Installation Guide

for Central Count and OCR Systems

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Introduction

This Manual explains the software requirements of the Central Count System, and provides installation instructions for the various components.

A Central Count System might support either or both of the following applications:

- Scanning and processing of mark-sense ballots

- Scanning and processing of OCR forms and envelopes.

This Manual is therefore divided into three chapters:

- Common software components, required for all systems.

- Additional software components required for ballot processing.

- Additional software components required for OCR processing.

There is also a troubleshooting chapter.

Installation procedures are *not* provided for software components that are pre-installed by the scanner manufacturer (Scan-Optics), or that are provided with simple installers.

The Appendix provides details of installing custom software written for specific customers.

This Manual assumes a basic working knowledge of Windows and how to run popular Windows utilities and MS Access.

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Common Software Components

Software components required on all systems include:

- Microsoft Windows NT 4.0 (Service Pak 6)*

- Scan-Optics utilities for scanner configuration and testing (Front Panel, VBDemo, VICS, etc.)*

- Kofax drivers for 1700V scanner card*

- Kofax Image Controls Version 3.23 software library

- Central Count Image Processing DLL package (GESCD.DLL, OCRDLL.DLL, CCDLL.DLL, and associated files)

- Database of voters and trays.

- WinZip 7.0 or later

- Microsoft Access 2000

- Microsoft Visual Basic 6.0 (only needed for on-site software modifications)

Items marked * are pre-installed by Scan-Optics.

Folder Organization

This Manual assumes that the following folders have been created prior to installation:

Table 1 . *Required Folder Tree*

Folder Path	Contents
D:\VoteRemoteIncoming	Applications and database
D:\VoteRemoteIncoming\CCDLL	Image processing DLLs
D:\VoteRemoteIncoming\Data	Root folder for scanned images

Installing Kofax Image Controls

This software library is supposed to be pre-installed by the scanner manufacturer. However, it may not be, or it may be the wrong version.

To install the Kofax Image Controls:

- Insert the Image Controls 3.1 CD-ROM.

- If the setup program does not start automatically, launch **Setup.exe**.

- Follow the instructions on the screen.

This installs Image Controls version 3.1.

To update to Image Controls 3.23:

- Obtain the update installer. If not available, it can be downloaded from **ftp://ftp.kofax.com/AHRT323/AHRT323.exe**. This file is a self-extracting ZIP file.

- Launch **AHRT323.EXE** and extract its contents to the **D:\Temp** folder.

- Launch **Setup.exe** in the **32Bit** folder.

Installing Image Processing DLLs

To install the image processing DLLs:

- Verify that WinZip 7.0 or later is installed on the system.

- Obtain a copy of the current distribution archive for the DLLs, named **CCDLLVer<NN>.zip**, where <NN> is the 2-digit version number.

- Extract the ZIP file contents to the **CCDLL** folder, making sure to update any existing files with the ZIP version.

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• **Copy or move the files listed below to the folders indicated.**

Table 2 . *Target folders for files*

Target Folder	File Names
C:\WinNT\System32	I3SPEC32.dll
CRDE96V3.dll	
I3TIF32.dll	
D:\VoteRemoteIncoming	CCTest.exe
WindowReader.exe	
FormEdit.exe	

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Software Components for Ballot Processing

[To follow]

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Software Components for OCR Processing

Additional software components required for processing OCR forms and envelopes include:

- QuickStrokes OCR library and Form Studio utility (Mitek Systems Inc.).

- Customer-specific form templates.

- User dictionaries.

- Custom Visual Basic and database applications.

Installing QuickStrokes and Form Studio

To install QuickStrokes and Form Studio:

- Install the QuickStrokes dongle in the computer's parallel port. If a printer or other device is already using this port, unplug it, plug in the dongle, then plug the existing device into the dongle.

- Locate the QuickStrokes API CD-ROM, and insert it in the CD-ROM drive.

- If the CD-ROM's AutoRun feature is enabled, the QuickStrokes installer will run automatically. Otherwise, launch the **Setup.exe** application found at the CD-ROM's root level.

- Follow the installation instructions on the screen.

Installing Form Templates

Each new design of an OCR form requires a special template file that defines the locations of the OCR fields and other objects on the form. Associated with each template is a sample image file (in TIFF format). These files are created by GES technical staff prior to system installation.

The template file has the filename extension ".frm" (not to be confused with Visual Basic form files, which have the same extension). The sample image file must have the same name, but with a ".tif" extension.

To install form templates:

- Obtain the template and sample image files for each of the customer's form designs.

- Copy these files to the **CCDLL** folder.

Installing User Dictionaries

Occasionally a customer's OCR application will require the use of special dictionaries to validate OCR results. These files can be created by either GES technical staff or by the customer. They are named **Dict<NN>.lst**, where <NN> is a 2-digit dictionary number.

Procedures for creating custom dictionaries, and details of required file formats, are provided elsewhere.

To install a user dictionary:

- Obtain the files containing the user dictionaries.

- If the **CCDLL** folder does not contain a **UserDict** sub-folder, create it now.

- Copy the user dictionary files to the **UserDict** folder.

Installing Custom Software

Installation procedures for custom software are rarely the same. However, the following general notes will apply in many cases:

- If the application has special installation instructions, these should be followed instead of the notes below.

- Each application should have its own primary folder, located in either the **D:\VoteRemoteIncoming** or **C:\Program Files** folder. This folder will normally contain files providing the main executable (.exe), online help (often .hlp), configuration (.ini), and supporting data.

- Special DLLs required by the application should be copied either to the application's main folder (if the DLL is not shared with other applications), or to the **C:\WinNT\System32** folder (if it is shared).

- Database applications often make use of a DSN file (.dsn). These files should be copied to the folder **C:\Program Files\Common Files\ODBC\Data Sources**.

- If the application is used by customer staff, add a short-cut to the desktop for fast access.

- Make sure that program preferences are properly configured.

- Make sure that passwords are properly configured and provided to appropriate customer staff.

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Troubleshooting

Scanner Troubleshooting

[more to follow]

Image Processing DLLs

These DLLs have the ability to generate log files as they are used. To activate this feature, open the **CCDLL.ini** file in Notepad, and change the second line to read

> **DebugMode=1**

Save the change and exit NotePad.

Log files are written to the **Logs** subfolder in the **CCDLL** folder.

When debug mode is activated, the routines for reading window envelopes also output a TIFF file of the last window read. This file is named **LastWindow.tif**, and is written to the **CCDLL** folder.

To de-activate debug mode, change the second line in the .ini file back to

> **DebugMode=0**

OCR Results File

Use of any OCR routines generates a tab-delimited text file of OCR results. For example, after processing the image files in folder **X**, this folder will also contain the results file **X.txt**. This file is created regardless of the debug mode status.

Each line of this file represents one form or envelope, i.e. one record. Each line contains the fields read from the form, separated by tabs.

The first field is the original image filename (without extension). The remaining fields contain the OCR results, in the order determined by the QuickStrokes template file (see next section). Image clip fields (such as signatures) have a null string in their position.

OCR Field Order

The field order in the OCR results file is determined by the template file. Unfortunately the Form Studio utility used to create template files stores fields in an unpredictable order. This will often cause a fatal mismatch between the field order in the file and the field order expected by any application processing the file.

A second utility (**FormEdit**) has been provided to verify the field order in a template file, and to correct it as needed. This utility *must* be used after a new template is created, and after any changes are made.

To verify and correct a template's field order:

- Launch the **FormEdit.exe** application in the **D:\VoteRemoteIncoming** folder.

- Select File > Open, and open the desired template file (.frm extension).

- Check the field order displayed on the screen.

- To move a field, select it from the list, then choose **Up** or **Down** to move it to the correct location.

- Select File > Save and exit the program.

Appendix A

Colorado Installations

This Appendix provides special installation instructions unique to envelope scanning installations for Colorado counties.

This installation requires the QuickStrokes template and sample image files listed below. These files must be copied to the **CCDLL** folder.

Table 3 . *Colorado template files*

Filenames	Description
ColoStandard.frm/tif	Standard envelopes (3 counties)
ColoElPaso.frm/tif	Special El Paso county envelopes
ColoWindow.frm/tif	Window envelopes
ColoTest.frm/tif	Smaller envelopes used in testing

Colorado OCR does not make use of any user dictionaries.