◆ **Rule Definition and Application.** The *Rule Manager Window’s Rules* panel (Page 36) defines the rules that govern the way tasks process a batch, a document, pages, and fields of a *source* page.
- ✓ To access your application’s *Rule Manager* and its *Rule Manager Window*, double-click on the **RULE MANAGER** icon you added to your desktop when you set up the application (Chapter 2.)

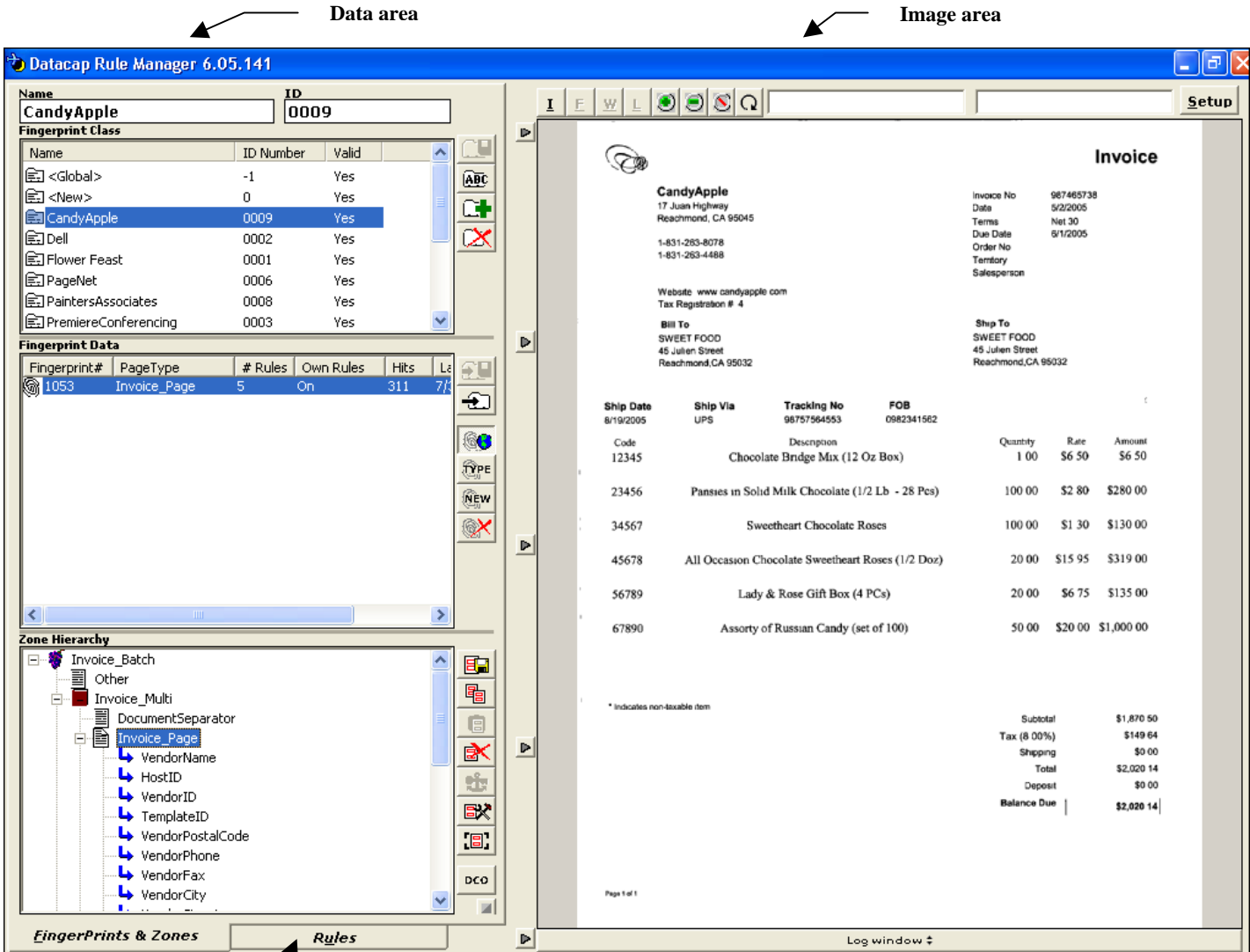


- To access the *Rule Manager* of the *1040EZ* or *Invoices* application:
  - Select **Datacap Taskmaster** from the **Programs** options of your Windows Start button.
  - Open the **Applications** folder and the **1040EZ** sub-folder (for example).
  - Double-click on the **1040EZ Rule Manager** icon.



# Elements of the Fingerprints & Zones Panel

The *Fingerprints & Zones* panel has an **Image Area** on the right and a **Data Area** on the left.



Rule Manager Window – *Fingerprints & Zones* panel  
Invoices Application

Click here to  
move to the  
Rules panel.









## Image Area

This area displays the image of a fingerprint you select from the list in the middle display of the **Data** area on the left.

- You must assign a unique fingerprint to each **Page** object that represents a *source* page of an application's Document Hierarchy. However, that a fingerprint does not have to be accompanied by an image.

**Alert!** The text fields at the top of the **Image** area are not available when the *Fingerprints & Zones* panel is active.

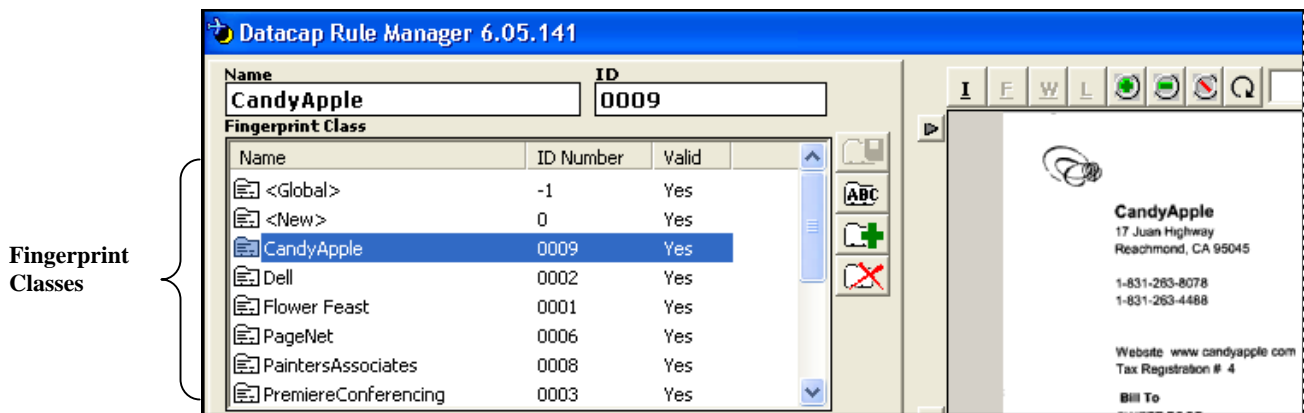
The table below describes the **Image** area's features.

Element	Icon/Button	Description
<b>Image Area Icons and Buttons</b>		
Image Processing dialog icon		Accesses the <i>Image Processing Setup</i> dialog. You can use the dialog's settings and tools to enhance a fingerprint's image (Page 10).
<u>F</u> , <u>W</u> and <u>L</u> buttons		Buttons that display and highlight a fingerprint's fields, lines and words.  <b>Alert!</b> The buttons are only available when you are working within the <i>Rules</i> panel (Page 36).
Image Zoom In		Increases the magnification of the fingerprint's image.
Image Zoom Out		Decreases the magnification of the fingerprint's image.
Reset Image Size		Restores the default "fit in window" magnification.
Rotate Image ¼ Turn		Rotates the image 90°.
Rules Log Access		Clicking on one of four icons along the <b>Image Area's</b> left edge opens the <i>Rules Log</i> screen and reduces the size of the fingerprint's image.  This screen is active <i>only</i> when you are working within the <i>Rules</i> panel.
Rule Manager Setup		Situated in the upper right corner, this button retrieves the <i>Rule Manager Setup</i> dialog (Chapter 2).

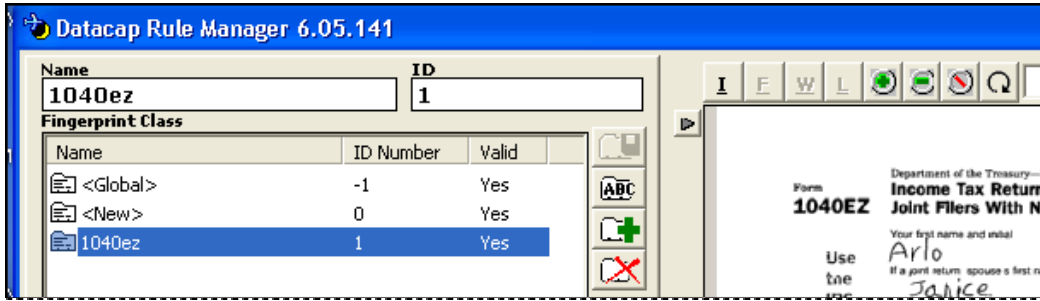
## Data Area

This area has three “displays”: **Fingerprint Class**, **Fingerprint Data**, and **Zone Hierarchy**. Each has a distinct set of icons along its right edge.

Element	Icon	Description
<b>Fingerprint Classes</b>	<i>n/a</i>	The panel’s upper display has two fields – <b>Name</b> and <b>ID</b> – and a table with information about Fingerprint Classes. A “class” is a category that holds one or more fingerprints listed in the <b>Fingerprint Data</b> display in the middle of the panel’s <b>Data</b> area.  For comparison, the illustrations below and on the next page depict the default Fingerprint Classes of the pre-configured <i>1040EZ</i> application and the <i>Taskmaster for Invoices</i> application.
Name field	<i>n/a</i>	Displays the name of a class you’ve highlighted in the <b>Fingerprint Class</b> table below.  When you set up a <i>new</i> class, you must enter a <b>Name</b> value in this field.
ID field	<i>n/a</i>	Displays the unique ID of the class you’ve highlighted in the <b>Fingerprint Class</b> table.  When you set up a <i>new</i> class, you’ll enter the ID in this field.  <i>-1</i> is the ID of the Global Fingerprint’s class (Page <b>Error! Bookmark not defined.</b> )




**Rule Manager Window – Fingerprints & Zones panel**  
**Fingerprint Classes: Invoices application**






Fingerprint Classes – 1040EZ application

- ✓ To access the pre-configured 1040EZ and Taskmaster for Invoices applications without difficulty, follow the instructions on Page 2.



Fingerprints & Zones panel – Data Area (continued)

Element	Icon	Description
<b>Fingerprint Class table</b>	<i>n/a</i>	This table lists all fingerprint classes – even classes that do not currently contain fingerprints.
Name	<i>n/a</i>	A unique name you specify as a class that will hold one or more fingerprints.  For the pre-configured <i>Taskmaster for Invoices</i> application, this is typically the name of the vendor who is submitting an invoice that is the basis for the fingerprint.
ID Number	<i>n/a</i>	The identifying code assigned by <i>Rule Manager</i> to the class. (You can override <i>Rule Manager</i> by assigning a different ID.)
Valid	<i>n/a</i>	<i>Yes</i> or <i>No</i> .  <i>Yes</i> means that the Class ID and Name have been successfully assigned using the Rule Manager Window's <i>Fingerprints &amp; Zones</i> panel; <i>New</i> indicates that a Verification task's Data Entry operator has assigned a new, as yet unconfirmed, Class ID and Name to a current <i>source</i> page before it becomes a fingerprint.
<b>Fingerprint Class icons</b>	<i>n/a</i>	These four icons are on the display's right-hand edge.
Save		Saves new Fingerprint Class Name and ID data.  This icon is only available <i>after</i> you click on the <b>Add New Name and ID</b> icon or the <b>Edit Name and ID</b> icon (described on the next page).

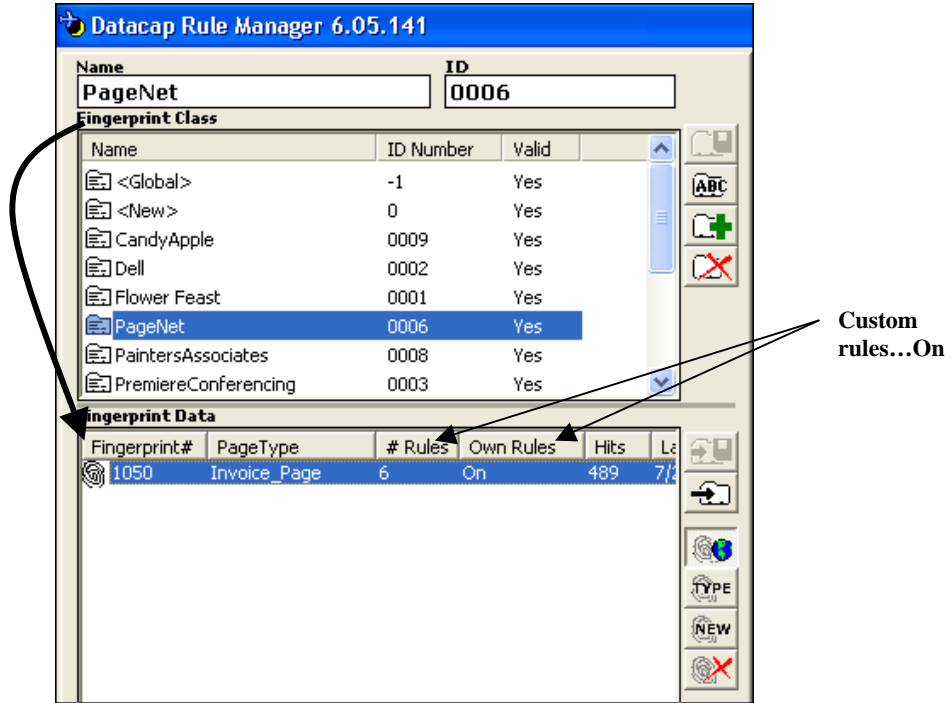
Fingerprints & Zones panel – Data Area (continued)

Element	Icon	Description
Edit Name and ID		<p>Enters the identifying codes of the class you've highlighted, in the <b>Name</b> and <b>ID</b> fields at the top of the display.</p> <p>This step permits you to change either value; however, it also temporarily freezes your access to the other listings.</p> <p><b>Alert!</b> This is a toggle switch.</p>
Add New Name & ID		<p>A toggle switch that clears the <b>Name</b> and <b>ID</b> fields so you can set up a <i>new</i> class.</p>
Delete		<p>After a proper warning, removes a class you've highlighted.</p> <p><b>Be careful!</b> This icon also deletes all fingerprints associated with the class <i>and</i> any custom rules you've compiled for those fingerprints.</p>
<b>Fingerprint Data - Table</b>	<i>n/a</i>	<p>This table provides information about the fingerprint(s) you have constructed for one class, or for multiple classes. The table's data also covers the application's Global fingerprint.</p>
Fingerprint#	<i>n/a</i>	<p>A unique identifier automatically assigned by <i>Rule Manager</i> to a new fingerprint.</p> <p>Fingerprint ID's are unique throughout the application. "555" is the standard <i>Rule Manager</i> designation for an application's <b>Global fingerprint</b>. This fingerprint is used to define the rules that apply to all fingerprints - unless a custom rule for a specific fingerprint overrides the corresponding global rule.</p>
Page Type	<i>n/a</i>	<p>The Page Type value of the <i>source</i> page represented by the selected fingerprint – and a <b>required</b> attribute of every fingerprint.</p> <p><i>Other</i> is the Page Type of an application's Global fingerprint – and the name of the <b>Page</b> object that is a child of the <b>Batch</b> object of an application's Document Hierarchy.</p> <p>Because other fingerprints can represent the application's <i>source</i> page, their Page Type values are usually the name of that <b>Page</b> object. <i>Invoice_Page</i>, for example, is the Page Type of all fingerprints of the <i>Taskmaster for Invoices</i> application.</p>
# Rules	<i>n/a</i>	<p>The number of custom rules that have been defined for a fingerprint. (Remember: A custom rule overrides a global rule. For details, see Page XX).</p>

Fingerprints & Zones panel – Data Area (continued)

Element	Icon	Description
Own Rules	<i>n/a</i>	An <i>On</i> or <i>Off</i> condition to indicate if a <i>source</i> page that matches this fingerprint can use its custom rules.  The <b>On/Off</b> icon (described below) toggles this condition.
Hits	<i>n/a</i>	The cumulative number of matches during processing. between <i>source</i> pages and the fingerprint
Last Match Date	<i>n/a</i>	The date of the most recent match between a <i>source</i> page and the fingerprint.
<b>Fingerprint Data - Icons</b>		These icons are on the display's right edge.
Save		Saves your assignment of a new or existing fingerprint to a particular class (Page <b>Error! Bookmark not defined.</b> ) <i>or</i> the assignment of a new <b>Page Type</b> to the fingerprint (Page XX).
Assign or Re-Assign Fingerprint Name & ID		Assigns a fingerprint you select from the <b>Fingerprints List</b> to the class you've highlighted in the <b>Fingerprints Class</b> table.  This icon assigns a new fingerprint to the current class, or an existing fingerprint to a different class.  <b>Alert!</b> Be sure to use this icon in conjunction with the <b>Save</b> icon above.







Rule Manager Window – *Fingerprints & Zones* panel  
Class and Fingerprint Data

Fingerprints & Zones panel – Data Area (continued)

Element	Icon	Description
Fingerprint-specific Rule Selection: <i>On</i> or <i>Off</i>		A toggle switch that permits a selected fingerprint to invoke its own fingerprint-specific rules when it runs (In = <i>On</i> ), or prevents the fingerprint from applying those rules (Out = <i>Off</i> ).  As an example, certain fingerprints of the <i>Taskmaster for Invoices</i> application rely on custom <b>Validation</b> and <b>Export</b> rules. <i>Invoices cannot</i> apply these rules if the fingerprint’s <b>Own Rules</b> status is <i>Off</i> (see the illustration above).
Set or Adjust Fingerprint’s Page Type		Assigns the <b>Page Type</b> property of a selected fingerprint.  When you select a fingerprint from the list and click on this icon, the <b>Fingerprint Class</b> display at the top lists alternative Page Types.  <b>Alert!</b> A fingerprint must have a Page Type. To assign this value, highlight the Fingerprint ID, click on this icon, select a Page Type and press the <b>Save</b> icon.

### Fingerprints & Zones panel- Data Area (continued)

Element	Icon	Description
Create New Fingerprint		Selects, retrieves and displays the Image file of a current <i>source</i> page.  The image will guide you through the steps you take to define a new, fingerprint. (For details, see Chapter 4 of the <i>Guide to Taskmaster Rules</i> .)
Delete Selected Fingerprint		After a warning, deletes the fingerprint you have selected from the Fingerprint List, <b>and</b> any custom rules you have defined for it.  <b>Be careful!</b> You cannot undo this step.

## Image Processing Setup Dialog

When a Recognition task matches a *source* page to a fingerprint, the task can repair and enhance the page's image if the task been instructed to carry out a set of rules with actions that modify the image (Chapter 4) - or if the fingerprint's specifications include criteria provided by the *Image Processing Setup* dialog (illustrated on the next page.)

- ✓ To access this dialog, select a Fingerprint ID from the *Fingerprint & Zones* panel's **Fingerprint Data** display and click on the panel's **I** icon in the top, left-hand corner of the **Image** area.

**Important!** When you are defining a new fingerprint, *Rule Manager* automatically asks if you would like to enhance the fingerprint's image. Selecting "Yes" from the *Message Pad* opens the *Image Processing Setup* dialog.

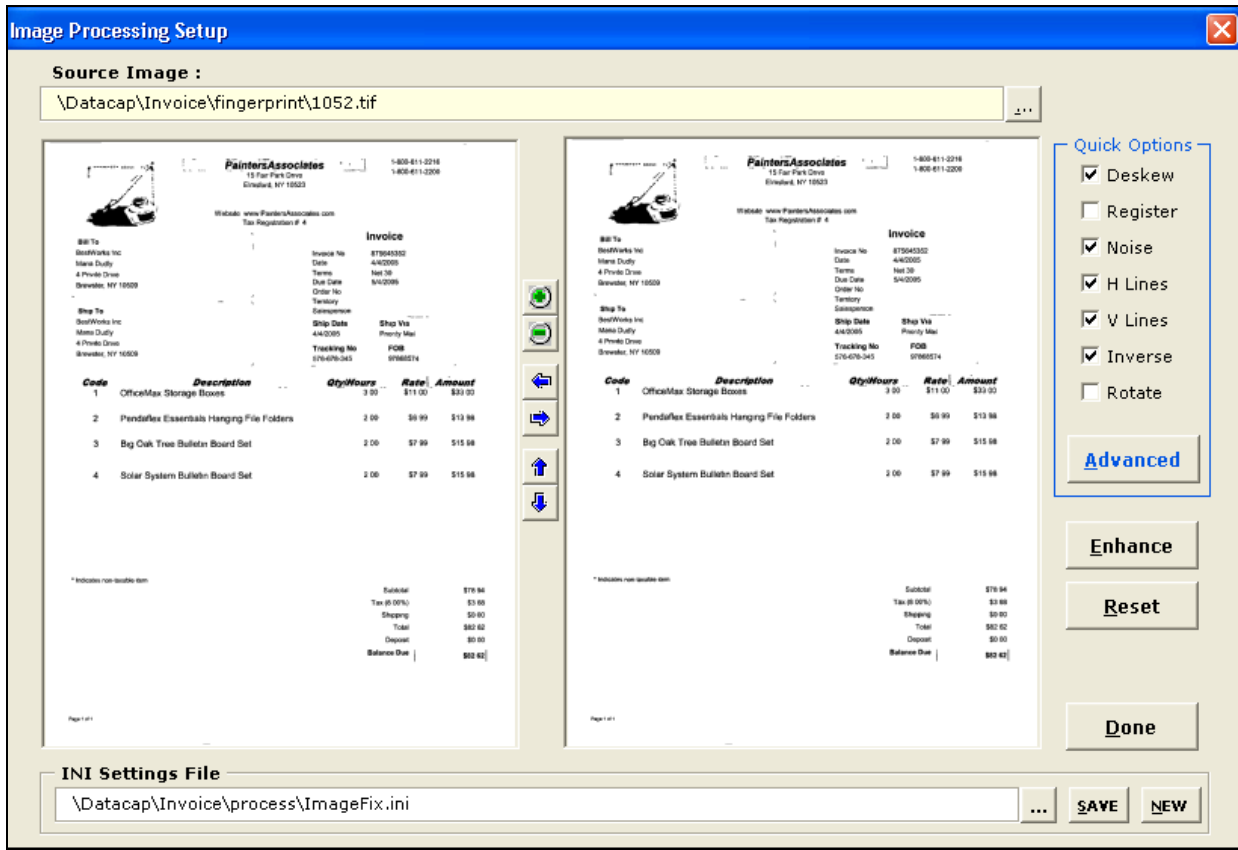


Image Processing Setup dialog – 1003.tif

- ✓ On the left side, the dialog displays the fingerprint’s image before you assigned enhancement parameters; on the right is the fingerprint’s enhanced image. Selection of a check box in the **Quick Options** area assigns default enhancement parameters in that category. You can review or change the default settings by clicking on the **Advanced** button to access the *Enhancement Settings* dialog (illustrated on Page 14.)

The table below describes the elements of the *Image Processing Setup* dialog.

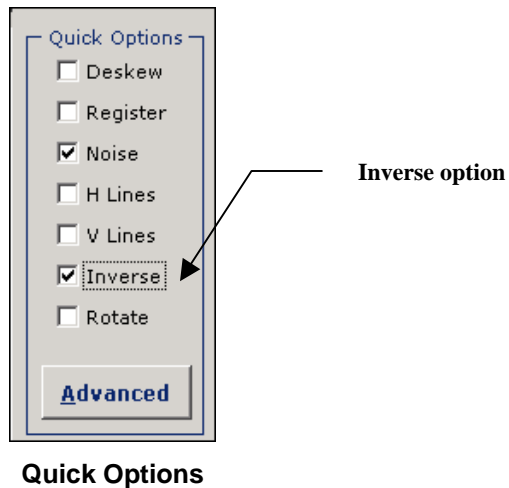
Item	Description
Source Image	The name and path of the fingerprint’s Image file (.tif). You can use the ellipsis button (...) to retrieve an alternative image – ideal for practice and testing.
Left Image	The fingerprint’s original image – before enhancement. <i>Rule Manager</i> identifies the role of a <i>before</i> or <i>after</i> image when you point at it with your mouse.
Right Image	The fingerprint’s image after you have assigned enhancement parameters and clicked on the Enhance button (below).

### Image Processing Setup dialog (continued)

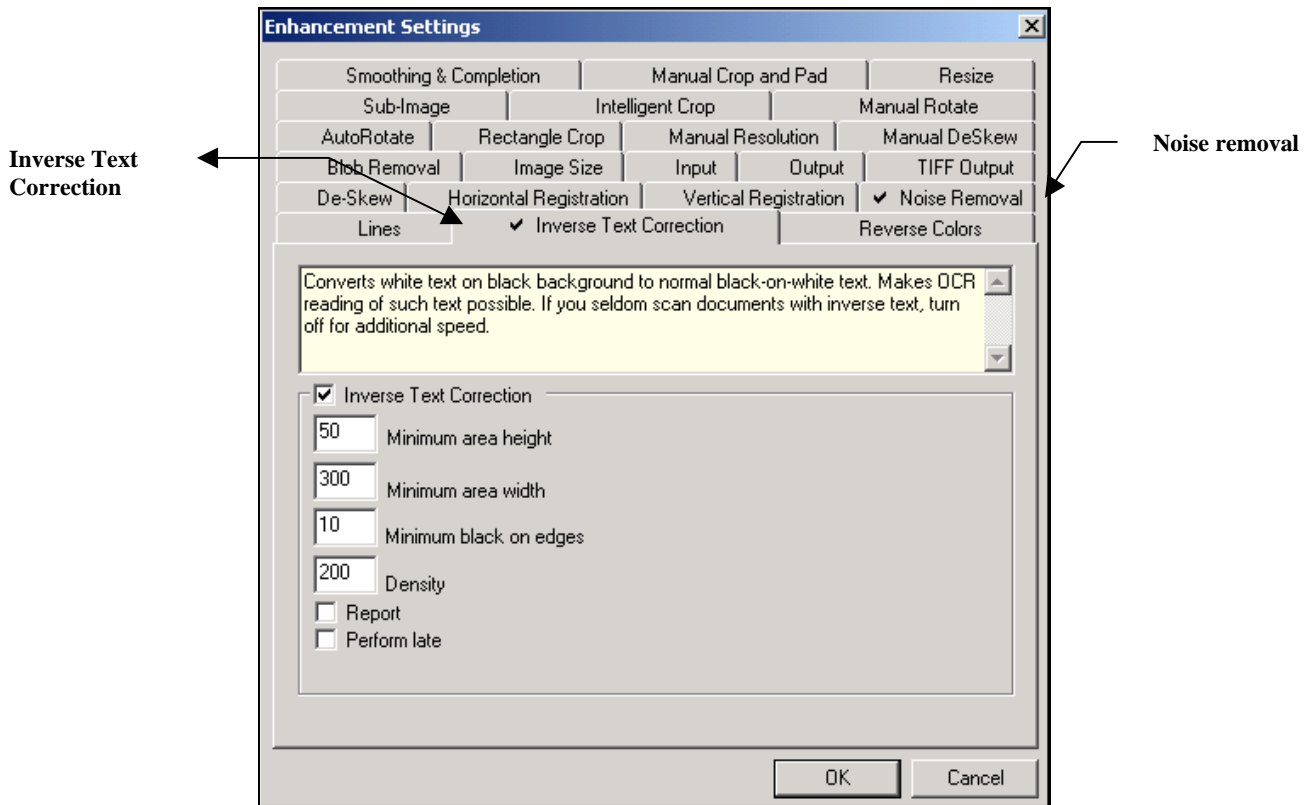
Item	Description
Image Management buttons	These buttons line up between the images.
+ , -	Increase or decrease the magnification of <i>both</i> images.
→, ←	Scroll both images to the right or left.
↑, ↓	Scroll both images up or down.
INI Settings File	<p>The name and path of a Settings file (<b>ImageFix.ini</b>) that will retain default Image Processing criteria for this fingerprint only.</p> <p>Page <b>Error! Bookmark not defined.</b> shows you how to assign default parameters to <b>ImageFix.ini</b> and how to define a Settings file for an individual fingerprint.</p>
... button	Accesses the <i>Open</i> file dialog so you can retrieve an existing Image Settings file (.ini).
Save button	Saves new or changed values to the file designated in the <b>INI Settings File</b> field.
New button	Saves the current specifications to a new file you designate.
<b>Quick Options</b>	<p>Seven enhancement categories.</p> <p>If select a category (or categories) and take no further action, <i>Rule Manager</i> will assign the default values of the settings in each category to enhance the images of <b>current</b> pages that match the fingerprint <i>if</i> you press the Enhance button.</p> <p><b>Important!</b> The <i>Enhanced Settings</i> dialog has 22 tabs – each with its own category, and default values for every one of its settings! To access this dialog, press the Advanced button.</p>
Deskew	<p>Straightens the image.</p> <p>The de-skewing parameters and a further explanation of this process are in the <i>De-skew</i> tab of the <i>Enhancement Settings</i> dialog (illustrated on the next page.)</p> <p><b>Don't forget:</b> The <i>Enhancement Settings</i> dialog features a tab for each <b>Quick Option</b> setting. To access the correct tab, select a setting and click on the Advanced button.</p>
Register	Eliminates black borders and excessive white margins, according to parameters in the <i>Enhancement Settings</i> dialog.

Image Processing Setup dialog (continued)

Item	Description
Noise	Removes small spots in the image.
H Lines	Removes long horizontal lines
V Lines	Removes vertical lines.
Inverse	Displays white text in a black background as black text in a white background.
Rotate	Checks whether the image needs rotation.
Advanced button	Accesses the <i>Enhanced Settings</i> dialog (illustrated on the next page.)
Enhance button	<p>Assigns default enhancement criteria to the current fingerprint's image, along with any changes you have made in any category.</p> <p><b>Important!</b> These criteria will apply to all images of <b>source</b> pages matched to this fingerprint during processing.</p> <p>After you click on this button, modifications to the <b>original</b> image will appear on the right, as an <b>enhanced</b> image.</p>
Reset Button	Returns an <i>enhanced</i> image to its <i>original</i> state.
Done button	Closes the <i>Image Processing Setup</i> dialog.



## Image Processing Setup Dialog



Enhancement Settings dialog

### Default and Fingerprint-specific Settings Files (.ini)

The **ImageFix.ini** file in your application's **Process** directory lists parameters and values based on default selections in the **Quick Options** area of the **Image Processing Setup** dialog, and corresponding specifications in tabs of the **Enhancement Settings** dialog.

- ✓ When you click on the Enhance button (below), the fingerprint's image is enhanced in response to the default settings. You can, however, change these settings and their values in three ways.

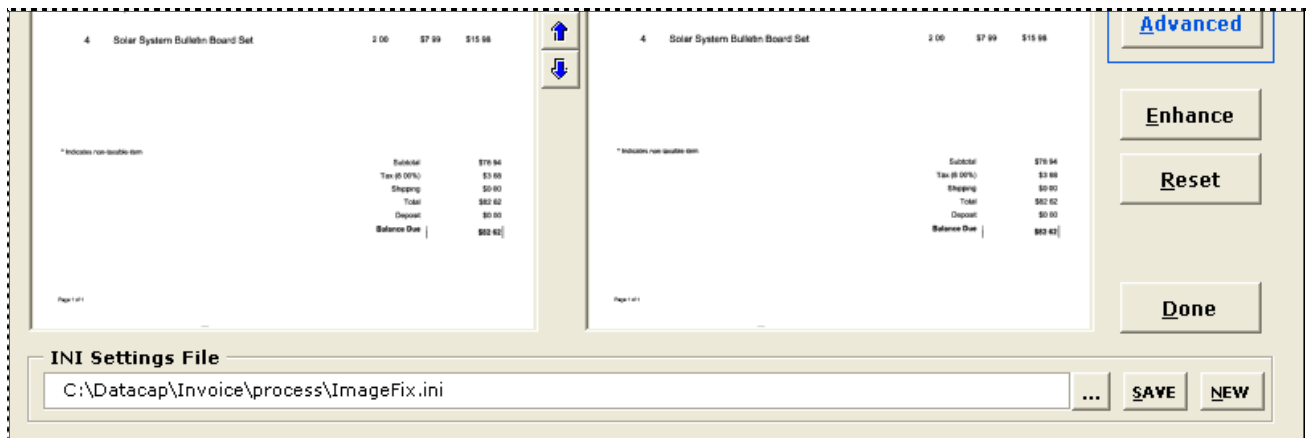


Image Processing Setup dialog

- ✓ **Important!** During processing, enhancement of an image must take place before recognition of its fields and their values. **Be sure** your workflow's tasks apply **ImageFix** rules and actions before they apply **Recog** actions. For details, see Chapter 4.

## Zone Setup

Page 5 touched on the role of zones in the fingerprint:

- A zone identifies **and** locates a field of special interest within the fingerprint.
- The zone's values – its **Field ID** and **Location** coordinates – become *zonal* properties of the fingerprint. A Recognition task will use the values to locate the field and, if appropriate, to retrieve the fields' data.
- Some applications rely on zone values to locate a fingerprint's **Anchor** field and, if applicable, a **Detail** field with its rows of Line Item Detail.

Tools and settings in the *Fingerprints & Zones* panel's **Zone Hierarchy** display make it easy to flag a zone within the fingerprint and link it to an object of the Document Hierarchy. (For a complete explanation of zoning procedures, see Chapter 4 of the *Guide to Taskmaster Rules*.)

**Zone Hierarchy**

- [-] Invoice\_Batch
  - [-] Invoice\_Document
    - [-] DocumentSeparator
      - [-] **Invoice\_Page**
        - [-] Vendor ID
        - [-] Vendor Name
        - [-] Number
        - [-] Date
        - [-] PO Number
        - [-] Tax
        - [-] Shipping
        - [-] Total
        - [-] DETAILS
        - [-] LINEITEM

**Miracull Fingerprint**

**MIRACULL**

1432 Pebble Highway      INVOICE  
New Sands, CT 06897

To: Whitehall Properties, Inc      PO Number: WHP-1434132  
321 Sloan Street      Invoice Number: 33302  
New Sands, CT 06897      Invoice Date: 04/01/04

Item No.	Description	Quantity	Price/Rate	Amount
S-L676	Lawn Maintenance	4 hrs	80.00	320.00
I-S200	Fall Seed	6	127.55	765.30
<b>Tax</b>				32.56
<b>Total</b>				1117.86

Miracull Landscaping 1432 Pebble Highway New Sands CT 06897 203-843-8765 miracull.com

In the composite above, construction of a *Miracull* fingerprint based on this invoice will benefit from at least three zones:

- ◆ The outsized logo might serve as an Anchor field; however, the *Invoice* application does not use an anchor.

## Zone Setup

- ◆ A **DETAILS** zone will lead a Recognition task right to the table containing Line Item Detail.
- ◆ **LINEITEM** zones can identify and locate rows within the Line Item Detail table.

Here's the same fingerprint after the *Invoice* application's Administrator flagged those zones:

**Zoned!**

**Zone Hierarchy**

- Invoice\_Batch
  - Invoice\_Document
    - DocumentSeparator
    - Invoice\_Page
      - Vendor ID
      - Vendor Name
      - Number
      - Date
      - PO Number
      - Tax
      - Shipping
      - Total
      - DETAILS
      - LINEITEM

**MIRACULL**

1432 Pebble Highway  
New Sands, CT 06897

INVOICE

To: Whitehall Properties, Inc  
321 Sloan Street  
New Sands, CT 06897

PO Number: WHP-1434132  
Invoice Number: 33302  
Invoice Date: 04/01/04

Item No.	Description	Quantity	Price/Rate	Amount
S-L676	Lawn Maintenance	4 hrs	80.00	320.00
I-S200	Fall Seed	6	127.55	765.30
<b>Tax</b>				32.56
<b>Total</b>				1117.86









Miracull Landscaping 1432 Pebble Highway New Sands CT 06897 203-843-8765 miracull.com

The **Zone Hierarchy** display has these features:

Field or Icon	Description
Document Hierarchy (Zones)	<p>This field displays the objects of your application's Document Hierarchy.</p> <p>After you have flagged a field that linked the zone to the Document Hierarchy, <i>Rule Manager</i> surrounds the field's symbol with a square, and alters the title's color.</p> <p><b>Concurrently</b>, <i>Rule Manager</i> surrounds the target fields in the fingerprint's image with rectangles.</p>

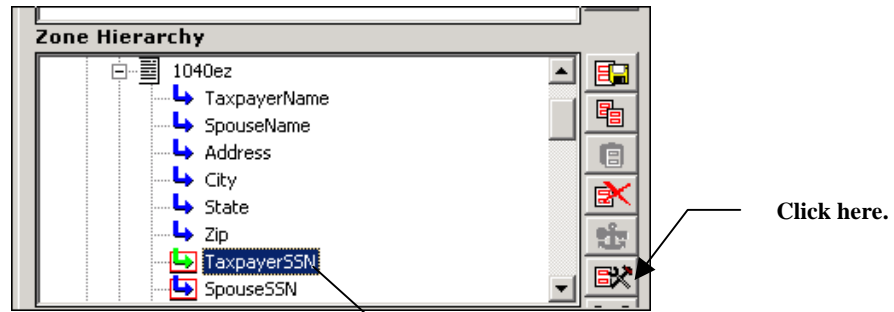


Elements of the Zone Hierarchy Display (continued)

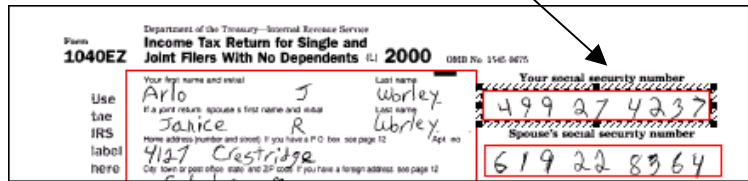
Element	Icon	Description
Save Zone Setup		Saves a fingerprint's zonal settings.
Copy Zone Positions		Copies all zones at the level you've highlighted in the Document Hierarchy.  Copying and pasting zones is effective only when you are setting up multiple fingerprints for the same class, and the fingerprints have comparable formats – an invoice and related reminder statement, for example.
Paste Zone Positions		Pastes zonal settings (you have previously copied) into the current fingerprint <i>after</i> you have cleared existing flags.
Delete Zone		After a proper warning, deletes zones from the level you've highlighted in the Document Hierarchy <i>and</i> all levels below.
Zone Anchor		Defines the target value of a fingerprint's "anchor" field – or lets you modify the value.  This icon is available <i>only</i> if you have selected an <b>Anchor Field</b> object in the Document Hierarchy. (For more about Anchor fields, see Chapter 10 of the <i>Guide to Taskmaster Rules</i> .)
Options Setup		A toggle switch that opens (or closes) the <b>Recognition Options Setup</b> dialog for the <i>zoned</i> field or block you select (Page XX)
Snap Zone to Word(s)		"Snaps" a previously established zone tightly around the target field to provide a current page with more accurate <b>Position</b> parameters.
Document Hierarchy Setup		Accesses the <b>Document Hierarchy Setup</b> window.  You use this window to construct, review and modify the application's Document Hierarchy. Chapter 3 of the <i>Guide to Taskmaster Rules</i> explains this process.

## Recognition Options Setup Dialog

Zoning procedures and **Zone** actions help a task locate objects on a current *source* page, and match them to objects on a fingerprint. However, they do not attempt to *recognize* the value or values in a *zoned* object - a field, block or row. That's the responsibility of procedures and actions that deal specifically with this sort of object – and can therefore expand the scope of the *Fingerprints & Zones* panel's single-purpose **Zoning** options.



1040EZ Rule Manager – *Fingerprints & Zones* Panel  
Zone Hierarchy Display



Highlighted Object

If you select a *zoned* object in the **Zone Hierarchy** display and click on the **Recognition Options Setup** icon (see the illustration above), the *ICR/C* tab of the **Recognition Options Setup** dialog will appear. The example on the next page shows settings for the recognition of values in the *zoned* **TaxPayerSSN** Field object of the *1040EZ* Document Hierarchy.

At the bottom of the dialog, the **Skip Recognition** option, if checked, tells a recognizing action such as **RecognizePage\_ICRC** or **RecognizeField\_ICRC** to skip this zoned field – or the page – during its field or full-page recognition procedures.

The **Reset to Defaults** button resets the tab's specifications to *default* values.

**Recognition Options Setup Dialog – ICR/C Tab**  
**TaxpayerSSN Field Object**

**Recognition Options Setup Dialog – ICR/C Tab**

The ICR/C Recognition engine provides both hand-print and machine-print recognition capabilities. The table below describes the settings of this tab.

Setting	Options	Description
<b>Country</b>	Austria, Belgium, China, Central Europe, Croatia, Czech, England, Europe, France, Germany, Greece, Hungary, Italy, Japan, Lithuania, Malaysia, Netherlands, Poland, Portugal, Russia, Scandinavia, Slovenia, Spain, Switzerland, Thailand, Turkey, USA	A list of countries and regions with distinctly different alphabets.  <b>Default:</b> USA
<b>Font</b>	<i>Options are listed below and on the next page in alphabetical order.</i>	The type of print that is likely to appear in the <b>zoned</b> field you select.  <b>Default:</b> UNKNOWN
	CMC7	A Magnetic Ink Character Recognition (MICR) font used to print bank checks and check drafts in Mexico, France, Spain, Brazil and other Spanish-speaking countries.

Recognition Options Setup Dialog – ICR/C Tab (continued)

Setting	Options	Description
Font (continued)	E13B	A Magnetic Ink Character Recognition (MICR) font used to print bank checks and check drafts in the United States, Canada, UK, Panama, Puerto Rico – and several other countries.
	FARRINGTON_7B	Most credit cards use the Farrington 7B font.
	FIXED	Characters with a distinct and recurring – but unspecified – font of a fixed width.
	HANDPRINT	Hand-printed characters.
	MACHINETYPE	Machine-generated characters without a specified font.  Characters are proportionately spaced, rather than fixed-width.
	OCRA	OCRA-A characters.
	OCRB	OCRA-B characters..
	UNKNOWN	Indicates that the <i>zoned</i> field's font is not known.
	Syntax	<i>Options are listed below.</i>
ALPHNUM		Alphabetic or numeric characters, or a combination.
AMOUNT		Currency values with the possibility of a currency designation (“\$”, for example) as the first character.
NUMERICAL		Numbers with or without decimals, with or without commas to set off thousands (“000,000”).
CODELINE		MICR coding at the bottom of checks.
US_CHECKS		<i>For future use.</i>
UK_CHECKS	<i>For future use.</i>	

Recognition Options Setup Dialog – ICR/C Tab (continued)

Setting	Options	Description	
<b>Character Set</b>	<i>Options are below (and you can add your own.)</i>	The set of the characters most likely to appear in the <b>zoned</b> field or block. <b>Default:</b> <blank> indicating <i>All</i> .	
	A-Za-z0-9	Upper and lower case alphabetic, and numeric.	
	A-Za-z	Upper and lower case alphabetic	
	A-Z0-9	Upper case alphabetic, and numeric.	
	A-Z	Upper case alphabetic	
	0-9	Numeric.	
	<b>Machine Print Pitch</b>	<i>Options are below.</i>	Indicates the likely variation in the size of a value's <i>machine-printed</i> characters. <b>Default:</b> UNKNOWN
	UNKNOWN	The degree of variation is not known.	
	VARIABLE	Proportionately spaced characters.	
	FIXED	Fixed width characters.	
	COMB	Combinations of fixed and variable sizes.	
<b>Handprint Pitch</b>	<i>Options are below.</i>	Indicates the width or spacing of different hand-printed characters. <b>Default:</b> UNKNOWN	
		UNKNOWN	The degree of variation is not known.
		VARIABLE	Varies by character.
		FIXED	All characters are the same width.
		COMB	Combinations of fixed and variable width or spacing.

Recognition Options Setup Dialog – ICR/C Tab (continued)

Setting	Options	Description
<b>Orientation</b>	0, 90, 180, 270	Degree measurement indicating the difference in orientation of the <i>zoned</i> field's value relative to the form's orientation.  <b>Default:</b> 0
<b>Logical Context</b>	ON, OFF	A procedure that checks specifications for settings such as <b>Syntax</b> and <b>Character Set</b> to help decide on the most likely value of a questionable character.  For example, is a "0" a number or a letter? If the <i>zoned</i> entity's <b>Syntax</b> setting is <i>NUMERICAL</i> and its <b>Character Set</b> is <i>0-9</i> , the Recognition engine will opt for a number.  <b>Default:</b> ON.  <i>Alert!</i> This setting must be ON if the Trigram Mode (below) is to work.
<b>Border Cut</b>	<i>Options are below.</i>	Removes one or more borders surrounding a <i>zoned</i> field or block.  <b>Default:</b> OFF
	OFF	No borders are removed.
	ON	Removes the zone's top and bottom borders.
	BOTTOM	Removes the bottom border only.
	TOP	Removes the top border.
	LEFT	Removes the left border only.
	RIGHT	Removes the right border.
	ALL_BORDERS	Removes all borders.
	TOP_LEFT	Removes the top and left borders.
	TOP_RIGHT	Removes the top and right borders.
	BOTTOM_LEFT	Removes the bottom and left borders.
	BOTTOM_RIGHT	Removes the bottom and right borders.

Recognition Options Setup Dialog – ICR/C Tab (continued)

Setting	Options	Description
<b>Trigram Mode</b>	<i>Options are below.</i>	When this mode is <i>not</i> OFF, the Recognition engine checks the characters on both sides of a character to see if <i>their</i> values are any indication of the most likely value of the character.  <i>Alert!</i> If you select <i>SORT_ALTERNATIVES</i> or <i>REJECT_REPAIR</i> , the <b>Logical Context</b> setting (below) must be <i>ON</i> as well.  <b>Default:</b> OFF.
	ON (not OFF)	Conducts trigram analysis.
	OFF	Does not conduct trigram analyses.
	SORT_ALTERNATIVES	Lists sorting alternatives.
	REJECT_REPAIR	Lists optional combinations but does not select a preferred combination.
<b>Dictionary</b>		The name and pathway of a file containing a dictionary of pre-defined values the Recognition engine can use as it seeks to interpret values in the <i>zoned</i> field or block (Page 30).  <b>Default:</b> <i>closed</i> . The Ellipsis button (...) accesses the <i>Open File</i> dialog.
<b>Dictionary Mode</b>	<i>Options are below.</i>	If you do designate a dictionary (above), this setting determines how the Recognition engine will use it:  <b>Default:</b> <blank>.
	OFF	Prevents the engine from referring to the dictionary while recognizing this element's value.
	CORRECTION	Indicates that the dictionary is <i>not</i> exclusive: the zoned field can contain values other than those in the dictionary.
	COMPLETE_CORRECTION	Indicates that the dictionary <i>is</i> exclusive: the Recognition engine will recognize only values in the dictionary.

Recognition Options Setup Dialog – ICR/C Tab (continued)

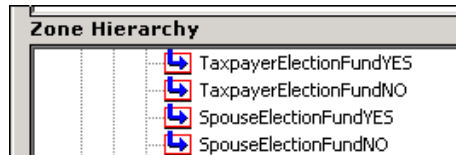
Setting	Options	Description
<b>Dictionary Mode</b> (continued)	LEARNING	
	LEARNING_ CORRECTION	
<b>Reader Selection</b>	RECOSTAR, AEG_RECOGNITION, VOTER	<p>Assigns RecoStar or AEG Recognition as the engine that is to read and recognize values in the <i>zoned</i> field or block.</p> <p>Alternatively, VOTER uses both engines to process a value, and selects the <i>recognized</i> value with the highest Confidence Rating.</p> <p><b>Alert!</b> AEG and VOTER require special licenses from Datacap.</p> <p><b>Default:</b> RECOSTAR</p>
<b>Line Count</b>	Complex Page, MultiLine, (integers) 1-5	<p>The number of discrete lines within the <i>zoned</i> element – typically, a <b>page, block</b> or <b>field</b> within the page.</p> <p><i>Complex Page</i> indicates that the <i>zoned</i> element contains lines of various heights – and may contain logos, graphics or tables. A <i>Complex Page</i> may also include hand-printed values that do not line up with machine-printed lines.</p> <p><i>Multiline</i> indicates that the <i>zoned</i> element contains lines of consistent height, and that are not interrupted by graphics, tables or logos.</p> <p>1-5 are integers specifying the maximum number of lines in a <i>zoned</i> element with <i>MultiLine</i> features.</p>



### Recognition Options Setup Dialog - OCR/S Tab

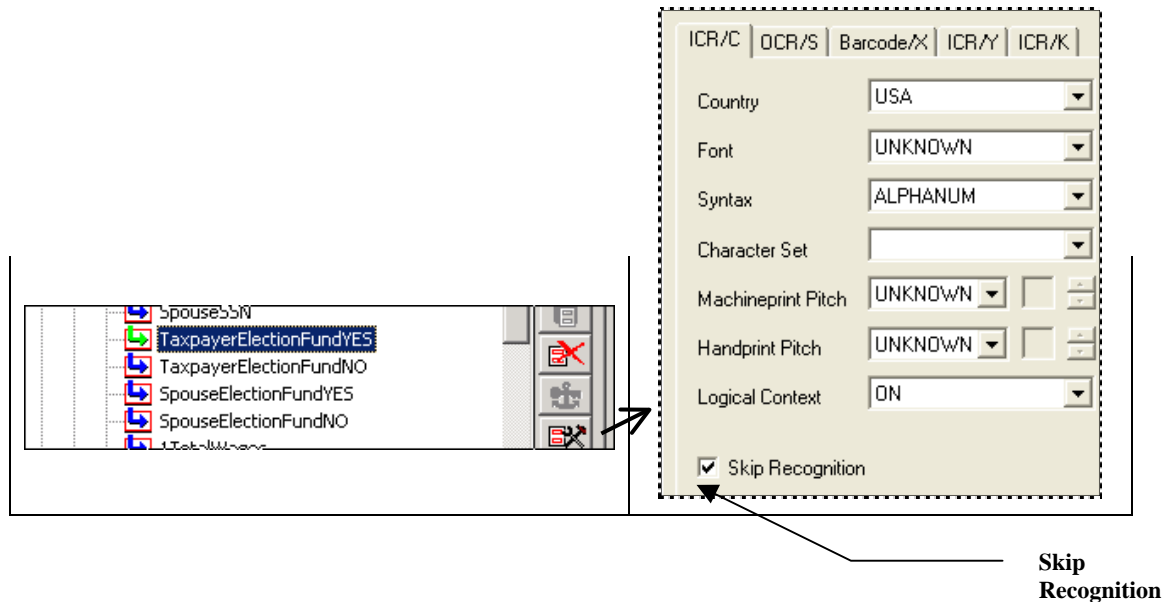
The *OCR/S* tab contains settings for a second Recognition engine. This engine is ideal for fields filled with typed values or check boxes (see the examples below).

Here's an example of *zoned* fields that use settings of the *OCR/S* tab. Each is a check box on the 1040EZ fingerprint:



1040EZ Application – Fingerprint  
Zoned OMR Objects

When you highlight one of these fields and click on the **Recognition Options Setup Dialog** icon on this display's right edge, the most recently opened tab still opens first. Note, however, that the tab's **Skip Recognition** option has been selected:



When you move to the *OCR/S* tab, the *default* settings for a *zoned* field look like those in the first illustration on the next page. Note that the settings in the *OMR* area on the right have been grayed-out and are unavailable.

In the second example, however, the field's **Filling Type** is *Optical Mark*, indicating that the field contains check boxes. Specifying *Optical Mark* automatically activates the settings of the **OMR** area.

## Recognition Options Setup Dialog

The dialog box shows the 'OCR/S' tab selected. On the left, there are five dropdown menus: Language (0 - English), Filling Type (0 - Default), Filter Type (0 - Default), Module (0 - Default), and Zone Type (49 - Default). On the right, the 'OMR' section has a 'Multi Punch' checkbox (unchecked), a 'Multi Separator' text field, a 'Length' spinner (0), a 'Frame' dropdown (Auto), a 'Sensitivity' dropdown (Normal), and a 'Dictionary' dropdown. Below these are 'Manage Dictionary' and 'Reset to defaults' buttons. At the bottom left is a 'Skip Recognition' checkbox (unchecked).

**Recognition Options Setup dialog – OCR/S tab  
Default Settings**

The dialog box shows the 'OCR/S' tab selected. On the left, the dropdown menus are: Language (0 - English), Filling Type (4 - Optical mark), Filter Type (0 - Default), Module (5 - Optical mark), and Zone Type (49 - Default). On the right, the 'OMR' section has a 'Multi Punch' checkbox (unchecked), a 'Multi Separator' text field, a 'Length' spinner (0), a 'Frame' dropdown (Auto), a 'Sensitivity' dropdown (Normal), and a 'Dictionary' dropdown. Below these are 'Manage Dictionary' and 'Reset to defaults' buttons. At the bottom left is a 'Skip Recognition' checkbox (unchecked).

**Recognition Options Setup dialog – OCR/S tab  
Optical Mark (OMR) Settings**

**OCR/S Tab – Standard Settings**

The table below describes the standard settings on the left side of this tab. Page 30 describes the **OMR** settings.

Setting	Options	Description
<b>Language</b>	0-English, 1-German, 2-French, 3-Dutch, etc.	The language of the values in the <i>zoned</i> field or block.  This is a list of 114 languages, numbered 0-113.  <b>Default:</b> English
<b>Filling Type</b>	<i>Options are listed below.</i>	The way in which the field on the original form is filled in.  <b>Default:</b> 0, indicating <i>No Specification</i> .
	0 - Default	No specification.
	1 - Omnifont	Multiple fonts.
	2 - Draftdot9	9-pin draft dot-matrix text
	3 – BarCode	1D barcodes.
	4 – OpticalMark	Check marks.
	5 - Handprint	Hand-printed values
	6 – Braille	Braille values.
	7 – DraftDot24	24-pin draft dot-matrix
	8 – OCR-A	OCR-A character set
	9 – OCR-B	OCR-B character set
	10 - MagneticInk	MICR-encoded characters
	11 – BarCode 2D	2D barcodes.
	12 – Dot-Digit	
	13 – Dash-Digit	
	14 – No Recognition	The Recognition engine itself decides on the font.

Recognition Options Setup Dialog – OCR/S Tab: Standard (continued)

Setting	Options	Description
<b>Filter Type</b>	<i>Options are listed below.</i>	Specifications that narrow the scope of your <b>Recognition Language</b> selection (above). <i>0-Default</i> is the <b>default</b> Filter Type.
	0 – Default	No specification.
	1 – Numeric	Numeric only.
	2 – UpperCase	Upper case letters.
	4 – LowerCase	Lower case letters.
	8 – Punctuation	Punctuation.
	16 – Miscellaneous	Characters other than numbers and letters – typically, mathematical symbols.
	32 – FilterPlus	<i>FilterPlus</i> techniques.
	31 – All(NoFilter)	Accepts all numbers and characters of the language.
	6 – Alpha	Alphabetic only.
	33 – Numeric & FilterPlus	<i>FilterPlus</i> techniques with numeric filters.
<b>Recognition Module</b>	<i>Options are below.</i>	The designation of a Recognition module that coordinates with your choice of a <b>Filling Type</b> and <b>Filter Type</b> (if any). <i>0-Default</i> is the <b>default</b> specification.
	0 – Default	No specification.
	1 – M/TEXT omnifont	Machine-printed text, multiple fonts.
	2 – Multilingual MOR omnifont	Machine-printed text, multiple languages, multiple fonts.
	3 – DOT 9-pin draft dot-matrix	9-pin dot-matrix text, draft-quality.
	4 – Barcode	1D barcodes ( <i>not available</i> )
	5 – Optical mark	Check box entries (or lack of entries)
	6 – Handprinted numeral	Hand-printed, numeric
	7 – Third-party RER Recognition	Hand-printed, alphanumeric ( <i>not available</i> )
	8 – BRA Braille	Braille

Recognition Options Setup Dialog – OCR/S Tab: Standard (continued)

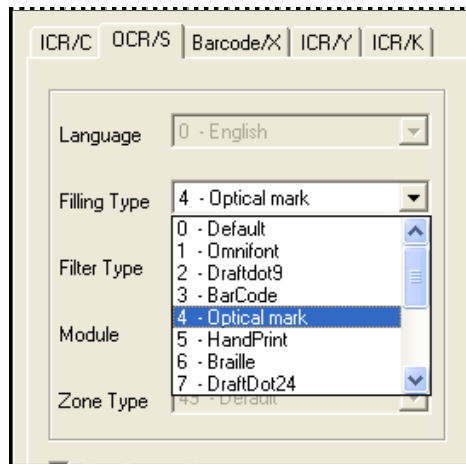
Setting	Options	Description
<b>Recognition Module</b> (continued)	9 – MAT Matrix	Matrix-matching
	10 – Third-party Seaport barcode	<i>Not available.</i>
	11 – RM Plus	<i>Not available.</i>
<b>Zone Type</b>	<i>Options are below.</i>	The way in which data is presented in the <b>zoned</b> field or block.
	49 - Default	No specified format. <i>0-Default</i> is the <b>default</b> specification.
	116 - Table	Tabular – rows and columns.
	103 - Graphic	Image
	104 - Column	Single column with one or more cells.
	72 - Header	Field with introductory data.
	70 - Footer	Field with summary data.
	99 - Caption	Built-in caption.
	67 - Title	A static value serving as a title.
	49 - Other	Alternative presentations.

## Recognition Options Setup Dialog

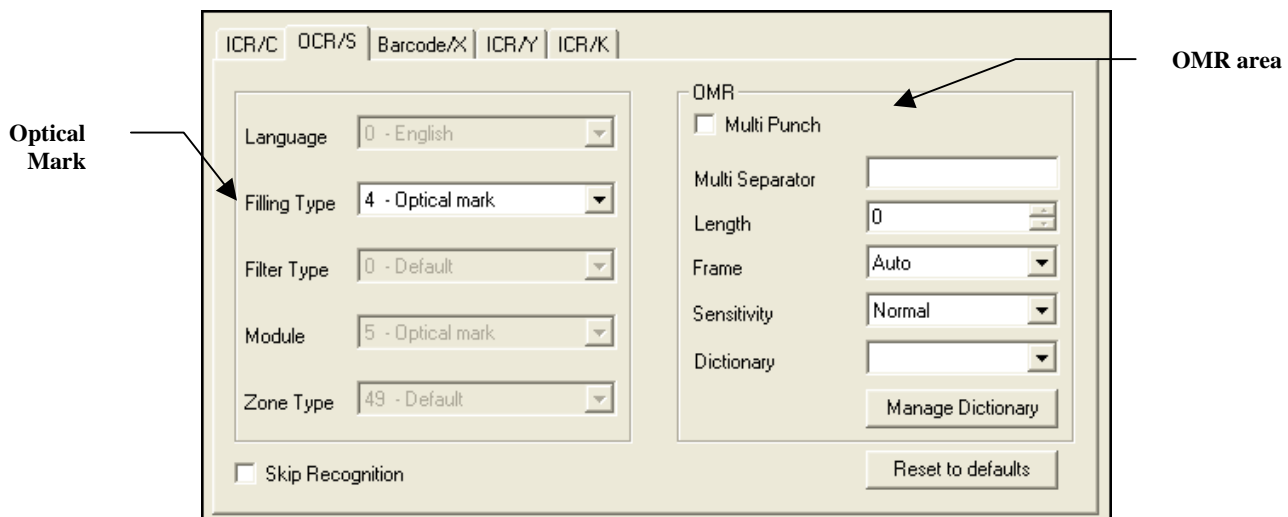
### OCR/S Tab – OMR Settings

If a *zoned* field features check boxes, you can use settings in the **OMR** area of the *OCR/S* tab to assign Optical Mark Recognition (OMR) properties to the field itself and to indicate the nature of the check boxes' values.

- ☛ Selecting *4-Optical Mark* as the field's **Filling Type** grays-out the remaining standard settings but activates specifications in the tab's **OMR** area:



OCR/S tab - Filling Type

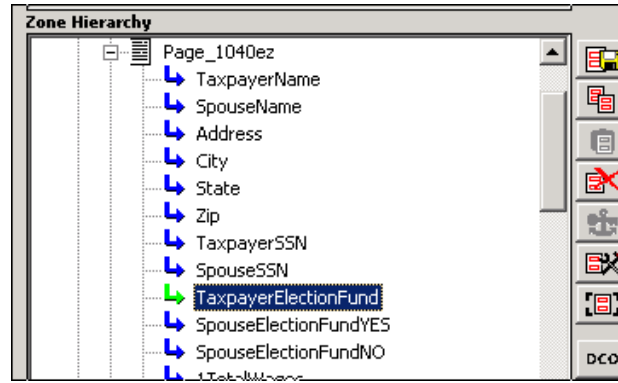


Options Setup dialog - OCR/S tab  
Active OMR Settings

This area includes the following (in order of priority):

**Length:** The number you enter here indicates how many selection options are part of the *zoned* OMR field. These options might be check boxes, ovals or other shapes on the original form..

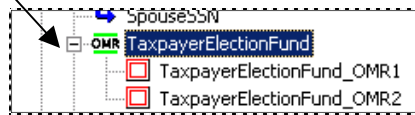
- ✓ As soon you specify a **Length**, the **Zone Hierarchy** in the *Rule Manager Window's Fingerprint & Rules* panel automatically adds that number of **child Field** objects to the zoned **parent** field. In this example, the 1040EZ Administrator opted for a single *TaxpayerElectionFund* **Field** object with sub-fields for the two check boxes on the printed form: *Yes* and *No*.



OMR field

Zone Hierarchy – 1040EZ Rule Manager

When the Administrator entered “2” as the field’s **Length**, the **Zone Hierarchy** recorded the change:



**MultiPunch:** Selecting this option means that the OMR field can have multiple values...that a form-filler can check more than one check box, for example.

**Multi Separator:** This is the punctuation (a comma or slash, for example) that will be used to separate an OMR field’s multiple values when they are exported.

**Frame:** This setting’s three values – *Auto*, *Yes* and *No* – indicate whether or not visible “frames” will surround the field’s OMR choices on a processed page’s image. Select *Auto* if a frame might or might not be present, or might or might not be clear – this is the default value. **Important!** A frame printed in dropout ink may well be invisible in the scanned image.

**Sensitivity:** The value you assign to this setting specifies the required clarity of the user-entered check in the scanned page. *Normal* limits recognition to obvious checks in clearly printed pages. Declining values from *Low* to *Lowest* indicate less and less required clarity: *Lowest*, for example, will allow questionable checks in speckled or poorly printed documents to be processed successfully. *Normal* is the default value.

**Dictionary button:** Opens the *Dictionaries* dialog. You can use this dialog to define a new dictionary of acceptable values for the OMR field, **or** to assign an existing dictionary. (For the *TaxpayerElectionFund* field, the 1040EZ Administrator set up a very simple dictionary with three values: *None*, *Yes* and *No*. These values will appear

## Recognition Options Setup Dialog

in a drop-down list in the application's *Data Entry* panel during the verification of *recognized* data.)

In the example below, the pre-configured *Survey* application uses multiple dictionaries. For *Dict1*, the “words” will appear in the field's drop-down list in the application's *Data Entry* panel; the equivalent “values” will be exported. The **values** can be *string* or *numeric* equivalents and – if applicable – separated by punctuation you enter in the **Multi Separator** field.

The image shows the 'Recognition Options Setup Dialog' with the 'OCR/S' tab selected. The 'OMR' section is active, showing settings for 'Multi Punch' (unchecked), 'Multi Separator' (empty), 'Length' (6), 'Frame' (Auto), 'Sensitivity' (Normal), and 'Dictionary' (Dict1). A label 'Dictionary' with an arrow points to the 'Dictionary' dropdown menu. Below the dialog, the text 'Recognition Options Setup Dialog – OCR/S tab OMR Settings' is centered, with an arrow pointing down to the 'Dictionaries dialog'.

The 'Dictionaries dialog' window shows a table with columns for 'Dictionary Name', 'Word', and 'Value'. The 'Dictionary Name' column contains 'Dict1'. The 'Word' column contains 'Excellent', 'Very Good', 'Good', 'Fair', 'Poor', and 'Don't Know'. The 'Value' column contains 'Excellent', 'Very Good', 'Good', 'Fair', 'Poor', and 'Don't Know'. There are 'Add', 'Remove', and 'Reset' buttons.

Dictionary Name	Word	Value
Dict1	Excellent	Excellent
	Very Good	Very Good
	Good	Good
	Fair	Fair
	Poor	Poor
	Don't Know	Don't Know

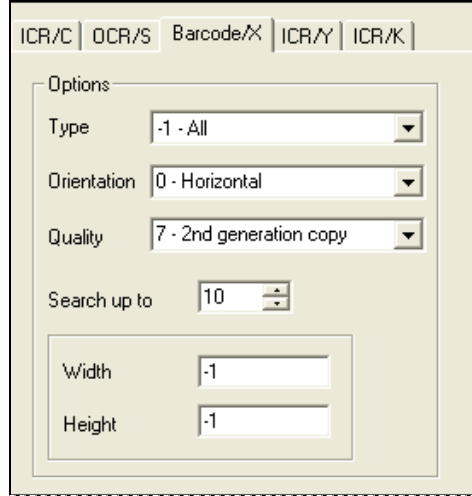
**Dictionaries dialog**

- ✓ Specifications that add OMR children to a **Field** object result in changes to the application's Document Hierarchy, and are immediately recorded in the application's *Document Hierarchy Setup* window. For a complete explanation, and instructions that show you how to define a dictionary, see Chapter 4 of the *Guide to Taskmaster Rules*.



**Recognition Options Setup Dialog - Barcode/X Tab**

If the *zoned Field* object contains barcode values, you can use this tab to assign recognition parameters:



**Recognition Options Setup Dialog – Barcode/X tab**

The table below describes the tab’s settings:

Setting	Option	Description
<b>Type</b>	<i>Options are below.</i>	Designates the nature of the barcodes that can appear in this field.
	-1 – All	The field will accept barcodes of these types: 3 of 9, CodaBar and 2 of 5.  <i>-1-All</i> is the <b>default</b> setting. However, this setting should be used <b>only</b> if the barcode type(s) are not known in advance because <i>All</i> may lead to false reads.
	0 – Code 3 of 9	A variable length, alphanumeric symbology that is the de facto standard outside retail stores, and supports optional checking.  Each character must start and end with an asterisk (*). A character consists of five bars and four spaces that must be at least .25 inches tall.
	1 - CODABAR	A self-checking symbology with 16 characters in its set: the numbers 0-9, and the \$ ; / . + - characters.

Recognition Options Setup Dialog – Barcode/X Tab (continued)

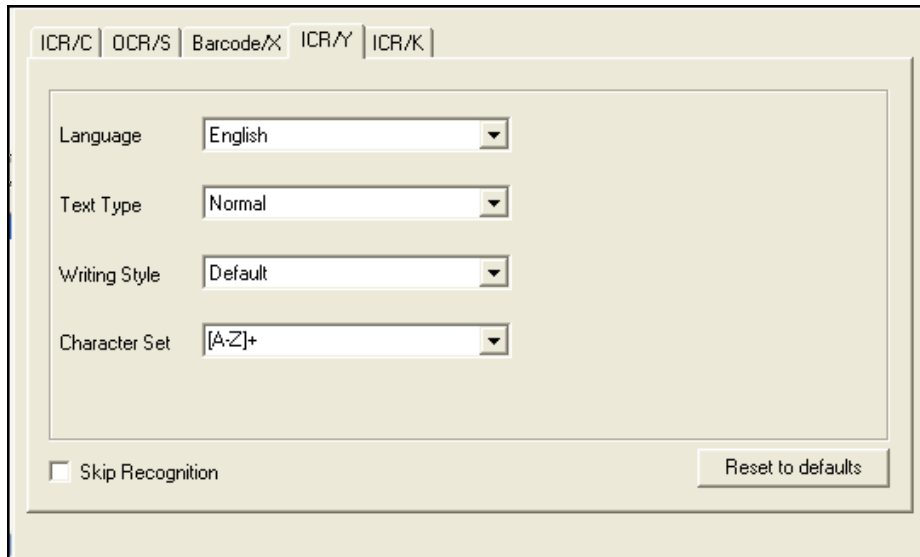
Setting	Option	Description
Type (continued)	2 – Interleaved 2 of 5	A continuous, self-checking numeric symbology.  Each character has five bars and five spaces – two wide and three narrow in both cases. A character encodes two digits.
	3 – Airline 2 of 5	Symbology used with airline tickets.
	4 – Code 128	A high-density, alphanumeric symbology.  It is a variable length, continuous code with multiple element widths and 106 different characters – each with three possible meanings.
	5 – Code 93	A variable length, continuous symbology employing four element widths and 47 characters in its character set.
	6 – Code 2 of 5	
	7 – UPC-A	A fixed-length, numeric, continuous Universal Product Code (UPC) symbology that encodes 12 digits.
	8 – UPC-E	A fixed-length, numeric, continuous UPC symbology that encodes 6 digits.
	9 – EAN-13	A European Numbering System (EAN) symbology that encodes 13 digits.
	10 – EAN-8	An EAN symbology with a left-hand guard pattern, four odd parity digits, a center guard pattern, four even parity digits, and a right-hand guard pattern.
	11 – PostNet	A clocking symbology that modulates the height of constant width bars.
	12 – PDF-417-2D Code (S32 only)	<i>Not currently supported – please contact Datacap for more information.</i>
	13 – Patch Code (S32 only)	A pattern of alternating Black and White bars printed on the leading edge of a page.  There are six different “types” or “symbols: 1, 2, 3, 4, T, 6. These are generally used to separate documents or to identify a document’s cover page. The value that is read is the <b>patch type</b> .

Recognition Options Setup Dialog – Barcode/X Tab (continued)

Setting	Option	Description
Type (continued)	14 – UCC Code 128 (S32 only)	One of six subsets of Code 128, typically used for carton tracking (see <a href="http://www.vc_council.org">www.vc_council.org</a> ).
Orientation	<i>Options are below</i>	The orientation of the expected barcode's symbols within the field.
	0 - Horizontal	A “picket fence” pattern of vertical bars. The pattern is wider than it is tall, and is the typical barcode pattern.
	1 - Vertical	A rotated “ladder” pattern of horizontal bars. The pattern is taller than it is wide.
	2 – Horizontal and Vertical	A pattern that mixes horizontal and vertical symbols.
	3 – Horizontal with skew	Horizontal symbols that may be skewed.
	4 – Vertical with skew	Vertical symbols that may be skewed.
	5 – Vertical and Horizontal with skew	Either vertical or horizontal symbols, with or without skew.
Quality	<i>Options are below</i>	The expected quality of the barcodes in this field or block.
	1 – Fax input	Lowest quality images.
	4 – Microfilm scan	Medium quality images.
	7 – 2 <sup>nd</sup> generation copy	Higher quality images.
	10 – First generation print	Highest quality images.
Search up to...	(number)	The maximum number of barcodes to be read in the <i>zoned</i> field or block.
Width/Height	(inches)	The width or height of a barcode in the <i>zoned</i> field, measured in inches (“).  -I indicates that the Width or Height will be registered automatically. Other values typically apply to <i>Code 3 of 9</i> types, where a character <i>must</i> be at least .25” high

### Recognition Options Setup Dialog - ICR/Y Tab

The combination of parameters in the *ICR/Y* tab provide an *Abbyy* Recognition engine with criteria it can use to help recognize data throughout the page, or the value in a single zoned field. Often, this criteria filters unacceptable data: a field's **Character Set** entry, for example, can ensure that values that do not adhere to the specification are ignored.

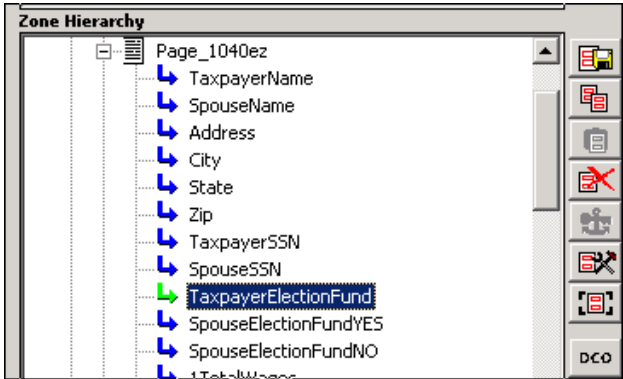


The screenshot shows a dialog box with the following elements:

- Tabbed interface with tabs: ICR/C, OCR/S, Barcode/X, ICR/Y (selected), ICR/K.
- Language: English
- Text Type: Normal
- Writing Style: Default
- Character Set: [A-Z]+
- Checkbox:  Skip Recognition
- Button: Reset to defaults

**Recognition Options Setup dialog – ICR/Y tab**

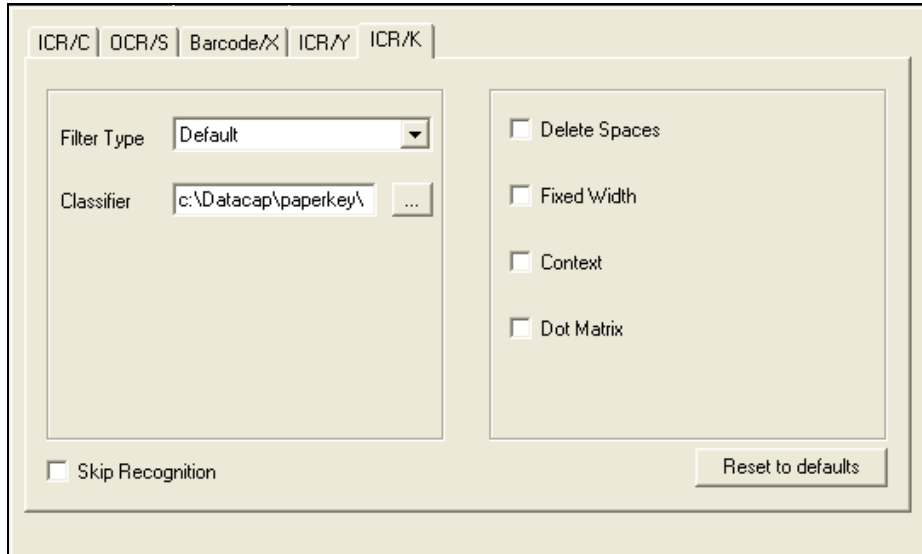
- ✓ **Important!** The Abbyy Recognition engine, the settings in this tab, and accompanying documentation are available only by special arrangement with Datacap.



Zone Hierarchy – 1040EZ Rule Manager

### Recognition Options Setup Dialog - ICR/K Tab

Settings in the *ICR/K* tab of the *Recognition Options Setup* dialog (pictured below) guide the Kadmos ICR recognition engine as it recognizes values in zoned fields of a source page – or text on a page (full-page recognition).



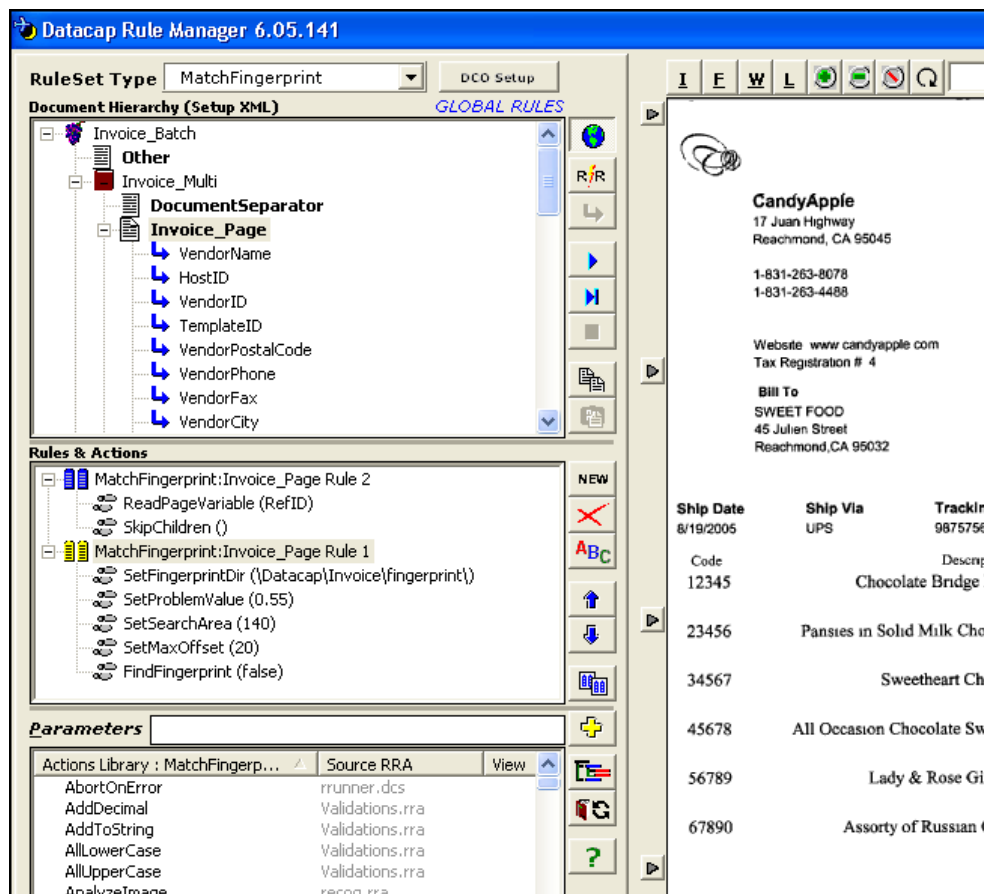
**Recognition Options Setup dialog – ICR/Y tab**

- ✓ **Important!** The Kadmos recognition engine, the settings in this tab, and accompanying documentation are available only by special arrangement with Datacap.

## Elements of the Rules Panel

This *Rule Manager Window's Rules* panel is the flip-side of the *Fingerprints & Zones* panel: the image it displays, and its settings, are those of a fingerprint you've selected in the window's *Fingerprints & Zones* panel – even if you choose the “global” fingerprint (*Fingerprint #555*).

Like the *Fingerprints & Zones* panel, the *Rules* panel has an **Image Area** and a **Data Area**. The **Image Area** on the right displays the fingerprint, or is empty if you're working with the Global Fingerprint. The **Data Area** on the left assigns **rules** that locate fields on a current page, retrieve and validate their data; and distribute the processed data to Export files and databases. The following pages identifies the tools and procedures you'll use to define new rules.



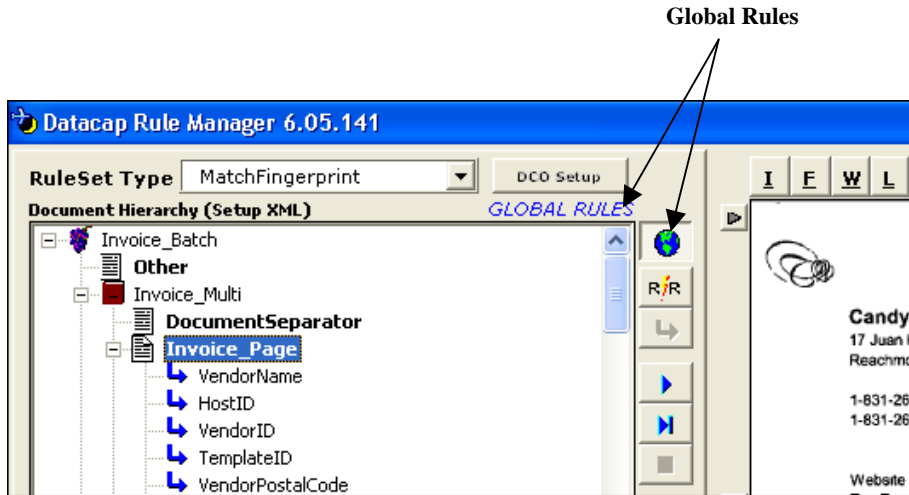
Rule Manager Window – Rules panel

- ✓ **Remember!** You can use the *Advanced Settings* of the *Rule Manager Setup* dialog to specify which panel is to appear by default when you open the *Rule Manager Window*. For details, see Chapter 2.

## Image Area: Fingerprints, Lines and Words

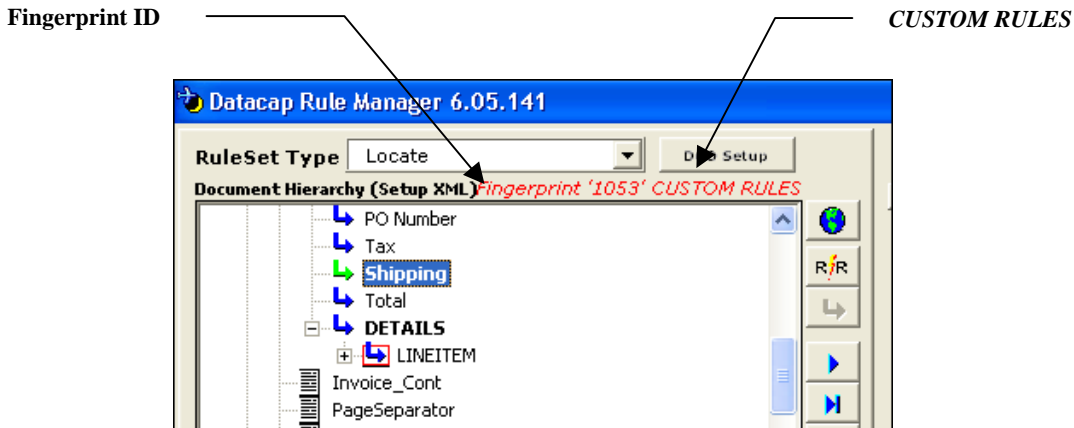
You use the *Rules* panel to configure and test rules and actions for any object in the Document Hierarchy.

- ✓ When you highlight a Fingerprint ID in the **Fingerprints List** of the *Fingerprints & Zones* panel and click on the *Rules* tab at the bottom of the **Rule Manager Window**, the *Rules* panel opens with a display of the complete **Document Hierarchy** in its upper display. By default, the **Global Rules** icon on the display's right edge is depressed; **GLOBAL RULES** is announced; and the panel lists the **Global Rules** that have been defined and bound to objects of the Document Hierarchy:



Rule Manager Window – Rules panel  
Invoice Application

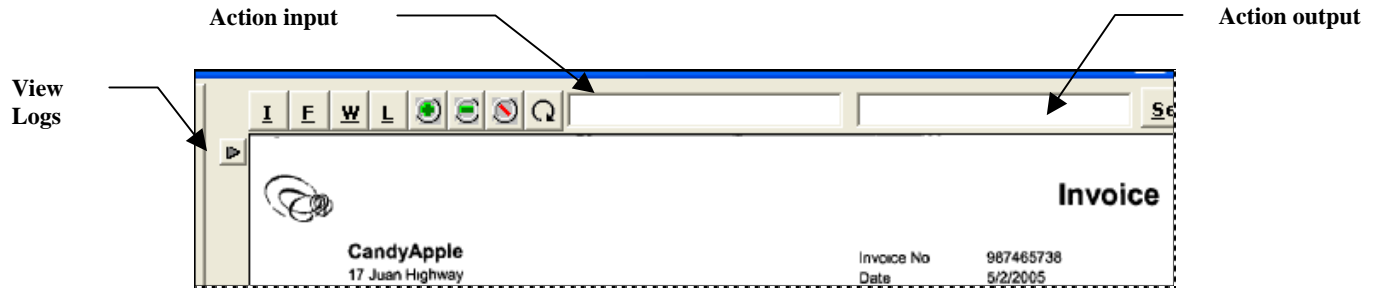
If you toggle the **Global Rules** icon, the panel displays the fingerprint's Fingerprint ID, and the panel's **Data Area** provides complete information about any *custom* rules you have defined for this fingerprint (see the next page.)



Rule Manager Window – Rules panel



The Image Management icons at the top of the **Image Area** duplicate the functions of identical icons in the *Fingerprints & Zones* panel (Page 4). *However*, there are important additions to the toolbar of this display of the *Rules* panel:



Clicking on **F** highlights fields in the fingerprint.

Clicking on **W** surrounds each **word** in the fingerprint with a green border.

Clicking on **L** surrounds each **line** on the fingerprint with a red border.

These icons, individually and together, *map* the fingerprint. You'll use the map when you formulate **Locate** rules.

**Action Input and Action Output.** A rule consists of actions. When you set up a rule and test its performance, these fields display the value an action is to process – its **input** – and the value the action produces – its **output**.

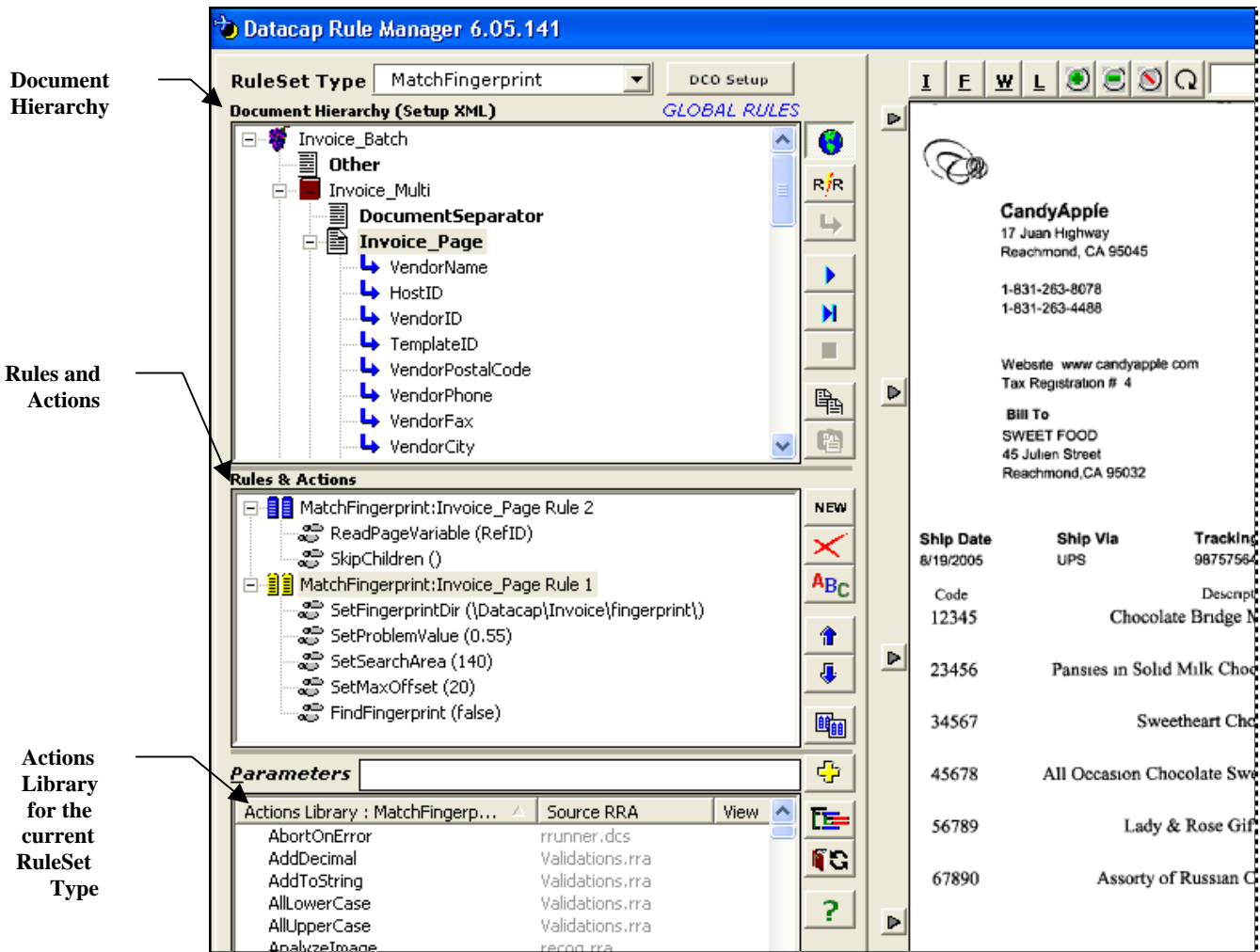
**View Log.** *Rule Manager* can display a *Rules Log* showing its progress when rules are tested.

## Data Area: Rules and Actions

The **Data Area** on the left side of the *Rules* panel has three displays:

- ◆ The **Document Hierarchy** display lists the objects of your application's Document Hierarchy. When you select a field (or other object) from this list, the **Rules** display displays existing rules that apply to the object.
- ◆ The **Rules & Actions** display presents the rules that apply to an object and defines new rules.
- ◆ The **Actions Library** display lists all actions available to rules of a particular RuleSet Type – a **Recognition** RuleSet Type or **Locate** RuleSet Type, for example. When you define a new rule, you can include actions of any kind *as long as* they are members of the RuleSet Type's Actions Library.

This area includes a **RuleSet Type** drop-down list at the top, and a DCO Setup button.

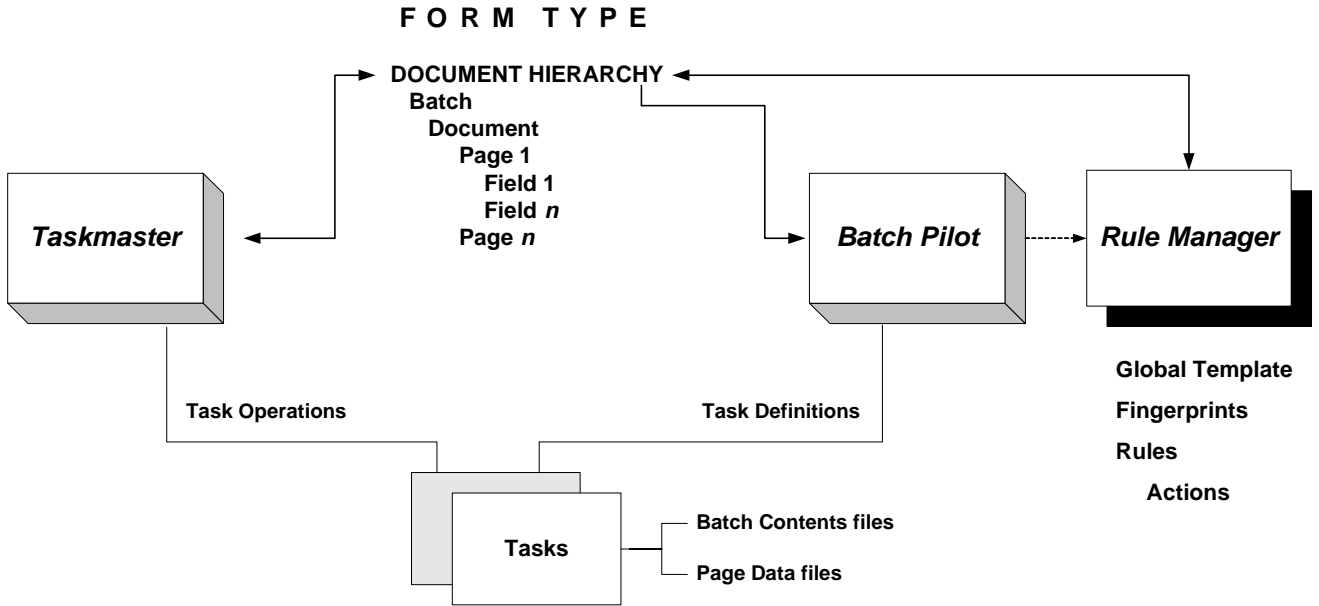


### DCO Setup Button

*Rule Manager* strictly limits access to the application's Document Hierarchy:

Rules are the attributes of the Document Hierarchy. Rules can be bound to object at any level of the Document Hierarchy, from **Batch** to **Field**.

The *Rules* panel's DCO Setup button opens the *Document Hierarchy Setup* window. You can also gain entry to the *Document Hierarchy Setup* window through the *Taskmaster Administrator's Workflow* tab.

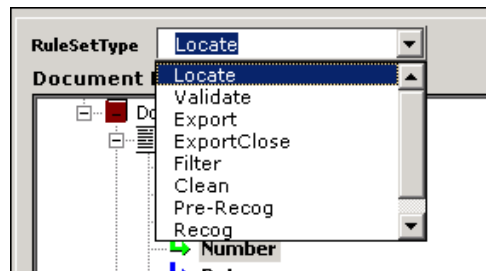


- ✓ For procedures involving rule development and testing, the **Document Hierarchy** display at the top of the *Rules* panel gives you the ability to link an object of the hierarchy directly to a new rule – or to check the connection of an existing rule to the object it affects.

### RuleSet Types

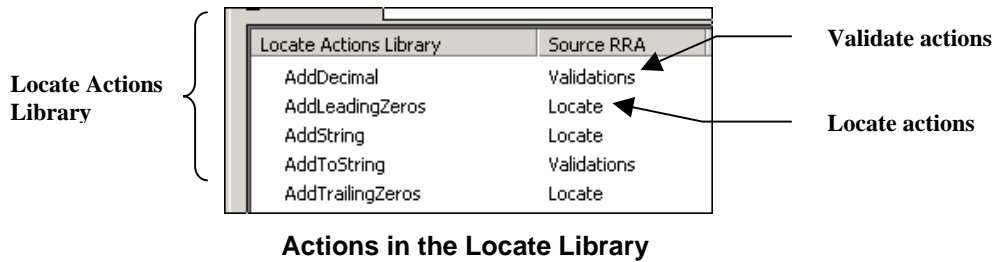
The drop-down list at the top of the *Rules* panel identifies rule categories...**RuleSet Types:**

- Each rule belongs to a particular category - to a RuleSet Type such as **Recog** or **Validate**.
- A rule is composed of actions. Although an action belongs to one action category, a RuleSet Type can include actions from multiple categories.
- You can define additional RuleSet Types, giving them any name you want, and designate the actions they can contain (see Chapter 5 of the *Guide to Taskmaster Rules*.)



Default RuleSet Types

When you select a RuleSet Type from the list, the **Actions** display at the bottom of the tab shows all actions which are members of that RuleSet Type's **Actions Library**:








**Actions in the Locate Library**




### Document Hierarchy Display

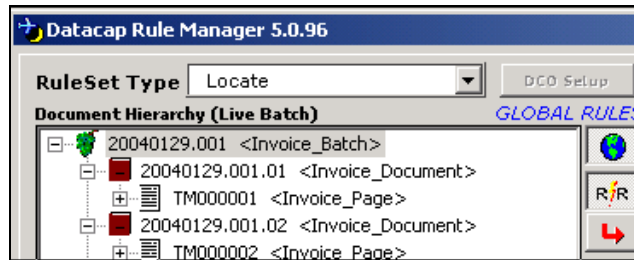
The **Document Hierarchy** display of the *Rules* panel lists the objects of the application's Document Hierarchy, and highlights in **bold** type those objects for which rules of the RuleSet Type you've selected have been assembled and assigned.

The elements of the **Document Hierarchy** display include:

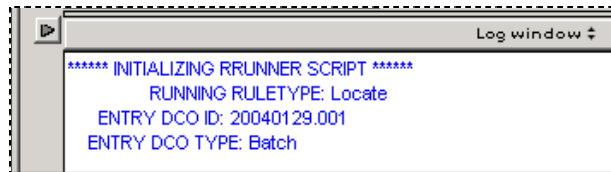
Element	Icon	Description
<i>View or Add Global Rules</i>		A toggle switch which focuses the <i>Rules</i> panel on a fingerprint's <b>Global Rules</b> ( <i>In</i> ) or fingerprint-specific <b>custom rules</b> ( <i>Out</i> ).
<i>Load Live Batch for Testing</i>		A toggle switch you can use to access the <i>Select Batch to Test</i> dialog (illustrated on the next page.)  When you are testing the ability of new or existing <b>RuleSet Types</b> to work with objects of your Document Hierarchy, you can use this icon to retrieve a <i>source</i> page from a sample batch. This step withdraws the Document Hierarchy and it remains unavailable until the test is complete and you return the switch to an <i>Out</i> position.
<i>Conduct Active Test</i>		Tests rules and actions applied to objects of the Document Hierarchy taken from the live batch you select using the icon above.
<i>Run All Rules at Once</i>		Using the current fingerprint, conducts a test of <b>all</b> actions in <b>all</b> rules associated with the currently selected object in the Document Hierarchy.  The test's results will appear in the <b>Image Area's Rules Log</b> .
<i>Step through and Run each Rule</i>		Conducts an <b>action-by-action</b> test of a rule assigned to a particular object of the Document Hierarchy.

Document Hierarchy Display (continued)

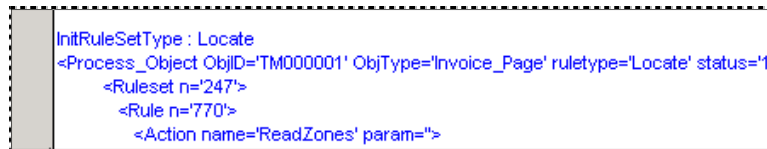
Element	Icon	Description
<i>Pause Test</i>		Terminates the test of a rule and its actions if there are no more rules to run.  <b>Warning!</b> When you click on one of the two icons above to start a test, <i>Rule Manager</i> will not return to its regular state until you press this icon.
<i>Copy RuleSet</i>		Copies the rule associated with the object you've highlighted in the Document Hierarchy.
<i>Paste RuleSet</i>		Pastes the rule you've copied into the object you've highlighted in the Document Hierarchy..



**Objects of a “Live” Batch – Batch, Document and Page Invoice Application**



**Rules Log – Live Batch Test  
Batch Object, Locate RuleSet Type**



**Rules Log – Live Batch Test  
Page Object, Locate RuleSet Type**

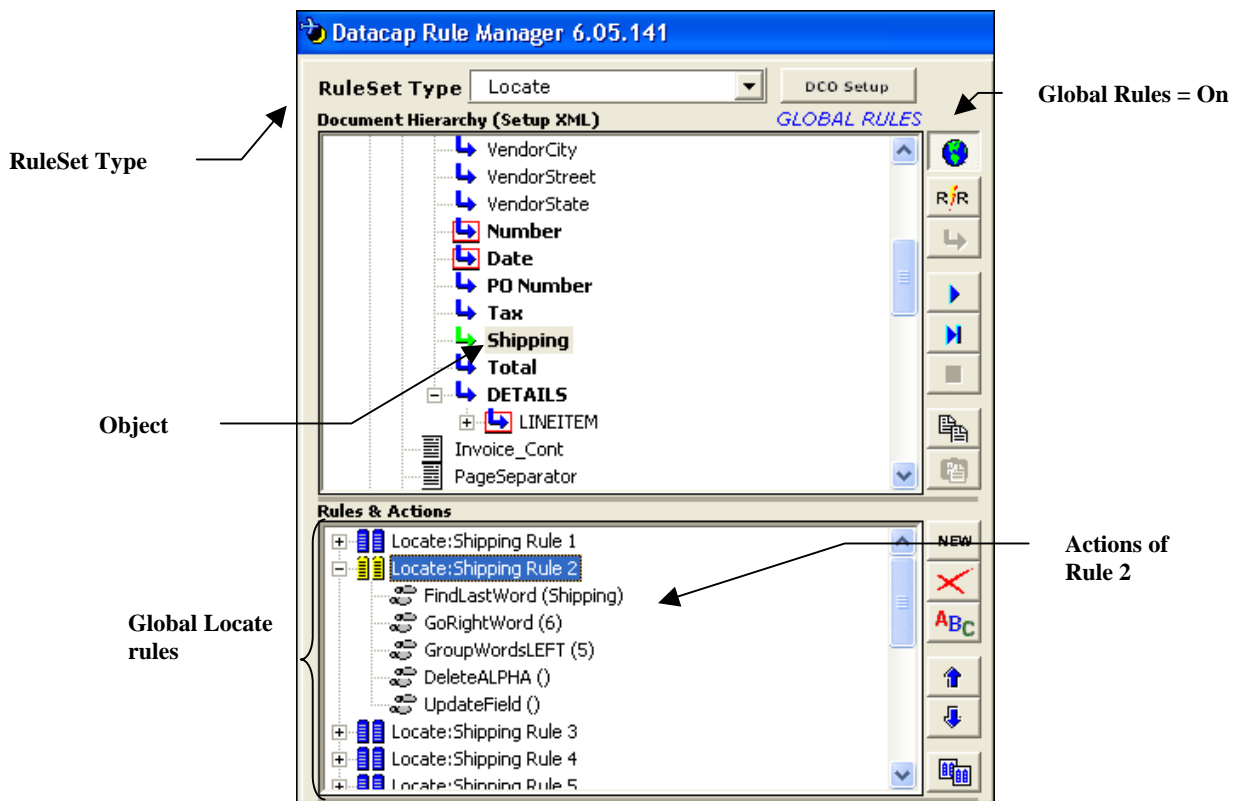
✓ Chapter 5 of the *Guide to Taskmaster Rules* explains RuleSet testing procedures.

### Rules Display

This display is directly below the **Document Hierarchy** display. It lists

- ◆ Rules which...
- ◆ Belong to the category you've selected from the **RuleSet Type** drop-down list, and...
- ◆ “Bind” to the object you've highlighted in the **Document Hierarchy** display.

In this example, the **Rules** display features the global Locate rules assigned to the fingerprint's **Date** field. During processing, the RuleRunner task will employ one rule after another until it finds the field *and* the Date information the field holds.









Rule Manager Window – Rules panel

If you click on the + at the left edge of a Rule ID, the rule's actions appear below it. When you define a new rule *or* action, *Rule Manager* adds it to this display.

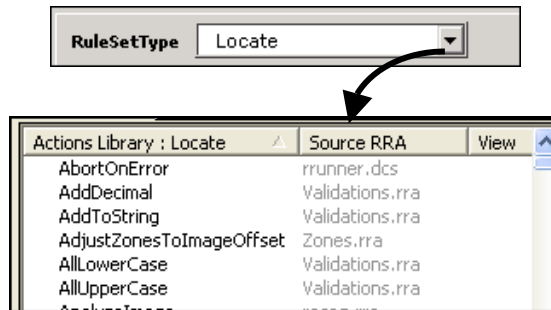
The table on the following page describes the features of the **Rules** display.

Rules Display

Element	Icon	Description
<i>Create a New Rule</i>		Creates a new rule.  The rule is just a placeholder until you add actions to it.
<i>Delete a Rule or Action</i>		Deletes a rule <b>and</b> all its actions, or an action you've highlighted.  When you attempt to delete a rule, <i>Rule Manager</i> issues an appropriate warning that asks if you really want to remove this rule, and explains the consequences of taking such a step.
<i>Rename the Selected Rule</i>		Re-names a rule.
<i>Move the Rule or Action up</i>		Moves a rule one position higher in the RuleSet for a particular object of the Document Hierarchy – and the rule will be applied one step sooner. Alternatively, this icon can move an action up within its rule.  <b>Important!</b> This step does <b>not</b> re-name the rule to indicate its new position. If appropriate, use the <b>Re-name</b> icon to establish titles that accurately reflect the RuleSet's processing order.
<i>Move the Rule or Action down</i>		Moves a rule or action one position below its current position but does not re-name it.
<i>Duplicate Selected Rule</i>		Copies a rule you've selected (and all its actions), and pastes the rule squarely at the bottom of the list, with an updated title to indicate its current position.

### Actions Display

This display lists actions in the Actions Library of the RuleSet Type you select from the drop-down list at the top of the *Rules* panel:

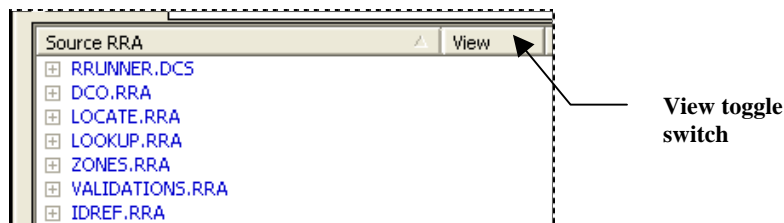


**Rule Manager Window – Rules panel**  
**Locate Actions Library**

- The **Locate RuleSet Type Actions Library** (as an example) assembles actions from *multiple* resource files (.rra):
  - ◆ **Locate** actions reside in the **Locate.rra** file. **Locate** rules depend on these actions to find fields and their data, and to update the Data file of each *source* page.
  - ◆ **Zone** actions transfer zone parameters from the fingerprint to the current page, and are used extensively to locate and process values in rows of Line Item Detail. These actions are in the **Zones,rra** file.

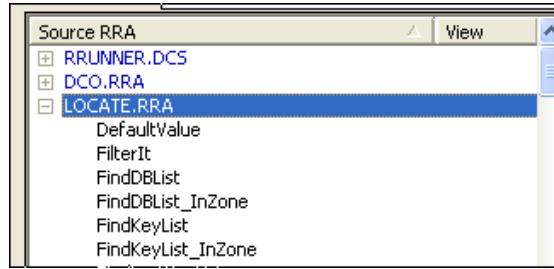
Rules consist of actions. When setting up a new rule – a **Locate** rule in this example- you can only select actions which belong to the Actions Library of the current RuleSet Type. (These are specified in the *RuleSet Setup* dialog.)

The presentation of the actions in a library depends on your use of the **View** toggle switch. The example above shows the default format. When you toggle the switch, Rule Manager displays the Actions files (.rra) that make up the library. Here are some of the files in the **Locate** Actions Library:



You can click on the + icon next to any title for a listing of all actions in that Actions file.





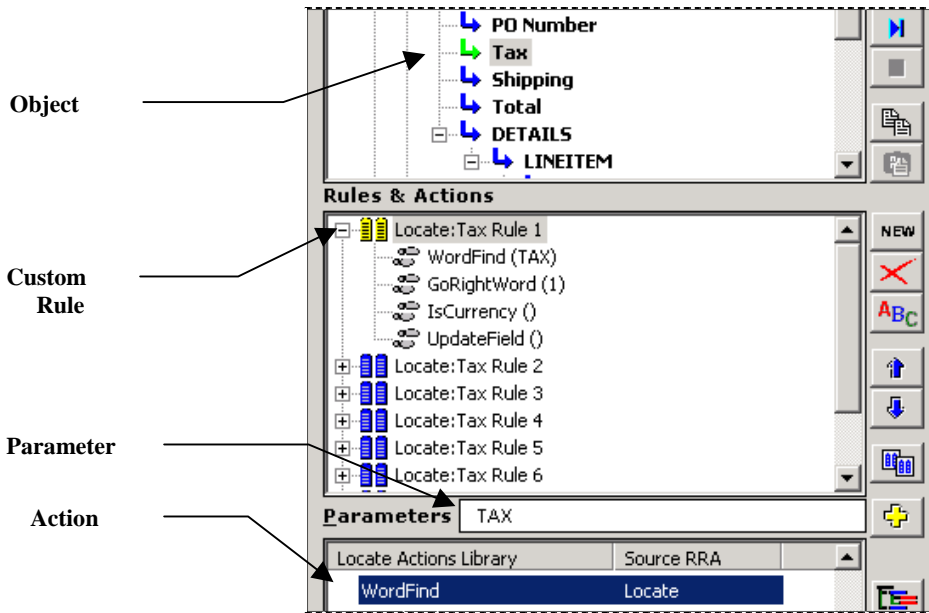
Locate Actions file – *partial listing*

✓ **Remember!** Chapter 4 lists and describes each action. Chapter 5 of the *Guide to Taskmaster Rules* examines all aspects of rule development and assignment.

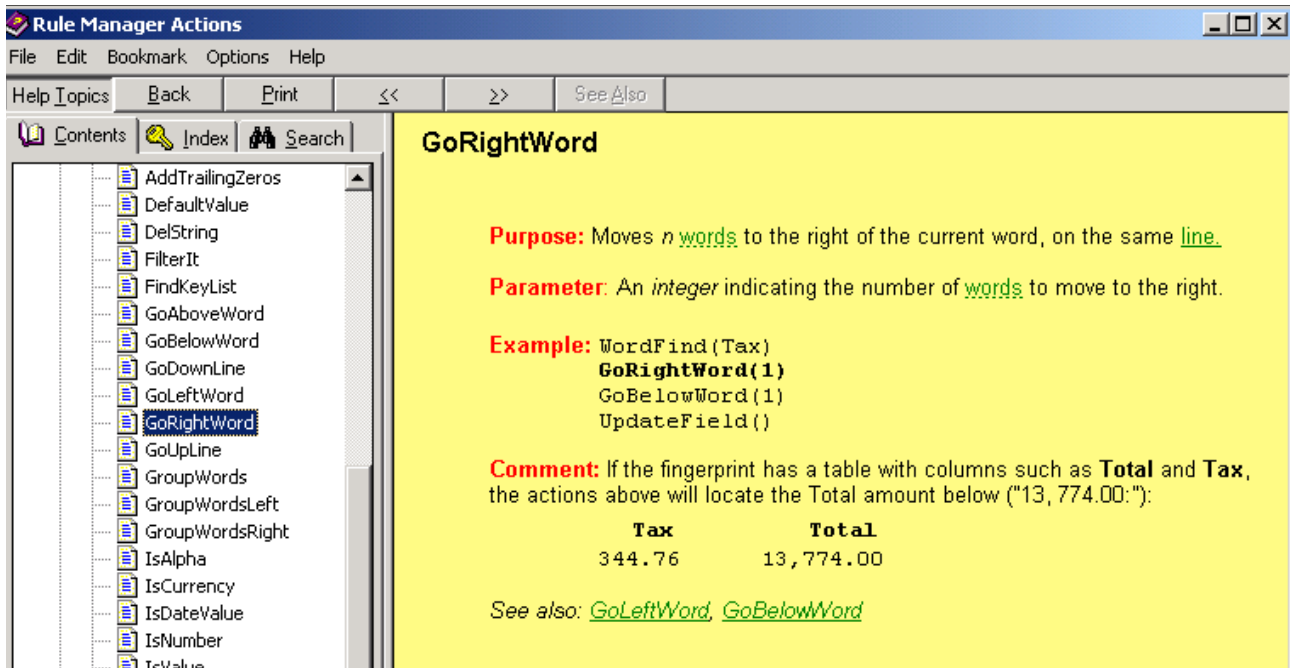
The other elements of the Actions display include:

Element	Icon	Description
<i>Add Selected Action from Library</i>		Adds a new action (with any parameters it requires) to a rule you've highlighted in the <b>Rules</b> display.
Parameters	<i>n/a</i>	Often, an action is incomplete until you supply it with at least one value to use when the action runs as part of the rule.  You'll enter the value (or values) in this field just before you add the action to the rule. If an action requires a parameter, <i>Rule Manager automatically</i> places your cursor in this field: the cursor blinks until you supply the parameter(s).  <b>Important!</b> The Actions Help file describes every action and the value(s) it requires, and show you how the action fits into a rule.
<i>Setup RuleSet Types or Library Files</i>		Accesses the <b>Ruleset Type Setup</b> dialog.  Settings and selections in this dialog establish new RuleSet Types.
<i>Refresh Library Scripts</i>		Updates the library listings for a RuleSet Type you've selected.
<i>Help with Actions</i>		Accesses <b>Actions Help</b> , with descriptions and examples of every action.

## Data Area: Rules and Actions



Rule Manager Window - Rules panel



Actions Help – GoRightWord action