
Fingerprints, Zones and Recognition Options

Chapter 4 shows you how to construct the **fingerprints** that are processing points-of-reference for most tasks.

This chapter also shows you how to establish a fingerprint's **zones**. These zones indicate where a task will find individual fields, and blocks of fields, on a *source* page it is processing.

The closing section examines recognition options you can assign to a particular **Field** object, using settings in the tabs of the *Recognition Options Setup* dialog.

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Be sure to have the *Rule Manager Reference* handy as you explore this chapter and Chapter 5. Both chapters explain techniques that rely on *Rule Manager* concepts and procedures, and on the tools and functions of the *Rule Manager Window*.

Introduction

A *Taskmaster* application processes entities represented by objects at various levels of a workflow's Document Hierarchy (Chapter 3), according to rules that are "bound" to these objects (Chapter 5).

This chapter is concerned with objects at two levels: **Page** and **Field**. More specifically, the chapter examines the *Rule Manager* techniques you can use to define the **fingerprints** that provide information about the location and nature of fields on a *source* page.

- ✓ A *source* page is a page with data that will be recognized, verified, validated and exported. A typical **document** has one *source* page – an IRS tax return, for example, or a health claim. Your documents might have two (or more!) *source* pages; the *Questionnaire_601* document of the fictional *MQSW* application described in previous chapters has a *Front* page and a *Back* page. Both pages contain user-entered data – and both are *source* pages.

The chart on the next page summarizes the role that fingerprints can play in a *Taskmaster* application. On the left, the Document Hierarchy designates a *source* page with three fields – *Field 1*, *Field 2*, and *Field 3*.

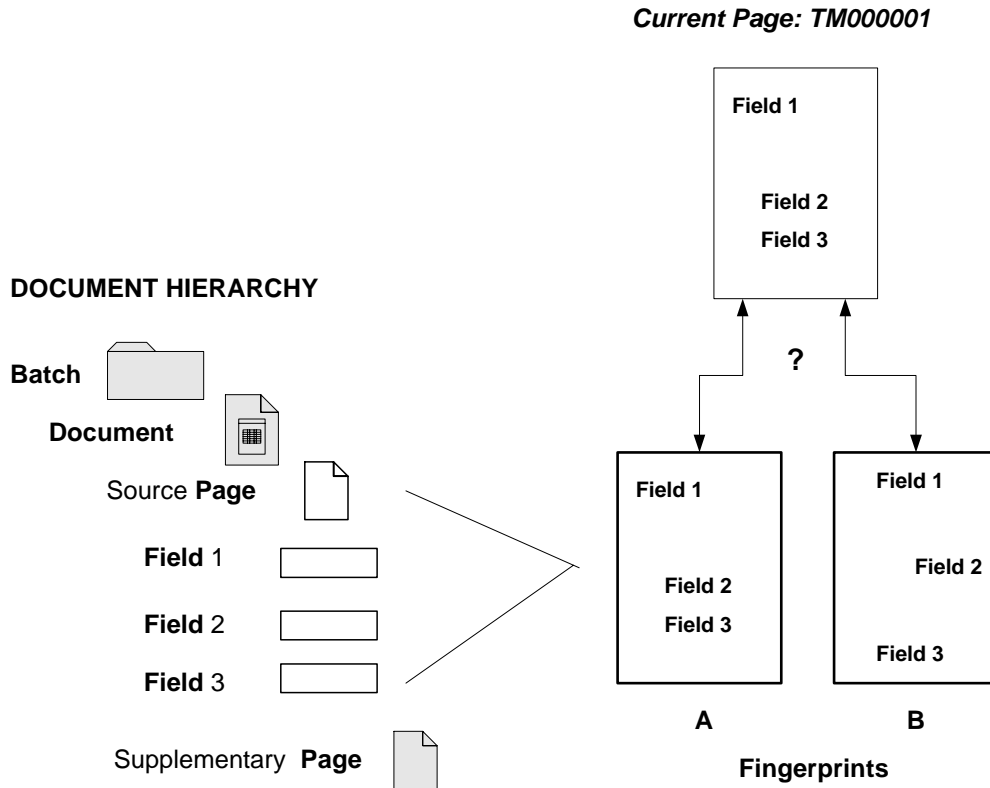
There are two fingerprints on the right - *A* and *B*. The fingerprints feature the same fields, but arrange them in distinctly different formats.

A **current page** is a copy of a *source* page that's actually being processed by a Recognition task early in the workflow. **Fingerprint matching** is one of this task's key responsibilities: is the current page an example of the fingerprint on the left (*A*)...or on the right (*B*)? If there is a match, the task will automatically ascribe the many properties of the fingerprint and its fields to the current page and its fields.

A fingerprint supplies specifications about field locations, data types, and recognition parameters. It is also the basis for the definition of **custom rules** that help distinguish one fingerprint from another.

- Applications such as the pre-configured *Taskmaster for Invoices* employ numerous fingerprints. Each fingerprint is another version of a standard business invoice that a company or organization receives from its suppliers. Although the nature of the data on all invoices is pretty much the same, the presentation of the data differs significantly from one form to the next. Differences can occur even among forms submitted by branches and divisions of the same company.

As a result, a typical *Invoices* application maintains a **fingerprint inventory** with templates organized by **fingerprint class** – in this case, according to vendor. If a vendor submits three different invoices, three fingerprints belong to that vendor's fingerprint class.

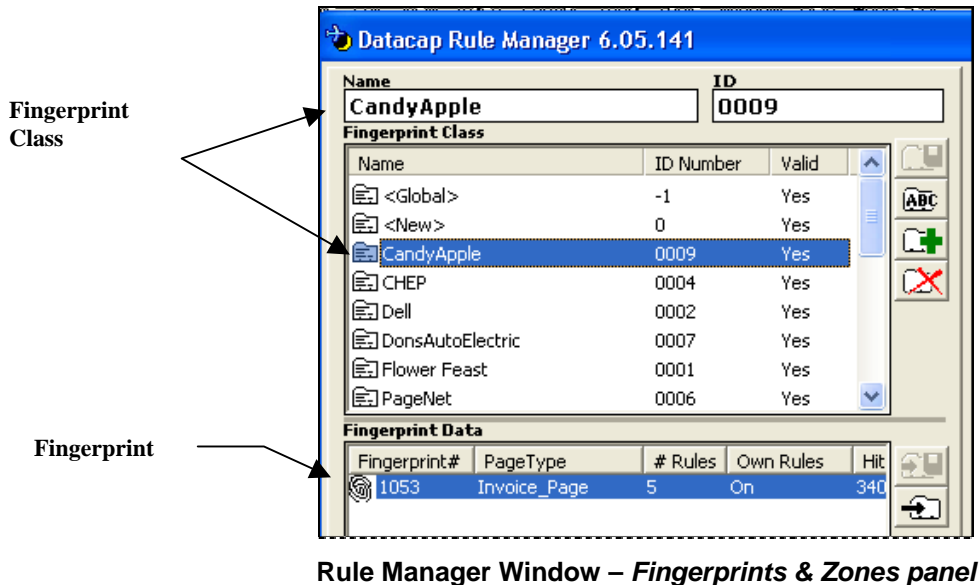


- ✓ The default configuration of the *1040EZ* training application relies on one fingerprint with specifications for the *IRS Form 1040EZ Income Tax Form*.
- ☛ Some *Taskmaster* applications don't use fingerprints at all! The online tasks of *Taskmaster Express*, for example, respond strictly to the design and content of the Document Hierarchy rather than to design and content of individual templates.

Chapter 4 reviews the steps you take to formulate a fingerprint, assign it to a **fingerprint class** you've previously defined, and set up the fingerprint's fields. If your application does not use these templates, you can skip this chapter ***without penalty!***

How to Add a Fingerprint

A fingerprint is the product of the *Rule Manager Window's Fingerprints & Zones* panel. In this example, the panel lists some of the companies and organizations that submit forms handled by a particular *Invoices* application – and a fingerprint set up to represent one of those forms:



Rule Manager Window – Fingerprints & Zones panel

- ✓ The *Rule Manager Reference* describes every detail of the *Rule Manager Window's Fingerprints & Zones* panel, and its *Rules* panel.

Very important! If you use the Taskmaster Application Wizard to set up a new application, the wizard guides you through steps you take to define fingerprint classes and fingerprints. The *Application Wizard Guide* describes every step.

Fingerprint Classes

A fingerprint must belong to a **Fingerprint Class** that you've previously defined. To set up a class, take these steps:

Step	Action
1.	Open your application's <i>Rule Manager</i> .
2.	Click on the Add New Class Name & ID icon on the right-hand edge of the Fingerprint Class area.



To Define a Fingerprint Class (continued)

Step	Action
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- Enter the name of the **Fingerprint Class**. *Alert!* In this example, a vendor's name provides a convenient title for a class. Other applications use the title of a stock form such as *Questionnaire_6*. This is a choice you make, of course. Just be sure that you're consistent.



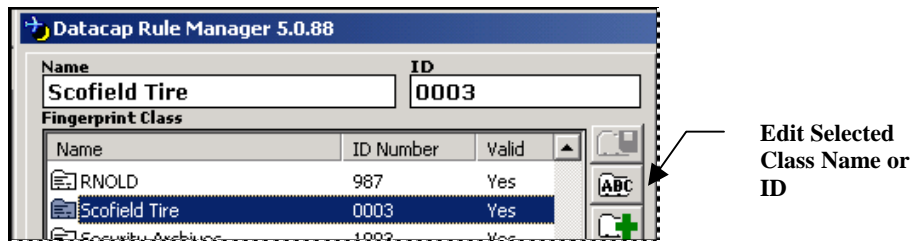
- Rule Manager* automatically assigns a **Class ID**. This four-digit value is either the next number in the ID sequence, or a previously abandoned ID. *Nothing* prevents you, however, from assigning an ID that conforms to *your* structure. For example:



- After you've entered these two *essential* values, click on the **Save Name & ID** icon. *Alert!* Don't try to toggle the **Add New Class Name & ID** icon first.



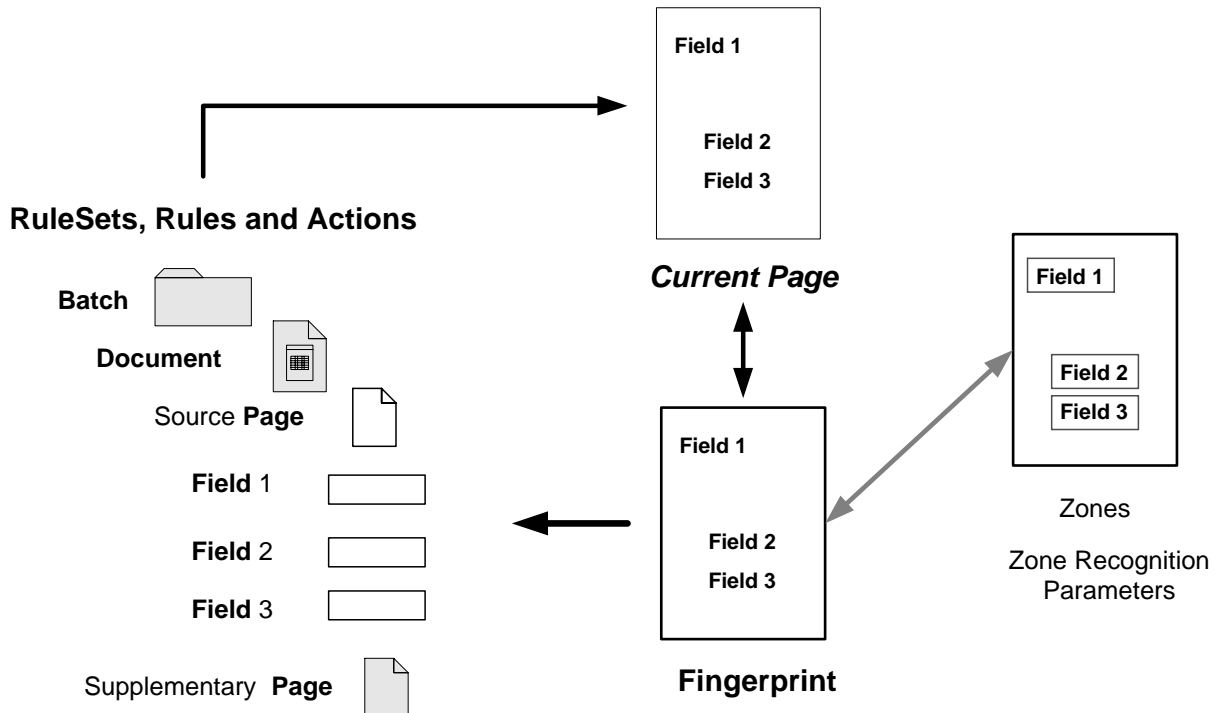
- Confirm that *Rule Manager* has added the new class to your listings.



- ✓ Clicking on the **Edit Selected Name or ID** icon lets you modify these values. After you make a change, press the **Save Name & ID** icon immediately (see Step #6 above.)

Fingerprints

This chart changes the focus of the chart on Page 2...but just a little.



Here, the emphasis is on the importance of the fingerprint as the foundation for rule definition and application. In this compact illustration, **zones** surround the fingerprint's three fields: a zone's properties indicate where a field sits within its page. In addition, a special set of **Recognition parameters** can stipulate the manner in which a *zoned* field's values are read, interpreted and evaluated.

This information combines with **rules** that dictate how a task is to:

- Single out the *source* pages in a batch – pages with data -;
 - Locate the fields on the current *source* page.
 - Match the current page to a fingerprint.
 - Process values in the fields of the current page in response to the zones, Recognition options and rules associated with the fingerprint.
- ✓ Before you can actually construct a fingerprint, you'll need two supporting entities. One is a **Fingerprint Class** (Page 4).

The second is a scanned image of the *source* page to be represented by the fingerprint. An image is a file – usually a .tif file – that occupies the **Image** area of the *Fingerprints & Zones* panel. You'll use the image to locate fields, and define zones.

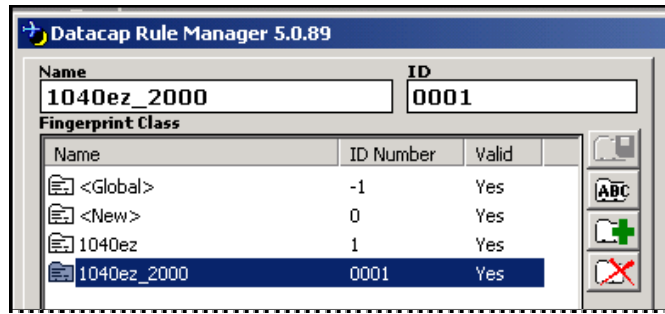
As you work with the **Image file** (.tif), *Rule Manager* generates a **Fingerprint Processing file** (.cco). This file contains detailed information about the fingerprint's layout...about the **lines** that cross from one side to the other, and about the **words** within each line. This process also:

- **Maps** relationships between words on the same line and different lines.
 - **Recognizes** the value of each word. The value might be *static* – a field's title, for example – or *fluid*, in the case of field data that changes from page to page during processing.
- ✓ Together, the Fingerprint Processing file (.cco) and the Image file (.tif) comprise the fingerprint itself – and **both** end up in the application's **fingerprint** directory after you take the following steps.

How to Define a Fingerprint

To set up a fingerprint:

Step	Action
1.	Open the <i>Rule Manager Window's</i> <i>Fingerprints & Zones</i> panel. (This explanation uses the <i>Rule Manager</i> of the <i>1040EZ</i> training application for examples. Remember! This indestructible application has been designed for you. Don't hesitate to use it to practice all sorts of <i>Rule Manager</i> procedures.)
2.	Highlight the Fingerprint Class to which the new fingerprint will belong.

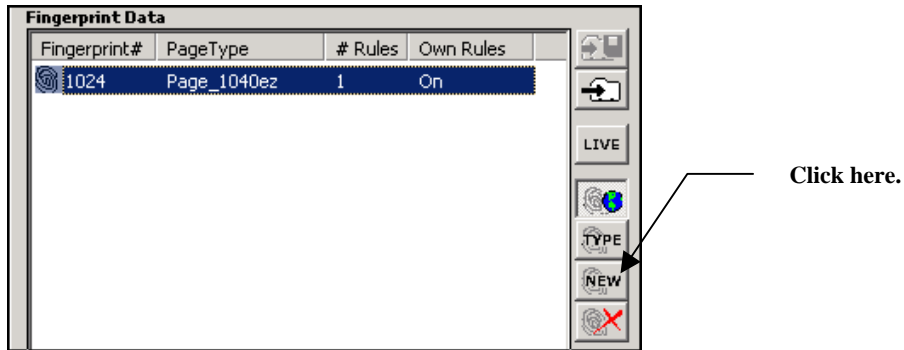


Continued on the next page →

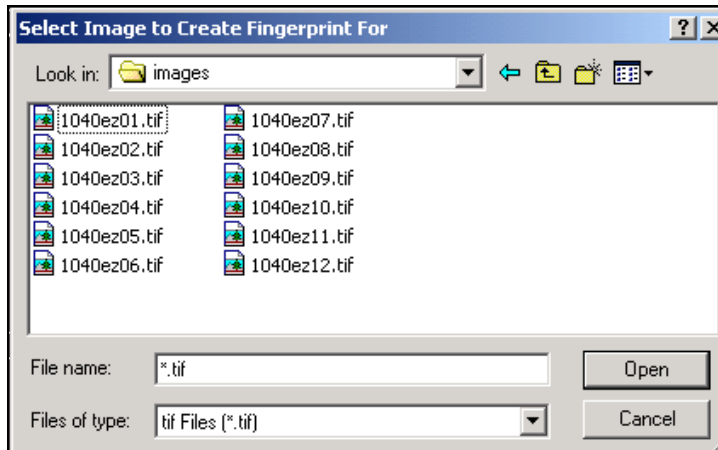
Fingerprints

To Setup a Fingerprint (continued)

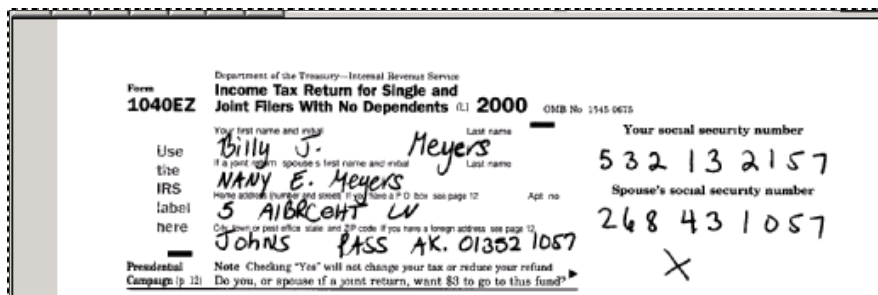
- | Step | Action |
|------|--------|
|------|--------|
- If this class already has fingerprints, highlight a **Fingerprint #** in the **Fingerprint Data** display, and click on the **New** icon. (If the class does not yet have a fingerprint, the **New** icon will be active as soon as you highlight the Class ID in Step #2.)



- Use the tools of the *Select Image to Create Fingerprint for* dialog to locate and retrieve the correct Image file. (Images for the 1040EZ application –and most other applications are - in the **images** folder.)



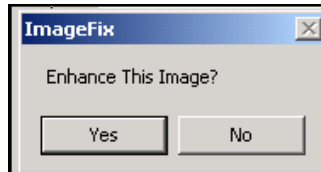
- Rule Manager* will automatically display the file's full image in the panel's **Image** area on the right.



To Setup a Fingerprint (continued)

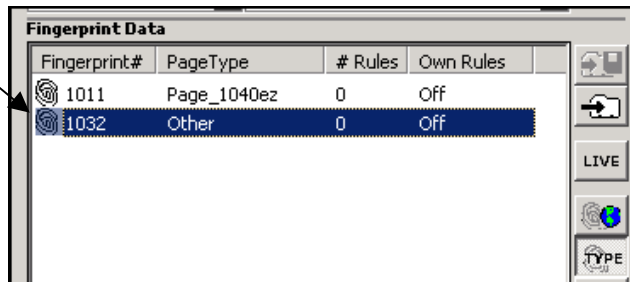
Step	Action
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6. *Rule Manager* will also ask if you would like to “enhance” the image before proceeding. This option gives you a chance to upgrade the image before you complete the fingerprint **and** to update a Settings file (.ini) with comparable specifications that will be applied to the image of any current page that matches the fingerprint. (For more about **Image Enhancement**, see Page 11.)

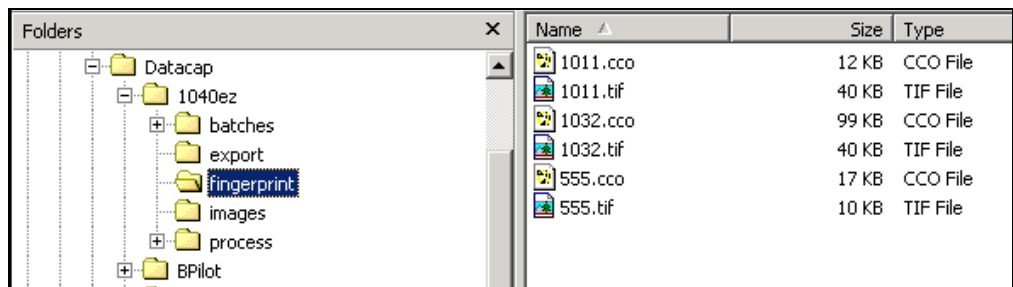


7. Concurrently, *Rule Manager* will assign a **Fingerprint #** to the new fingerprint – and *Other* as its default **Page Type**.

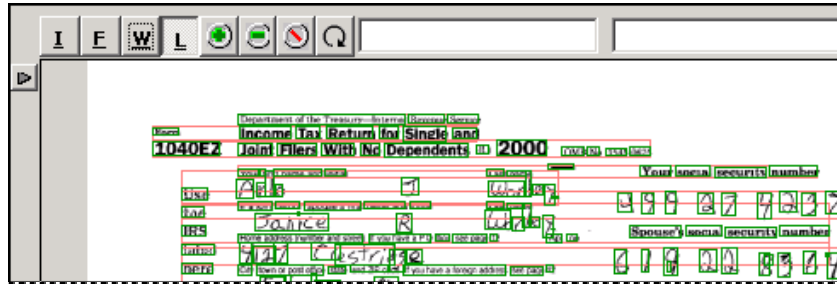
Fingerprint #



8. At this point, *Rule Manager* will replace the Image file’s name with the **Fingerprint #**, and place the file in the application’s **fingerprint** directory. *Rule Manager* will use the same Fingerprint # to identify the new Fingerprint Processing file (.cco) that also ends up in this directory. (After you construct the fingerprint, take a moment to verify that **both** files now reside in the **Fingerprint** directory.)



- To confirm the Fingerprint’s successful generation, select the Fingerprint’s listing and click on the Rules button at the bottom of the window to move to the *Rules* panel. Depress the **W** and **L** icons to be sure *Rule Manager* displays the fingerprint’s **words**: when you highlight random words with your cursor, be sure its value shows up in the **Action Input** field at the top (illustrated on the next page.)



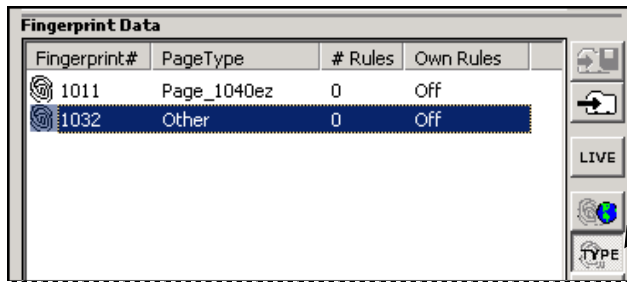
Rule Manager Window – Rules Panel
Image Area

Fingerprint Page Types

Rule Manager automatically assigns *Other* as the new fingerprint's **Page Type**. However, a fingerprint represents a *source* page that has a prominent position in the Document Hierarchy (Chapter 2 and Chapter 3). **Be sure** to follow the steps below to link the new fingerprint to the appropriate **Page** object of the Document Hierarchy:

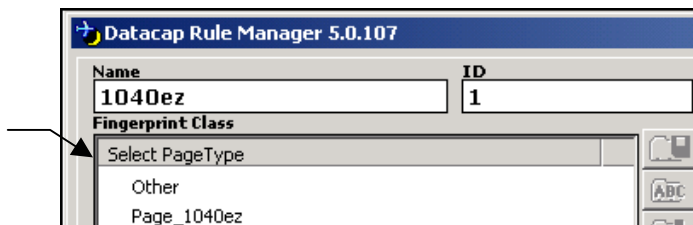
Step	Action
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1. Highlight the fingerprint's listing in the **Fingerprint Data** display.



2. Click on the **Type** icon on the right edge: this temporarily replaces the list of classes in the **Fingerprint Class** area with names of the Document Hierarchy's **Page** objects.

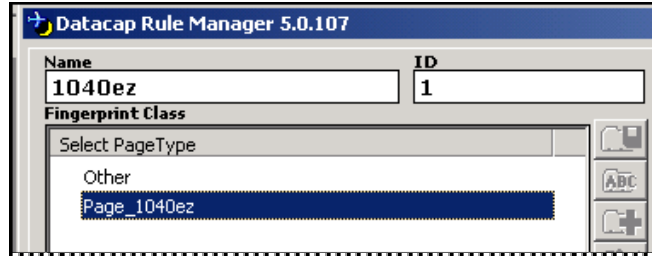
Page Types



To Change a Fingerprint’s Page Type (continued)

Step	Action
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- Select the applicable Page Type - in this case, *Page_1040ez*.



- Click on the **Save Name & ID** icon at the top of the **Fingerprint Data** display’s left edge.



- Confirm the new **Page Type** value.

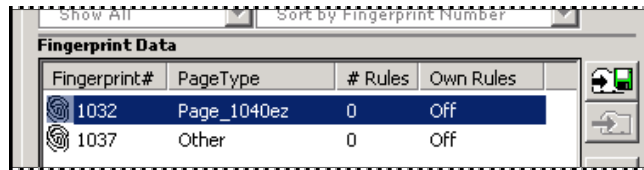
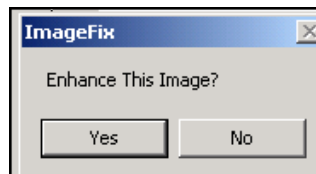


Image Enhancement

The image of a *source* page represents the page itself, the fields on the page, and the placement of values within the fields.

When you select an Image file for a particular fingerprint (Page 4), *Rule Manager’s ImageFix* dialog almost immediately asks if you would like to enhance the image before you proceed...*before Rule Manager* pairs a new CCO file with the Image file and places them both in the **Fingerprint** folder.



ImageFix dialog

If you click on the Yes button, the *Image Processing Setup* dialog will appear on your screen (see the illustration on the next page.)

Image Enhancement

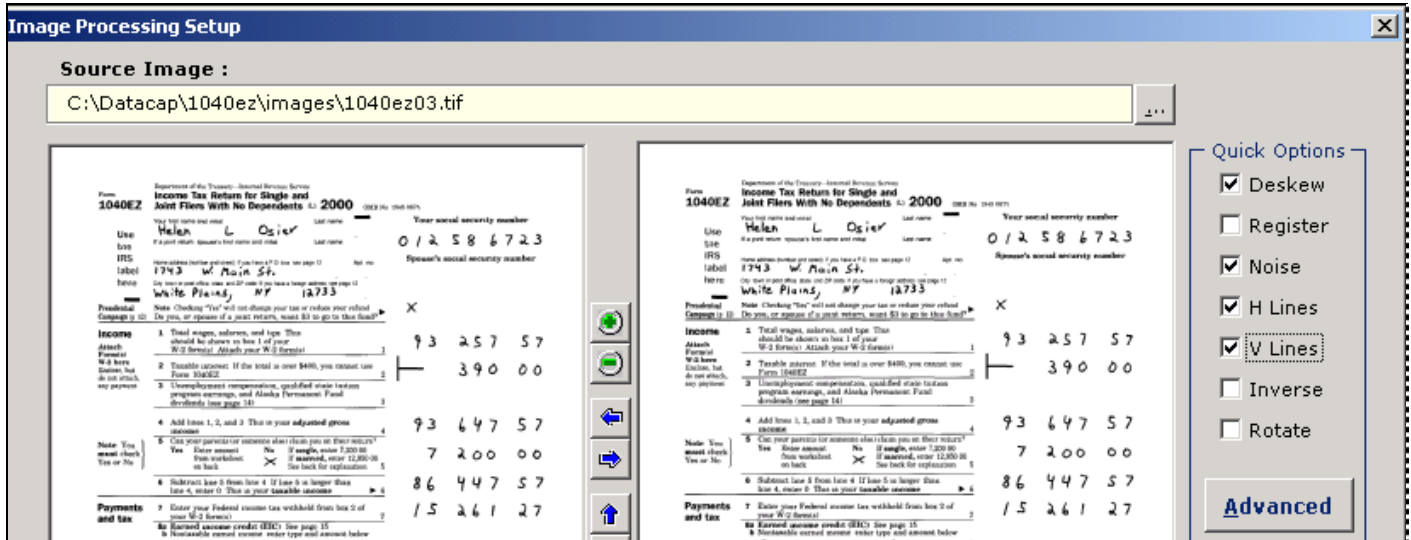


Image Processing Setup dialog – upper portion

- ✓ **Very important!** Pay close attention to the file name, extension and path in the **Source Image** field above. At this early stage, Image Enhancement applies only to image that is the source for the fingerprint – and thus prepares the image for a *Rule Manager* process that uses the enhanced image to generate the fingerprint's .cco file (see the example on the next page.)

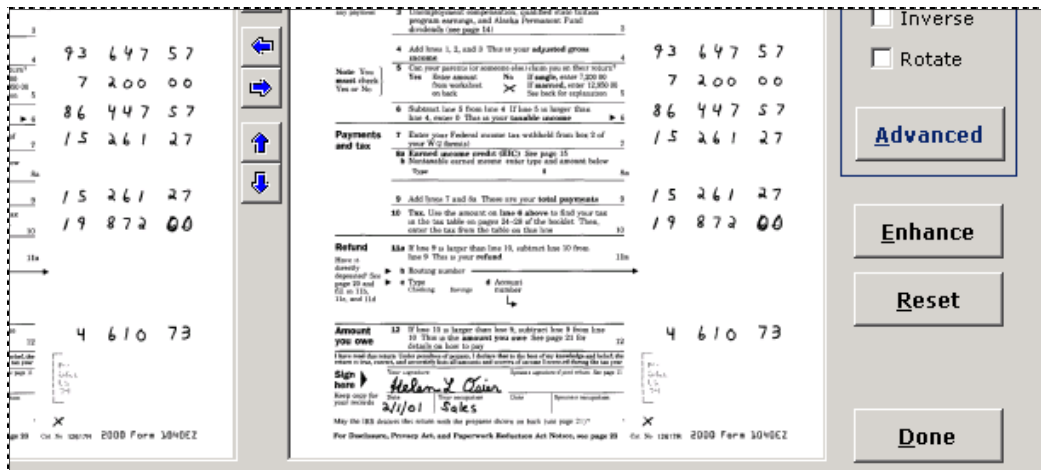


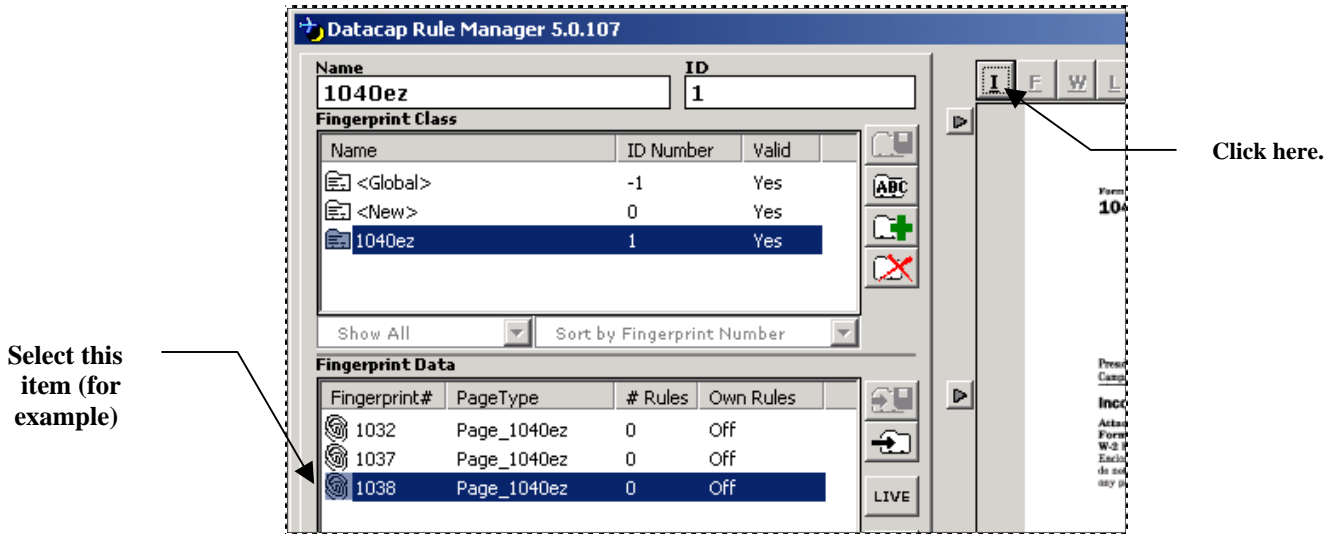
Image Processing Setup dialog – upper portion

- The *Image Processing Setup* dialog has numerous settings that you can use to enhance the fingerprint's source image – or to define a Settings file with specifications that will be applied to all images representing pages that match the fingerprint. Chapter 3 of the *Rule Manager Reference* describes these settings and the use of this dialog.

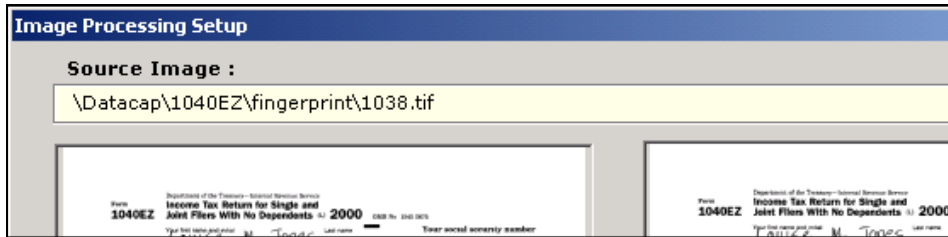
Enhancing Existing Fingerprint Images

You can also enhance the image that belongs to an existing fingerprint, and save the revised parameters as a Settings file (.ini). The file and its parameters are called into action whenever the image of a current page matches the fingerprint’s image.

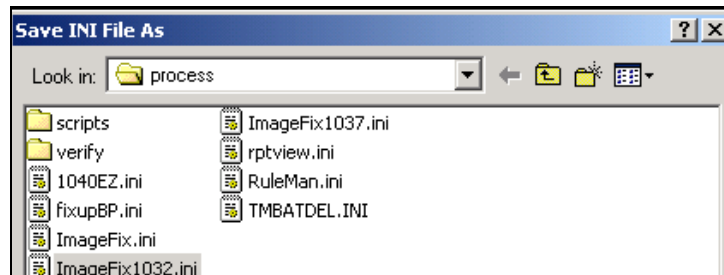
- ✓ To view a fingerprint’s *un*-enhanced image within the *Image Processing Setup* dialog, select the fingerprint listing’s **Fingerprint #** in the **Fingerprint Data** area:



When the *Image Processing Setup* dialog appears, you’ll see a very different path to an Image file with a very different name: both use *fingerprint* rather than *image* values.



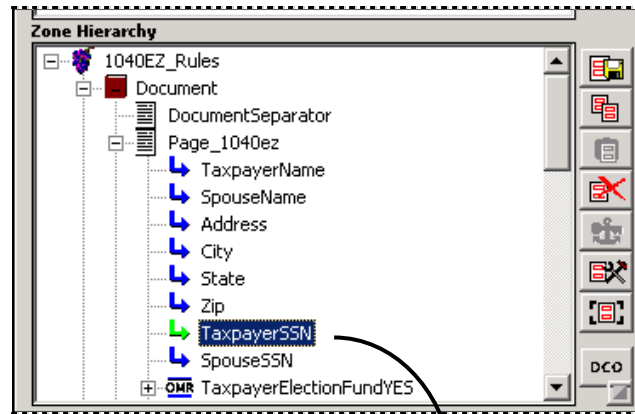
The tools of the *Image Processing Setup* dialog give you a chance to assign new criteria to a fingerprint’s image and to save these criteria as a new Settings file (.ini) in your application’s **Process** directory. **Alert!** In the example below, **ImageFix.ini** is a default file with enhancement settings that apply to all images matched to a fingerprint – unless you create a new file of the current fingerprint – **ImageFix1032.ini** or **ImageFix1037.ini** for example.



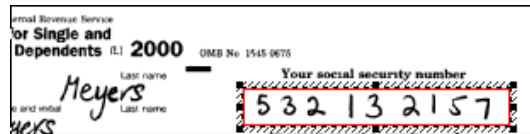
Zones

A **zone** is a rectangular outline you draw with your cursor around a field – or block of fields - on the fingerprint’s image.

- ✓ You can take this step only *after* you have highlighted the name of the corresponding **Field** object in the **Zone Hierarchy** display, in the lower left-hand corner of the **Rule Manager Window’s Fingerprints & Zones** panel.



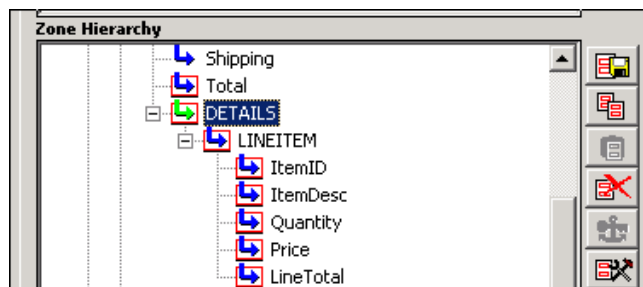
Zone Hierarchy



Zoned Field

Zoning locates the field – or block of fields - on the fingerprint. In addition to location parameters, a zone provides information about the size of a field when it is part of a particular fingerprint.

A **zoned** block contains **zoned** child blocks or fields. Most fingerprints of the *Invoices* application, as an example, set up three zones to designate an invoice’s Line Item Detail. The **Details** grandparent surrounds the table that lists the line items (see the illustrations on the next page.) The **LINEITEM** child surrounds a sample row, and **zoned** grandchildren locate individual cells such as **ItemID** or **Quantity**.



Zone Hierarchy – Line Item Detail

NORM MNTHLY STRGE CTN TYPE 01	70.0	EA	0 190	13 30	N
NORM MNTHLY STRGE CTN TYPE 02	18 0	EA	0 320	5 76	N
NORM MNTHLY STRGE CTN TYPE 03	1 0	EA	0.400	0 40	N
CARTON RETRIEVALS - NORMAL	7 0	EA	1 379	9 65	N
CARTON REFILES	7.0	EA	1 379	9 65	N

Invoices application -
Zoned DETAILS Block

ITEMID /DESC	QTY/UNIT	SHIPPED	UNIT	PRICE	NET	TAX
NORM MNTHLY STRGE CTN TYPE 01	70.0	EA		0 190	13 30	N

Invoices application -
Zoned LINEITEM Block

ITEMID /DESC	QTY/UNIT
NORM MNTHLY STRGE CTN TYPE 01	

Invoices application -
Zoned ItemDesc Field

Zoning Techniques

How to Establish a Zone

Zone parameters apply exclusively to the fingerprint you're working with.

To set up a new zone:

- ◆ Highlight the applicable **Field** object in the **Zone Hierarchy** display on the left.
- ◆ Use your cursor to surround the corresponding field or block of fields in the fingerprint's image (see the example on Page 13.)
- ◆ Click on the **Save Zone Setup** icon at the top of the **Zone Hierarchy** display's right edge.



- ◆ Close and re-open the fingerprint. Click on the **Field** object in the Zone Hierarchy. Confirm that a rectangle surrounds the green arrow preceding the object's name *and* the corresponding field (or block) in the image.



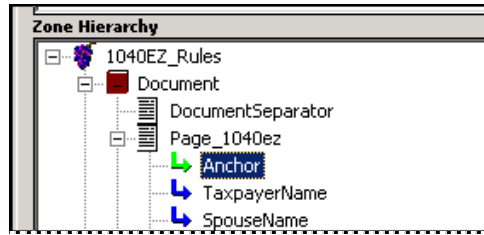
The Fingerprint Processing file (.cco) retains the fingerprint's zoning data.

How to Lock a Zone onto a Word

After the Fingerprint Processing file (.cco) is in place, you can examine the **lines** in the template, and the **words** on each line (Page 10).

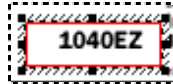
You can also **lock** a zone to a particular word. This feature can be very helpful if, for example, the Document Hierarchy has an **Anchor** field, and the corresponding field on the fingerprint is a word with a prominent printed value.

If you add an *Anchor Field* object to the 1040EZ application's Document Hierarchy (Chapter 3), it automatically becomes part of the Zone Hierarchy:



1040EZ Zone Hierarchy

When you create a zone to link the **Field** object to a clear and constant value on the form, the zone might first look like this:



However, if you click on the **Snap Zone to Word(s)** icon just above the **DCO** icon, the zone closes in tightly around the fingerprint's word. This sharpens the focus of **Zone** actions such as **AnchorPage** and **RegisterPage**.



How to Designate Field Setup Options

Rules and their actions determine how a Recognition task locates, recognizes and evaluates a field's *runtime* values – the values entered (or not entered!) into this field on a current *source* page.

When the task matches a current page with a fingerprint, the fingerprint's zones determine the location and size of comparable fields on the current page.

Recognition Options provide additional specifications. Most of these options help determine how a field's values are to be *recognized*. Others supply a field with a set of pre-defined, alternative values that a Data Entry operator can select when processing the *source* page in a batch. Setup options are assigned in the **Recognition Options Setup** dialog.

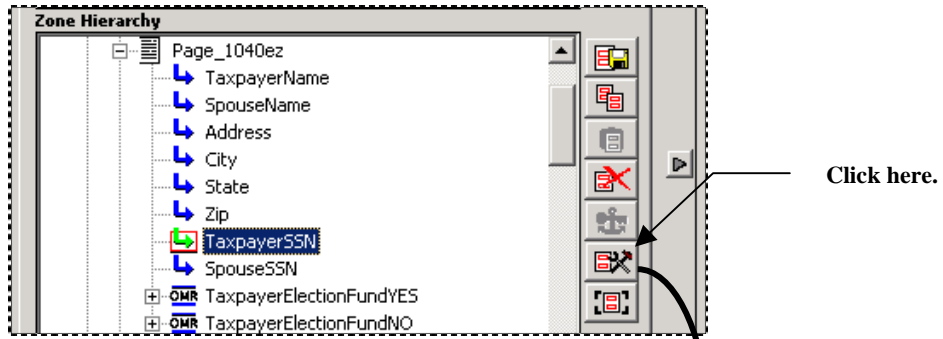
- ✓ The **Recognition Options Setup** dialog has three active tabs, with settings for three **Recognition engines**:
 - ◆ The *ICR/C* Recognition engine provides both hand-print and machine-print recognition capabilities.
 - ◆ The *OCR/S* tab contains settings for a second Recognition engine. This engine is ideal for fields filled with typed values or check boxes (see the examples on the next page.)
 - ◆ If the **Field** object contains barcode values, you can use the *Barcode/X* tab to assign recognition parameters:

Two other tabs – *ICR/K* and *ICR/Y* – have settings for the Kadmos and Abbyy Recognition engines, respectively. However, these engines are only available by special arrangement with Datacap.

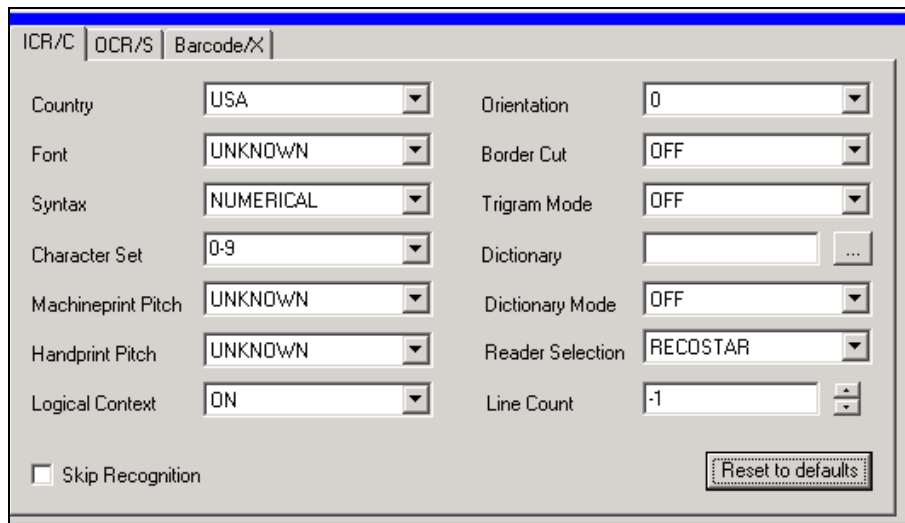
To access this dialog, highlight a **Field** object in the **Zone Hierarchies** display and click on the **Recognition Options Setup** icon on the right.

- ☛ **Very important!** The parameters you select from a tab of this dialog apply to an object of the Document Hierarchy – rather than to a *zoned* field. As a result, the specifications are *not* fingerprint-specific. If, for example, you highlight a **Field** object in the **Zone Hierarchy** display, open the **Recognition Options Setup** dialog, and choose a set of parameters from the *ICR/C* tab, the parameters will automatically apply to this field on *every* fingerprint – whether or not a fingerprint includes a zone for that field.

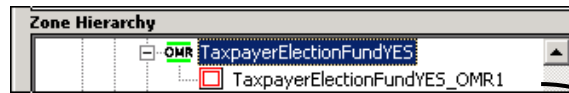
Important! Chapter 3 of the *Rule Manager Reference* identifies and explains every setting in each drop-down list of the *ICR/C* tab - and of the other tabs. Upcoming pages show you how to use special tools to add OMR fields to a Document Hierarchy, and how to define a dictionary of acceptable values for a particular field.



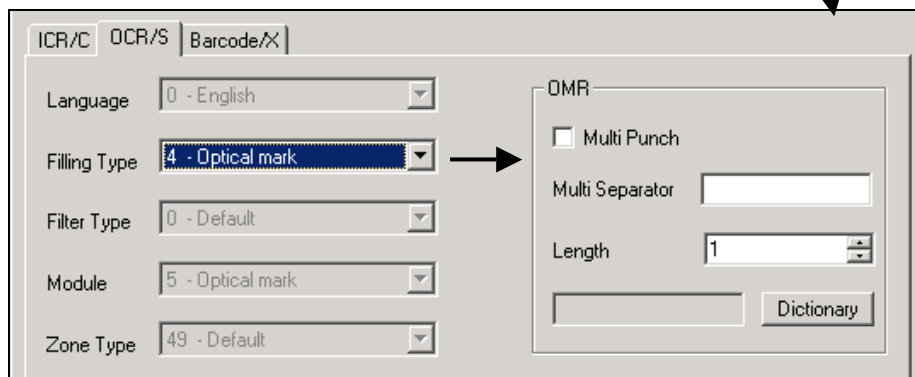
**1040EZ Rule Manager Window –
Fingerprints & Zones Panel**



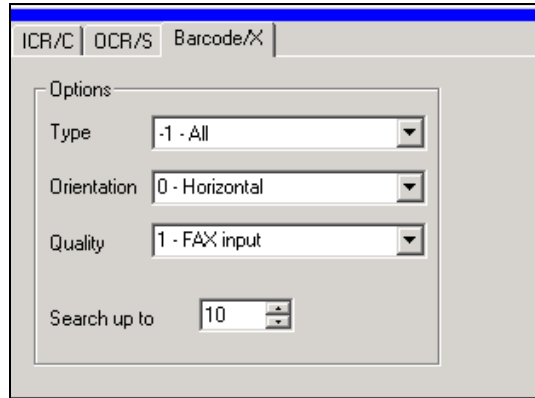
Options Setup dialog – ICR/C tab



1040EZ Zone Hierarchy – OMR Field



**Options Setup dialog – OCR/S tab
OMR Specifications**



Options Setup dialog – Barcode/X tab

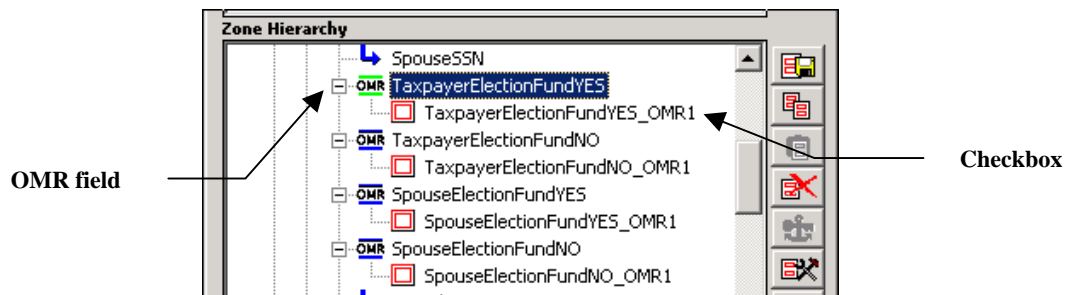
- ☛ To select a Recognition engine (and other criteria) for a field of the application’s fingerprints, and to designate its settings:

Step	Action
1.	Highlight the applicable Field object in the Zone Hierarchy display.
2.	Click on the Recognition Options Setup Dialog icon on the display’s right edge (illustrated on the previous page.)
3.	Choose the specifications that apply to this Field object. If none of the options on a tab will be used, you can place a check in the Skip Recognition check box at the bottom of the tab.
4.	Click again on the Recognition Options Setup Dialog icon to close the dialog and save your settings.

OMR Fields

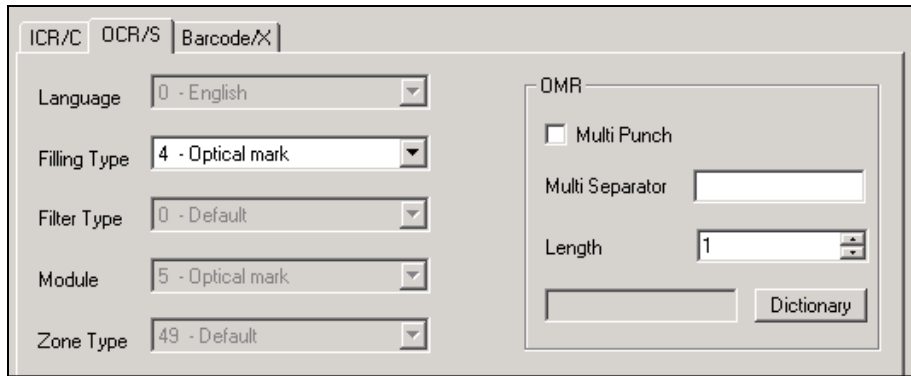
Tools of the *OCR/S* tab of the *Recognition Options Setup* dialog can add Optical Mark Recognition (OMR) **Field** objects to your Document Hierarchy – quickly, easily and accurately.

The default *1040EZ* Document Hierarchy has four such fields: each contains a single checkbox a taxpayer or spouse can use to respond *Yes* or *No* to the **Election Fund** option.



1040EZ OMR Fields

- ✓ A **Field** object can take on OMR characteristics only if the *OCR/S* tab of the **Recognition Options Setup** dialog provides them. The settings for the *TaxpayerElectionFundYES* field look like this:



Options Setup dialog – OCR/S tab

- ◆ Selecting *Optical Mark* as the **Filling Type** automatically “grays out” the remaining fields on the left, and activates the fields in the **OMR** area on the right.
 - ◆ “1” in the **Length** field means that this OMR field has just one checkbox.
 - ◆ If this is a new assignment, closing the dialog converts the **Field** object to OMR and adds one or more checkboxes as secondary **Field** objects. These modifications appear in the **Zone Hierarchy** and in the **Document Hierarchy Setup** window (Chapter 3).
- ✎ An alternative approach would be to create *one* OMR field with *two* choices for the *TaxpayerElectionFund* **Field** object- very much the way the field appears in the form itself. To accomplish this sort of modification (to the original Document Hierarchy!), you would take these steps:

Step	Action
------	--------

1. Highlight the *TaxpayerElectionFund* **Field** object in the **Zone Hierarchy** display.



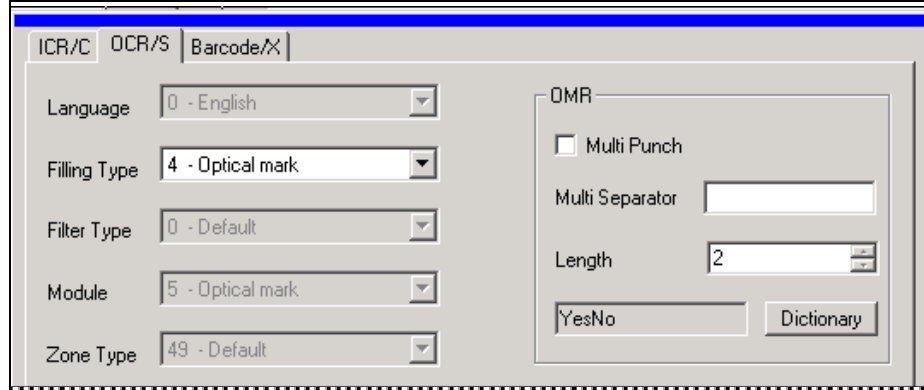
2. Click on the **Options Setup Dialog** icon.
3. Move to the dialog’s *OCR/S* tab.

Continued on the next page →

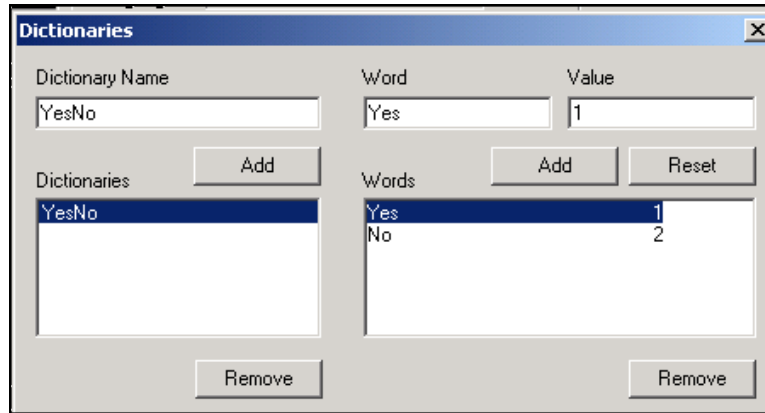
To Set Up an OMR Field (continued)

Step	Action
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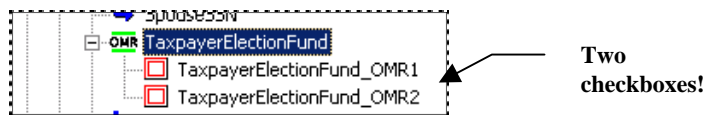
- Select 4 – *Optical Mark* from the **Filling Type** drop-down list.



- Enter “2” as the field’s **Length**. This assigns two checkboxes to the field. **However**, because **MultiPunch** has **not** been selected (above), only one checkbox can have a value.
- A brief **Dictionary** sets the value for each checkbox – *Yes* for the first (1), *No* for the second (2). For more about Dictionaries, see Page 23.



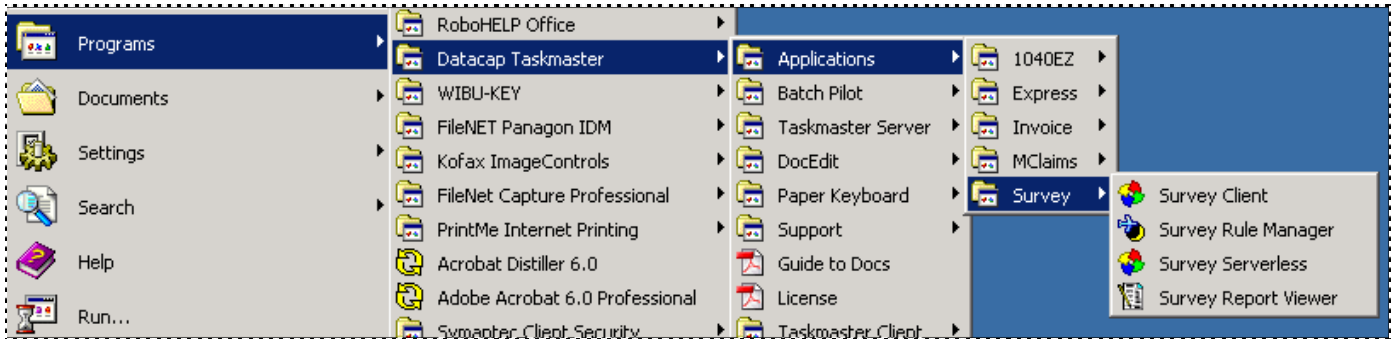
- Return to the *Fingerprints & Zones* panel to verify the revised structure in the **Zone Hierarchy** display. You can also click on the DCO button at the bottom of the panel to be sure the changes show up in the *Document Hierarchy Setup* window.



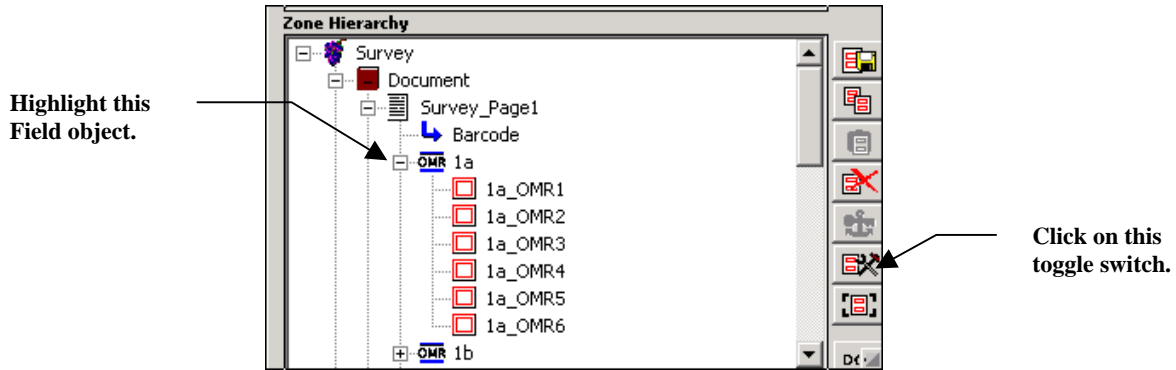
- ✓ **Alert!** The *pre-configured* Survey application captures responses to widely distributed questionnaires – and uses *Rule Manager's* OMR feature to add **Field** objects representing the checkboxes that store an answer – or answers to a question on the survey.

To access the Survey application's Rule Manager:

- ◆ Select **Datacap Taskmaster** from the Windows Start button's **Programs** list.
- ◆ Open the **Applications** folder, and the **Survey** sub-folder.
- ◆ Click once on the **Survey Rule Manager** icon.



This Rule Manager's **Zone Hierarchy** display lists numerous OMR sub-fields. Here are just a few...the OMR sub-fields of the *1a* **Field** object:



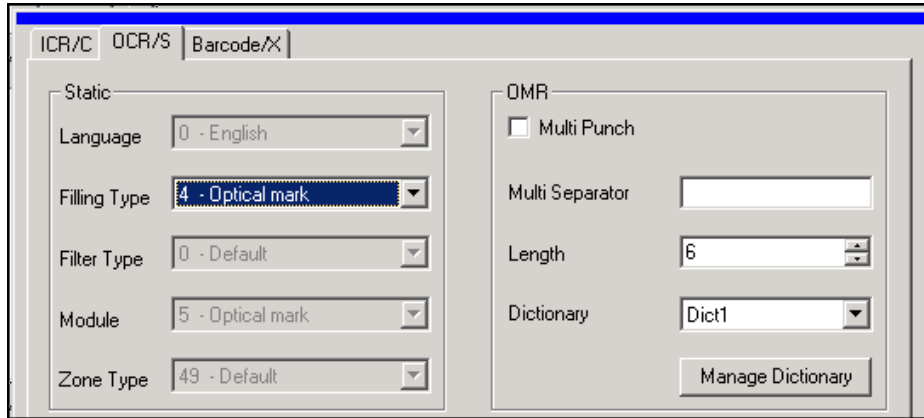
Zone Hierarchy – Survey Application

To review the OMR structure of the *1a_OMR1* field, highlight its **Zone Hierarchy** listing and click on the **Options Setup** icon. **Remember!** This is a toggle switch: you can't exit the **Recognition Options Setup** dialog until you click on the icon again.

When the dialog's *OCR/S* tab appears, move to the *ICR/S* tab.

Dictionaries

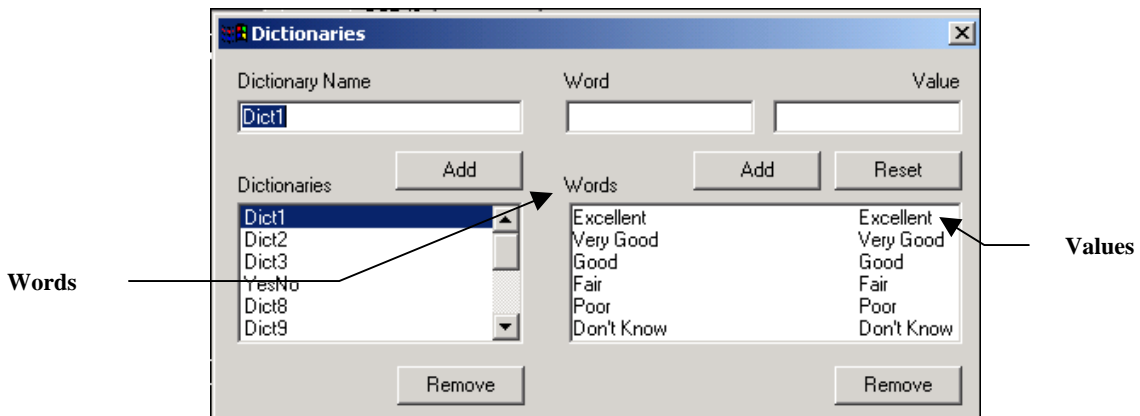
To specify that the *Ia* **Field** object has six checkboxes, the *Survey* Administrator selected *4-Optical Mark* as the field’s **Filling Type** – then chose “6” as the parent field’s **Length**. *Rule Manager* automatically established six sub-fields and placed them immediately below the *parent* field in the Zone Hierarchy (see the example on the previous page.)



Options Setup dialog – *OCR/S* tab

- ✓ Because the Administrator did *not* select the **MultiPunch** option, the parent field can have only one value at a time, and that’s the value of the *checked* sub-field.

In this example, a **dictionary** contains **words** and **values** for all sub-fields. The dictionary’s title is *Dict1*; you can review its contents by pressing the Manage Dictionary button in the OMR area of the *OCR/S* tab:

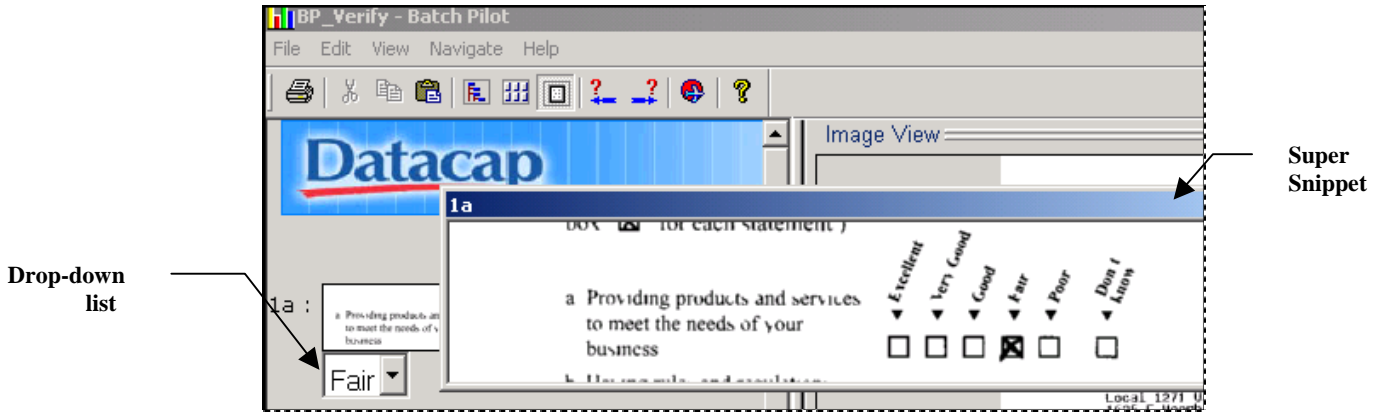


Dictionaries dialog – Dict1 dictionary

- ☞ The six “words” will appear in a drop-down list for this field in the *Survey* application’s **Data Entry** panel. The “values” will be exported to an Export file or database.

When the Verification task’s operator opens the panel, this field appears immediately. On the left is the drop-down list with the six possible values. However, the Verification task

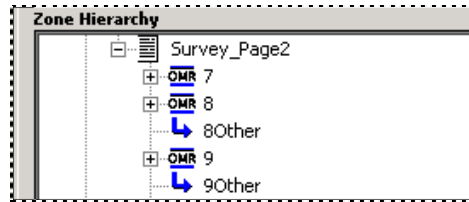
displays the value that was selected by the previous Recognition task as the most likely choice.



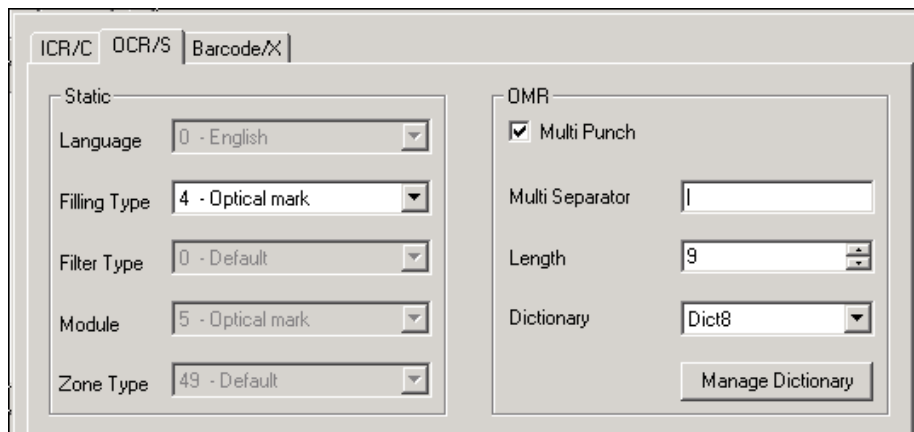
**Data Entry Panel – Survey Application
Field 1a**

The example above also shows the field’s “super snippet” – the image of the original Survey page that was the source of the Recognition task’s current interpretation. As you can see, the Fair checkbox has been marked on the form, and “Fair” is the field’s default value in the Data Entry panel.

Some fields have parameters of a different sort. Field 8 and Field 9 of Survey_Page2 are multi-punch fields: the form-filler can select more than one response to a question.



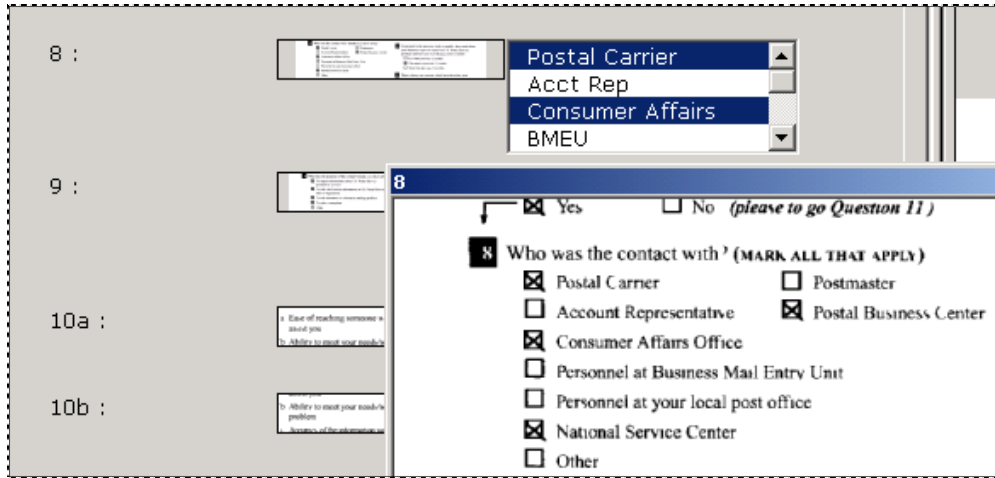
**Survey_Page2
Questions 7, 8 and 9**



**Recognition Options Setup dialog – OCR/S tab
Field 8**

Dict8 is the dictionary for this field. If you press the tab's Manage Dictionary button, the *Dictionaries* dialog will list the values assigned to the field's checkboxes.

In this example, when the Verification task operator reaches Field 8 in the *Data Entry* panel, the super snippet reveals that the form-filler has checked four boxes. If the Recognition task has accurately detected these choices, corresponding options in the panel's combo box for Field 8 will be highlighted. If there are errors, the operator can use standard keyboard techniques to select one or more values.

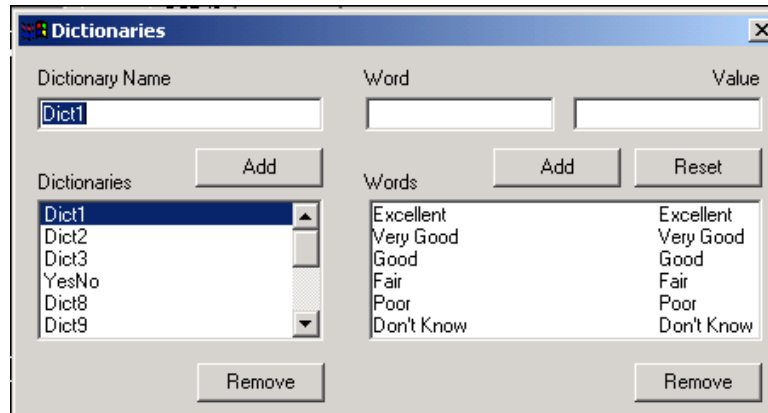


Data Entry Panel – Survey Application
Field 8

How to Define an OMR Field's Dictionary

To put together a dictionary of values for an OMR field, take these steps:

Step	Action
1.	Highlight the field's title in the Zone Hierarchy display of the <i>Rule Manager Window's Fingerprints & Zones</i> panel.
2.	Click on the Recognition Options Setup icon on the right edge of the Zone Hierarchy display.
3.	Access the <i>OCR/S</i> tab of the Options Setup dialog.
4.	Select <i>4-Optical Mark</i> as the field's Filling Type .
5.	If a form-filler can select only <i>one</i> of the field's checkboxes, do not select the MultiPunch option. Conversely, if a form-filler can opt for more than one checkbox, do activate this option.
6.	Press the Manage Dictionaries button to access the <i>Dictionaries</i> dialog. Important!



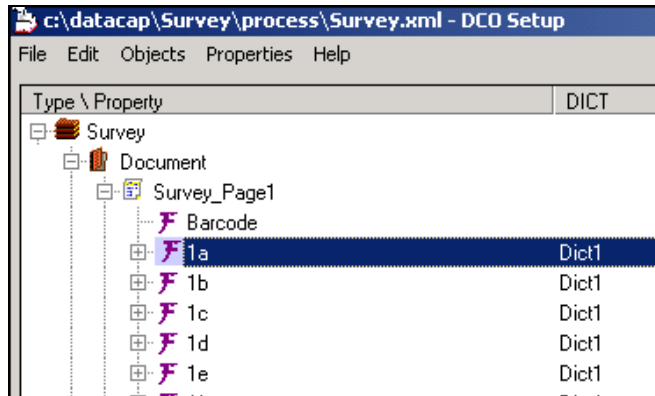
Dictionaries dialog – Survey Application

To Define a Dictionary for an OMR Field (continued)

- | Step | Action |
|------|--|
| 7. | Highlight the field's title in the Zone Hierarchy display of the <i>Rule Manager Window's Fingerprints & Zones</i> panel. |
| 8. | On the left side, enter the new Dictionary Name and click on the Add button to move the name to the Dictionaries list. |
| 9. | Select the name from the Dictionaries list. Enter the dictionary's first Word and, optionally, a <i>numeric</i> or <i>string</i> equivalent as its Value . Remember that "words" are displayed and "values" are exported. |
| 10. | Press the Add button to include the word in the OMR field's dictionary. |
- ✓ The *Dictionaries* dialog lists the dictionaries not only of OMR fields but of **all Field** objects that use this approach to assemble a dictionary of values. Chapter 3 shows you how to use the *Document Hierarchy Setup* window to define a dictionary for a **Field** object and assigns its name as the object's **DICT** property.

If you add a **DICT** property to any **Field** object, the identities of comparable dictionaries for all **Field** objects will show up in the *Document Hierarchy Setup* window.

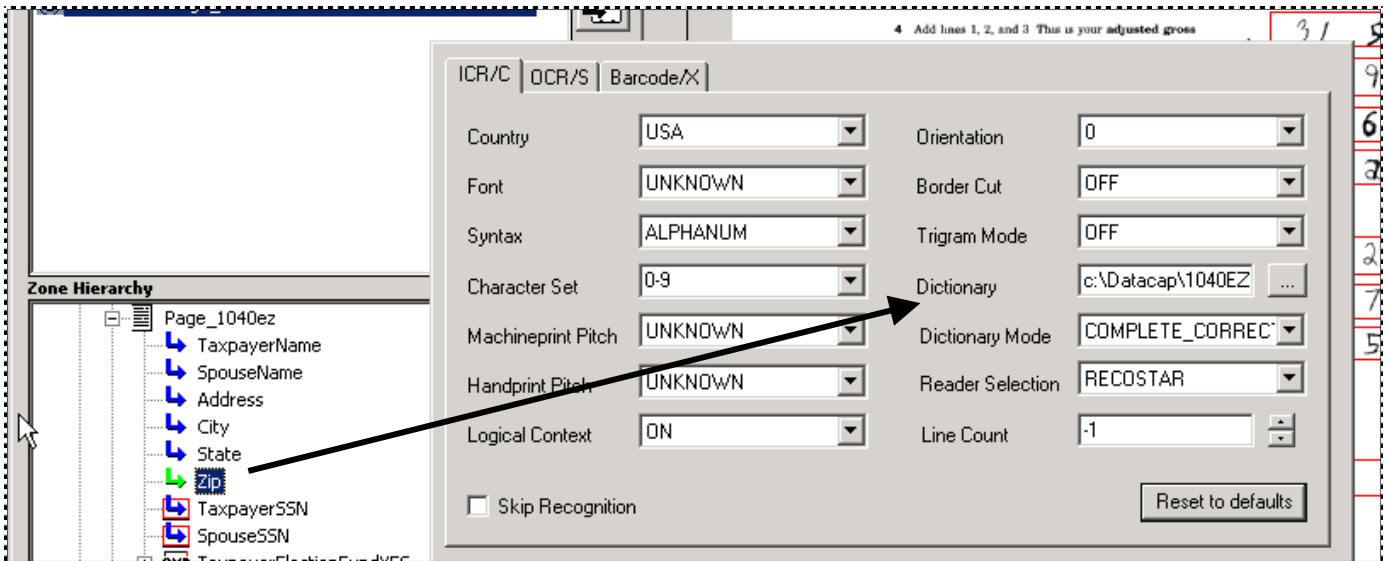
Here's a small portion of the *Survey* application's Document Hierarchy:



Dictionary Files (.hex)

The two dictionary settings of *ICR/C* tab of the *Setup Options* dialog let you designate a file (.hex) that contains a dictionary of acceptable values. When processing a *source* page, a Recognition task will check the **Field** object's *recognized* value against the values in the dictionary.

The example below links the Document Hierarchy's *Zip Field* object to a third-party dictionary file of ZIP code values:



Setup Options dialog - *ICR/C* tab

- ✓ **Important!** The Dictionary file you select must be a hexadecimal file that can be read by the engine you specify in the **Reader Selection** field. Additionally:
 - Be sure to select one of two **Dictionary Mode** settings. *Correction* indicates that the dictionary is *not* exclusive: the field can contain values other than those in the

Dictionaries

dictionary. *Complete_Correction* indicates that the dictionary *is* exclusive: the Recognition engine will recognize only values that are in the dictionary.

- When you link a Dictionary file (.hex) to a **Field** object, the Document Hierarchy does *not* list the file as a **DICT** property of the object.