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Introduction to Taskmaster Rules

Welcome to the *Guide to Taskmaster Rules*!

The text's opening chapter describes the concepts which underlie *Taskmaster Rules,* and the elements of a *Taskmaster Rules* application. Chapter 1 also summarizes the content of the guide's chapters; refers to you related documentation; and reviews the typographic and terminology conventions that appear throughout the text.

The contents of Chapter 1 include:

✓   Pages 1-10 introduce the many components of a *Taskmaster Rules* application. For an overview of the *Taskmaster Rules* architecture, see Chapter 2 of the *Taskmaster Administrator's Guide*. You'll find this text – and other supporting documentation –in the **Docs** folder of your **Datacap** directory.

What is…Taskmaster Rules?

Taskmaster Rules is software that applies data capture rules *you* define to the pages of the forms you process, and to the fields on each page.

Taskmaster Rules operates by assigning its data capture activities and the rules that guide these activities to a set of tasks that run sequentially. The tasks are responsible for

Scanning paper or images, establishing processing batches, and adding an Image file representing each scanned page to the new batch.

Identifying individual pages according to their Page Types.

Assembling documents that consist of one or more pages, representing one or more Page Types.

Locating the fields on a document's *source* page - the page that contains user-entered data.
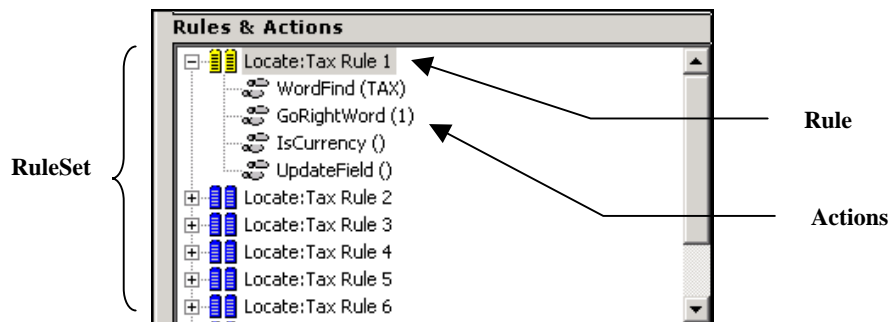
Recognizing the values in the fields of the *source* page.

Verifying these values and the makeup of all documents in the batch.

Validating a document's verified data.

Exporting the data to a file or database.

✓ In the list above, *every* activity except Scanning responds to **rules** that form **RuleSets** - and to the **actions** that comprise the rules. Here's an example:

**Rule Manager Window – *Rules Panel*
Rules & Actions Sector**
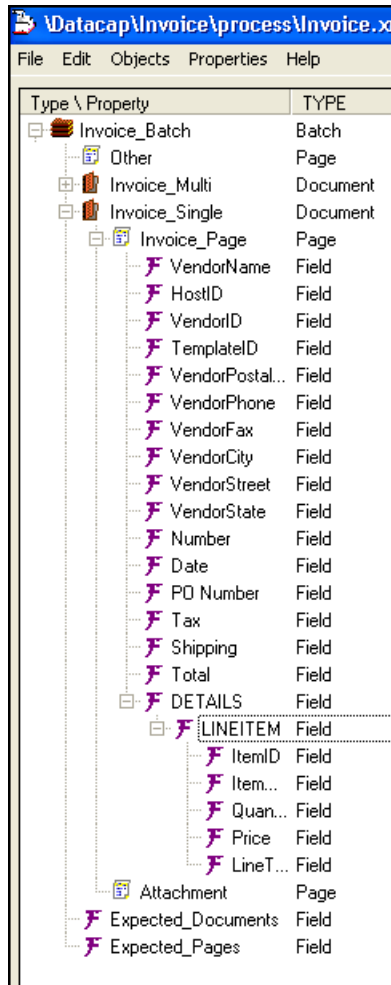
This **Locate** RuleSet looks for the **Tax** field on an **Invoice** page. *Rule 1* of the RuleSet has four actions. The actions attempt to find the field and the *recognized* value it contains; confirm the value's Data Type (*Currency*); and update the page's Data file with the *recognized* value. If an action fails, the RuleSet automatically shuts down the rule and summons the next rule.

The rules you define are applied to **objects** of a **Document Hierarchy** – an organizational structure you also define.

The Document Hierarchy has four levels: **Batch**, **Document**, **Page** and **Field**:

- Properties of the **Batch** level's single object determine the location and content of a processing batch.
- Objects at the **Document** level designate the documents that a batch contains.
- A document, in turn, includes one or more **Page** objects, down one level. This level must include a **Page** object for each of the document's *source* pages.
- The **Page** object of a *source* page has one or more **Field** objects.

Below is the Document Hierarchy of the pre-configured *Taskmaster for Invoices* application:

Document Hierarchy – *Invoices Application*

Whenever you construct a RuleSet, you **bind** it directly to an object of the Document Hierarchy. Below, the **Locate** RuleSet that looks for and processes values in the *Tax Field* object is bound to that object. Later, if you assign this RuleSet to a task, that task carries out the actions of each rule, until the value in the bound field has been located and processed…or the search is abandoned.
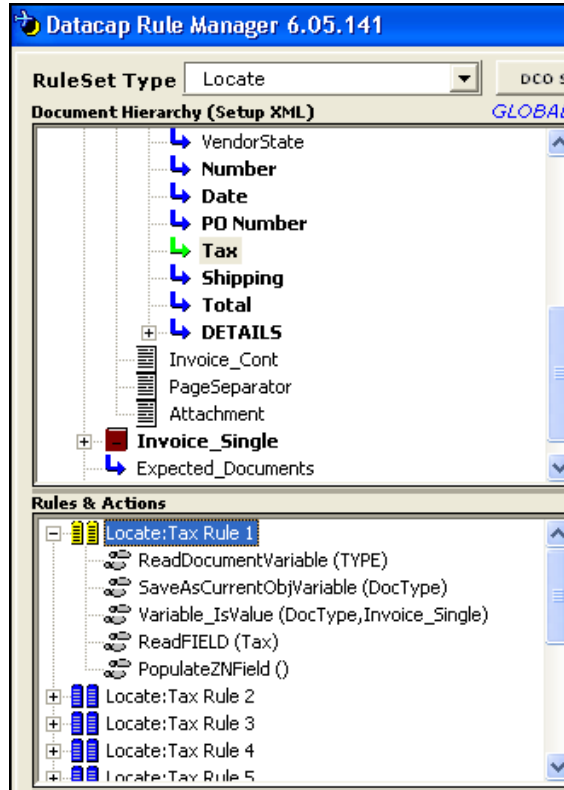
☛ ***Before you read further!*** *Taskmaster 6, Release 5* sets up and runs ***rules-based*** applications exclusively. The *Guide to Taskmaster Rules* focuses entirely on the steps you take to assemble and run a *Taskmaster Rules* application. Although this chapter refers to *"Taskmaster Rules"* concepts and applications, later chapters simply use *"Taskmaster."*

Chapter 4 of the Taskmaster Administrator's Guide shows you how to upgrade to an earlier application to *Taskmaster 6, Release 5*. Page 11 of this chapter shows you how to convert the earlier application's FormSpec to a Document Hierarchy.

What is a Taskmaster Rules Application?

Very simply, a *Taskmaster Rules* application is a Data Capture application in which tasks are governed by rules applied to objects of a Document Hierarchy.

Taskmaster Rules applications fall into two broad categories:

- A *pre-configured* application is a fully developed prototype with a clear and limited focus. *Invoice*, for example, concurrently processes invoices in a variety of formats, submitted by multiple vendors. *1040EZ* is a "demo" application you can use to assemble and re-assemble every element of *Taskmaster Rules*. *Express* permits operators at remote locations to initiate scanning and data entry procedures via the World Wide Web. Because a *pre-configured* application is a prototype, it promotes customization on your part.

- An *undeveloped* application is the product of your creativity (with, perhaps, some assistance from your Datacap Solutions Provider.) With an *undeveloped* application, you are responsible for assembling the elements of the application almost from scratch. These elements are described in the next section.

Elements of a Taskmaster Rules Application

The chart on the next page depicts the structure and principal elements of a *Taskmaster Rules* application.

☛ An application is an entity with two, distinctly different sides. **Configuration** is responsible for setting up the application. **Operation** launches, runs and monitors the application's jobs and their tasks in accordance with your Configuration specifications. This text explains both aspects of your application.

Configuration Elements

Configuration of a *Taskmaster Rules* application is responsible for:

Element	Description	Documentation
Document Hierarchy	An organization structure with objects at four levels: **Workflow/Batch**, **Document**, **Page**, **Field**. You use the *Document Hierarchy Setup* window to construct and modify a Document Hierarchy.	**Primary:** *Guide to Taskmaster Rules*, Chapter 3. **Secondary:** *Guide to Batch Pilot*, Chapter 3; *Guide to Taskmaster Web,* Chapter 5

Taskmaster Rules Application

CONFIGURATION

Document Hierarchy

 WF Batch

  Document A

   Page A1 (Source)

    Field A1-a

    Field A1-b

   Page A2

Rule Manager

 Settings File

 Rules Database

 Document Hierarchy

Permanent Fingerprints (Source)

 Fingerprint Class G

  Fingerprint G-1

  Line A

   Word A-1

   Word A-2

   Word B-1

   Word B-2

  Line B

  Zones

   Word A-1/Field A1-a

   Word B-2/Field A1-b

  Fingerprint G-2

 Fingerprint Class H

  Fingerprint H-1

  Fingerprint H-2

Rules

 RuleSet Type N

  N_Rule1: Field A1-a

   Action a

   Action b

  N_Rule2: Field A1-a

  N_Rule3: Field A1-a

Task Projects: WF Batch

 Task Project - Independent Task: ITP1

  Setup **Form**

  Runtime **Form(s)**

  Task Project - Settings

 Task Project - Rule Runner Task: RRTP1

  Setup **Form**

  Runtime **Form(s)**

  Task Project - Settings

Task Modules

 Task Module - M_ITP1

 Task Module - M_RRTP1

Workflow Hierarchy

 Workflow Definition: WF Batch

  Job Definition: WF Main

   Task Definition - IT1

    Task Module: M_ITP1

    Task Setup

    Task Settings

   Task Definition - RR1

    Task Module: M_ITP1

    Task Setup

     N_Rule1: Field A1-a

     N_Rule2: Field A1-a

    Task Settings

Application Security

 User Definitions

  User ID's and Passwords

  Job-Task Permissions

  Administrative Privileges

 User Group Definitions

 Station Definitions

 Job-Task Shortcuts

OPERATION

Operations Window

 Job-Task Shortcuts

Batches

 Creation

 Organization

  Documents

  Pages

 Contents

  Images

  Data Files

  Batch Contents Files

 Deletion

Scanning

Image Management

Recognition

Verification

 Data Entry Panels

Validation

 Lookup Databases

Export

 Files

 Databases

FixUp

Administrative Tools

 Job Monitor

 Task Monitor

 Station Monitor

 Report Viewer

 AutoDelete

 Log Viewer

 Taskmaster Client Service

 Enhanced Notification Utility

Elements of Taskmaster Rules Configuration (continued)

Element	Description	Documentation
Rule Manager	The utility you use to define fingerprints, zones and RuleSets. Although *Rule Manager* is an essential configuration workshop.	**Primary:** Chapters 3-4 of the *Guide to Taskmaster Rules* show you how to use *Rule Manager's* tools to carry out essential configuration steps. The accompanying *Rule Manager Reference* examines details of *Rule Manager* setup; sectors and icons of the **Rule Manager Window's** *Fingerprints & Zones* panel and its *Rules* panel; and the nature and use of each action.
Fingerprints	Templates containing detailed specifications of fields found on a document's **source** page. A *pre-configured* application such as *Taskmaster Invoice* employs multiple fingerprints. The *Express* application, on the other hand ,does not use any fingerprints; the *1040EZ* application has one.	**Primary:** Chapter 4 of the *Guide to Taskmaster Rules,* and Chapter 3 of the *Rule Manager Reference*.
Rules	Special-purpose procedures involving the objects of the Document Hierarchy to which they are bound. A rule belongs to a RuleSet of a particular RuleSet Type, and is made up of individual actions.	**Primary:** Chapter 5 of the *Guide to Taskmaster Rules,* and Chapter 3-4 of the *Rule Manager Reference*. **Secondary:** Chapter 3 of the *Guide to Batch Pilot*, and Chapter 5 of the *Guide to Taskmaster Web*.
Task Projects	Task software assembled in the *Batch Pilot* workshop. Each Task Project features a **setup** form, a **runtime** form and a **Task Settings** dialog – and is linked directly to a workflow's Document Hierarchy.	**Primary:** Chapters 1-3 of the *Guide to Batch Pilot.* **Secondary:** Chapter 6-10 of the *Guide to Taskmaster Rules.*

Elements of Taskmaster Rules Configuration (continued)

Element	Description	Documentation
Task Modules	Linkages connecting Task Definitions to Task Projects.	**Primary:** Chapter 6 of the *Guide to Taskmaster Rules.* **Secondary:** Chapter 3 of the *Guide to Batch Pilot;* Chapters 3-5 of the *Guide to Taskmaster Web.*
Workflow Hierarchy	Definitions of an application's processing entities at three levels: **Workflow**, **Job** and **Task**.	**Primary:** Chapter 6 of the *Guide to Taskmaster Rules.* **Secondary:** Chapter 6 of the *Taskmaster Windows & Dialogs* Reference and Chapters 4-5 of the *Guide to Taskmaster Web.*
Application Security	Definitions of an application's users, workstations and Job-Task shortcut icons. These definitions determine – and limit – access to the application, its setup and administrative procedures and its operations.	**Primary:** Chapter 5 of the *Taskmaster Administrator's Guide;* **Secondary:** Chapter 5 of the *Taskmaster Windows & Dialogs Reference;* Chapter 3 of the *Guide to Taskmaster Web.*

Operating Elements

Operators and Supervisors – even Administrators! - use **Taskmaster Client** or **Taskmaster Web Client** to initiate and manage the operations of a *Taskmaster Rules* application. Elements of an application's operations include:

Element	Description	Documentation
Operations Window	A window with a set of Job-Task shortcut icons. These icons allow authorized individuals, working from authorized stations, to launch specific tasks assigned to specific jobs.	**Primary:** Chapter 4 of the *Taskmaster Windows & Dialogs Reference.* **Secondary:** *Guide to Taskmaster Web,* Chapter 3

Elements of Taskmaster Rules Operations (continued)

Element	Description	Documentation
Batch	A workflow's processing container.	**Primary:** *Guide to Taskmaster Rules*, Chapter 6. **Secondary:** *Rule Manager Reference,* Chapter 4;
Scan Tasks	Tasks that scan paper or images; create new batches; and add Image files to the batch.	**Primary:** *Guide to Taskmaster Rules,* Chapter 7. **Secondary:** *Guide to Taskmaster Rules,* Chapter 6.
RuleRunner Tasks	*RuleRunner* tasks that apply RuleSets in various categories to objects of the Document Hierarchy. Most *RuleRunner* tasks operate in the processing background as they: apply rules that discriminate between page types; match the current page to a pre-defined fingerprint; locate fields on the fingerprint and *recognize* their values; add *recognized* values to a new Data file that a task has generated for the page; and validate and export data.	**Primary:** *Guide to Taskmaster Rules*, Chapter 8. **Secondary:** *Rule Manager Reference,* Chapter 4; *Guide to Taskmaster Rules*, Chapter 6.
Verify Tasks	Tasks that present a qualified operator with a ***Data Entry*** panel that he or she uses to compare the *recognized* value for a particular field with the scanned *image* of that value. After the operator accepts or modifies the *recognized* value, the task updates the page's Data file. A Verify task may also submit the values in certain fields to **Validation.**	**Primary:** *Guide to Taskmaster Rules*, Chapter 9. **Secondary:** *Guide to Taskmaster Rules*, Chapter 6; *Rule Manager Reference,* Chapter 4; *Guide to Taskmaster Web,* Chapter 5-6; *Guide to Batch Pilot,* Chapter 3.
Export Tasks	*RuleRunner* tasks that extract data from a ***source*** page's Data file; assemble an Export Record using this and other data; and add the Export Record's information to an Export file or database.	**Primary:** *Guide to Taskmaster Rules*, Chapter 8. **Secondary:** *Rule Manager Reference,* Chapter 4.

Elements of Taskmaster Rules Operations (continued)

Element	Description	Documentation
FixUp Tasks	Tasks that review and repair problem batches and their contents	**Primary:** *Guide to Taskmaster Rules*, Chapter 10.
Administrative Tools - Operations	Windows, dialogs and utilities that help Administrators and Supervisors track the application's status, progress and productivity.	**Primary:** *Taskmaster Windows & Dialogs Reference*, Chapter 5 (Monitors); *Taskmaster Administrator's Guide*, Chapter 6 (*Report Viewer*) and Chapter 7 (*AutoDelete*). **Secondary:** Chapter 3 of the *Guide to Taskmaster Web*.
Operating *Taskmaster Rules* in a *Taskmaster Web* Environment	How to Run a *Taskmaster Rules* application via the World Wide Web.	**Primary:** *Guide to Taskmaster Web*, Chapter 5. **Secondary:** Other chapters of the *Guide to Taskmaster Web*.

How to Access a Pre-Configured Application

Many of the examples and illustrations in this text come from *pre-configured* applications such as *Taskmaster for Invoices* and *1040EZ*. To access an application such as *1040EZ,* for example, take these steps:

Step	Action
1.	Check to be sure your Taskmaster Server Service is up and running.
2.	Select **Datacap Taskmaster** from your Start button's list of **Programs**.
3.	Open the **Applications** folder and select **1040EZ**
4.	Double-click on the **1040EZ Client** icon. When the *User ID & Password* dialog appears, enter your Security Codes.

✓ The **1040EZ** icons (as an example) also give you immediate access to the application's *Rule Manager*.

✓ Identical options are available in the **Datacap Taskmaster** folder of your computer's desktop.

Taskmaster 5 vs Taskmaster 6

The structures of *Taskmaster* applications defined in a *Taskmaster 6.0* and earlier environments use FormSpecs(.fs) instead of Document Hierarchies (.xml). The section below shows you how to convert a FormSpec to a Document Hierarchy.

How to Convert a FormSpec to a Document Hierarchy

☛ If you are upgrading from a *Taskmaster* application that employed a FormSpec (.fs), you can take the following steps to convert it to a Document Hierarchy (.xml).

Step	Action
1.	Locate the FormSpec file (.fs) in your current application's **Process** directory. Decide on the name and location of the new Document Hierarchy file (.xml)…probably the Process directory as well. *Alert!* Although the name of the Document Hierarchy *file* does not have to be the same as a workflow's Document Hierarchy, we *strongly recommend* that you use identical titles.
2.	Click on your Widows Start button and select the **Run** option.
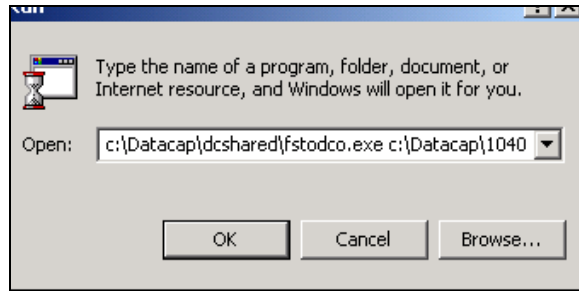
Step	Action
3.	In the **Open** field, enter a value similar to the value below, with the *1040EZ* application for examples (**bold** type is for emphasis):

```
c:\Datacap\dcshared\fstodco.exe c:\Datacap\1040ez\
  process\1040ez.fs c:\Datacap\1040ez\process\
  1040EZ_Rules.xml
```

Step	Action
4.	Press the OK button to carry out the conversion.
5.	Check the contents of the target directory to be sure the new Document Hierarchy file (.xml) is in place.

✔ This procedure assigns FormSpec properties to components of the Document Hierarchy. After a close investigation, you may decide to remove certain of these properties and add others. Chapter 3 thoroughly examines the structure of the Document Hierarchy and the use of the *Document Hierarchy Setup* window.

Chapter 2 of the *Rule Manager Reference* shows you how to "borrow" files from your **Datacap** configuration's **New Application** directory as you install and setup a *Rule Manager,* a Rules databases, and various Settings files (.ini).

Typographic and Terminology Conventions

This guide uses the following typographic and terminology conventions.

Convention:	Example:
Menu names are in **Bold** type.	From the **Objects** menu…
Menu commands are in **Bold** type.	From the **Objects** menu, select the **Add Child** command.
Object types are in **Bold** type.	A Document Hierarchy has one **Batch** object.
Object names are in *Italics.*	The name of this **Page** object is *Invoice_Page*.
Tab names are in *Italics*.	The *ICR/C* tab of the ***Recognition Parameters Setup*** dialog.
Panel names are in *Italics.*	The *Rules* panel of the ***Rule Manager Window*** takes care of RuleSets, rules and actions.
Dialog names are in ***BoldItalic*** type.	The ***Login*** dialog has **User ID** and **Password** fields.
Window names are in ***BoldItalic*** type.	The ***Rule Manager Window*** defines fingerprints and rules.
Field names are in **Bold** type.	Enter a value in the **ID** field of the *Fingerprints/Zones* panel.
Button names are in Regular type.	Click on the OK button.
Drop-down list items are in *Italic* type.	The *kScan* module is an option in the **Task Module** drop-down list.
Datacap product and application names are in *Italic* type.	*Taskmaster, Batch Pilot* and *Rule Manager* are Datacap products. *1040EZ, Invoice*, *Express* and Survey are applications.

If You Need Help

Here is the number for Datacap's technical support:

☎ **914-259-1300**

Please note that if you need to **fax** Datacap technical support, the fax number is:

☎ **914-366-0500**

If you want to **e-mail** Datacap technical support, here is the e-mail address:

✉ **support@datacap.com**

About this Book

The *Guide to Taskmaster Rules* has the following chapters.

Chapter 1: Welcome

Chapter 1 introduces you to *Taskmaster Rules* and its applications, and to this text.

Chapter 2: Overview of the Taskmaster Application

This chapter examines the components of a *Taskmaster* application:

- Objects at the four levels of the application's Document Hierarchy: **Batch, Document, Page and Field.**

- The rules that are bound to objects of the Document Hierarchy…and the actions that power each rule.

- The jobs and tasks that run the application as they scan paper (or images), and recognize, verify, validate and export the data in each *source* page.

Chapter 2 also introduces you to the Taskmaster Application Wizard, which you can use to set up a new application.

Chapter 3: How to Assemble the Application's Document Hierarchy

This chapter carefully explains the purpose and structure of a Document Hierarchy as an essential component of a *Taskmaster Rules* application. Chapter 3 investigates objects at the hierarchy's four levels: **Workflow/Batch**; **Document**; **Page** and **Field**.

After a thorough review of the ***Document Hierarchy Setup Window*** and its menus, the chapter shows you how to assemble a new Document Hierarchy; how to add and remove objects at each level; and how to add, remove and modify an object's properties

Chapter 4: How to Define an Application's Fingerprints

A fingerprint is a template with a full set of information about a *source* page – about a page that contains the data that a workflow's tasks will locate, recognize, verify, validate and export. During processing, a Recognition task attempts to match the current page to a fingerprint you've defined. When a match occurs, the task uses the fingerprint's properties to find and process data in the fields of the current page.

This chapter's opening section explores the steps involved in the development, testing and modification of fingerprints.

The chapter's next section shows you how to **zone** fields or blocks of the fingerprint; how to link zones to objects of the Document Hierarchy; and how to assign **recognition parameters** to a zoned field or block.

Chapter 5: RuleSets, Rules and Actions

After examining the nature of the different RuleSet Types, and the contents of their RuleSet Action libraries, Chapter 5 shows you how to define a new RuleSet Type and how to set up its library.

The chapter follows up with a close look at the composition of a RuleSet – its rules and their actions; at the binding techniques that link a RuleSet to an object of the Document Hierarchy; and at the steps you take to assign actions to a rule.

Chapter 6: How to Define Workflows, Jobs, and Tasks

Chapter 6 starts off with an examination of the *Taskmaster Administrator's Workflow* tab – and of tools and procedures for assembling a hierarchy consisting of a workflow, its jobs, and their tasks.

It then reviews the development of Task Projects in the *Batch Pilot* workshop, and at specifications in the tabs of a project's *Task Settings* dialog.

The third section shows you how to define a new task based on a particular Task Project.

Chapter 7: Scan Tasks

This chapter first examines the setup and operation of the *rules-based* vScan tasks. It then describes the setup and operations of kScan tasks that employ Kofax drivers, and of iScan tasks that uses ISIS drivers.

Chapter 8: RuleRunner Tasks

Chapter 8 looks at the steps you take to set up the "background" tasks that fall into the *RuleRunner* category…typically, Recognition, Validation and Export tasks. Chapter 8 also shows you how to run these tasks.

Chapter 9: Verify Tasks

Chapter 9 closely examines the relationship between the *source* **Page** object of your application's Document Hierarchy and the expected structure and field content of the Verify task's *Data Entry* panel. The chapter shows you how to automatically generate the panel and, if applicable, add or remove fields.

The second section explains how you set up a Verify Task Project, and put together a Verify Task Definition.

The concluding section is an operator's guide to the panel, and to basic Data Entry procedures.

Chapter 10: FixUp Tasks

A FixUp task resolves problems encountered by other task. Chapter 10 investigates the nature and definition of a problem, and the ways FixUp tasks respond. The chapter

concentrates on the setup and operation of tasks with rescan procedures involving Kofax drivers (kFixUp) and those that use ISIS drivers (iFixUp).

Glossary

The Glossary defines key *Taskmaster Rules* terms.

Index

This is an alphabetical listing of topics covered by the *Guide to Taskmaster Rules*.

Related Documentation

The texts described below are available in printed form, and as PDF documents in the **Docs** folder of your **Datacap** directory.

The *Rule Manager Reference* outlines the steps you take to install and configure an application's *Rule Manager* utility. It also describes the functions and features of the **Rule Manager Window**, and of its *Zone Recognition Parameters* dialog. The closing chapter reviews the purpose and parameters of all *Taskmaster Rules* actions.

The Task Projects that are the foundations on for an application's tasks are designed and developed in the *Batch Pilot* workshop. The *Guide to Batch Pilot* introduces you to the tools of this workshop and examines *Batch Pilot's* Task Development techniques. This guide also explains the role of the **Task Settings** dialog as an element of a Task Project and as a source of specifications for individual Task Definitions.

The *Guide to Taskmaster Web* explores all facets of applications which take full advantage of the World Wide Web to initiate tasks from remote locations. Much of this text concentrates on t **rules-based** applications.

A set of core *Taskmaster* texts thoroughly investigates topics which are applicable to all applications:

- The *Administrator's Guide* covers the installation of **Datacap** software; the setup of clients and servers; application security; report generation; and the batch deletion utilities.

- The *Windows & Dialogs Reference* describes the features of the User Interface for Taskmaster Client and Taskmaster Server.

In addition, Help files are immediately available for Taskmaster Client; *Batch Pilot;* individual pages of the Taskmaster Web Site; and for *Taskmaster Rules* actions.