



Whitepaper

Document Solutions

ScannerVision™ 3



Contents

Contents.....	2
Introduction	3
ScannerVision™ introduction	4
Concept.....	4
Components.....	4
Deploying ScannerVision™	5
Supported Operating Systems	5
Running under Virtualization.....	5
Hardware Recommendations	5
Deployment Considerations	5
Installing	5
Communications.....	5
Using ScannerVision™	6
Overview	6
Document Workflow	6
Metadata	6
Forms Processing	8
Operation	9
Desktop Client.....	9
Special Desktop Client Packs.....	9
Desktop Client Boost Pack	9
Desktop Client Automate Pack	9
Desktop Client Expert Pack.....	9
Embedded Client.....	10
Virtual Ink.....	10
Security	11
User Authentication	11
Encryption	12
Communication	12
Extending ScannerVision™	12
Connectors	12
Scripting.....	13
SDK.....	13



Introduction

In today's economic climate organisations are actively looking to increase efficiency and save costs. Consumers are also becoming aware of the costs associated with document production, distribution and storage.

ScannerVision™ is an advanced, user-friendly document capture solution which enables users to scan, digitize, route, store and optimise their business critical information. Created with the philosophy of manageability, reliability and flexibility, but above all simplicity, ScannerVision™ can operate from the panel of many popular multifunctional devices, or from the PC desktop.

With a touch of a button, even inexperienced users can start to utilise document workflows, formatting and correctly tagging critical information and ensuring it reaches the right destination: automation promotes efficiency, reduces errors, and saves money.

Welcome to ScannerVision™.





ScannerVision™ introduction

Concept

The technology and functionality in ScannerVision™ is utilised by organisations to facilitate policy-driven data capture and storage. It is designed around the belief that operators should be insulated from the complexities of document processes and policies, in order to increase efficiency, minimise errors and reduce training requirements.

The functionality in ScannerVision™ can be categorised into three groups:

- **CAPTURE:** File capture via multifunctional, desktop client or existing electronic media (such as TIFF file archive).
- **PROCESS:** Image enhancement; form, character and barcode recognition.
- **STORE:** Transfer to document storage system or distribution via corporate address book to file server.

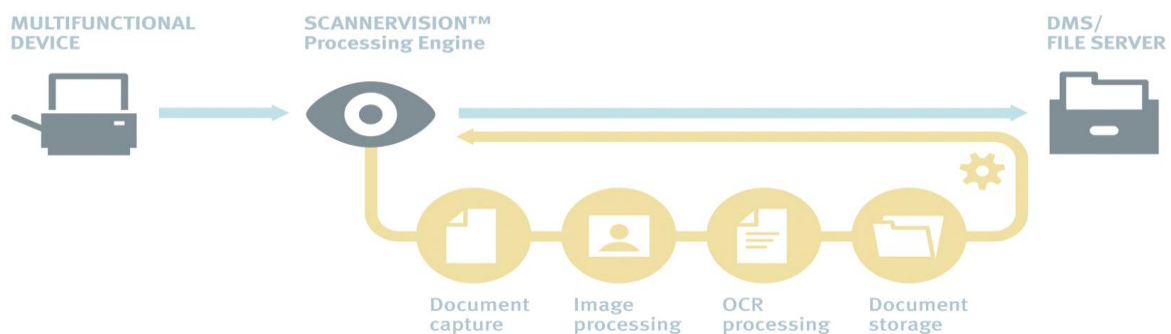
Document workflow *templates* are created centrally (by a system administrator) and automatically distributed to each scanning client connected to the ScannerVision™ processing engine, ensuring all users have the correct settings and policies at all times.

Components

ScannerVision™ is made up of several components which can be categorised into four sections:

- **Clients:** input functions such as desktop, multifunctional embedded and web.
- **Modules:** throughput processes such as character, barcode and marks recognition.
- **Connectors:** facilitates output to a variety of platforms and document systems.
- **ScannerVision™ Processing Engine:** application which hosts modules and connectors and communicates with clients.

A document workflow usually starts with a client, if the documents are in hardcopy format.



An example of a simple document distribution workflow



Deploying ScannerVision™

Supported Operating Systems

The ScannerVision™ Processing Engine application can be deployed to the following Windows platforms:

Windows 2000/Professional/Server Service Pack 4
Windows XP Service Pack 3 32-bit
Windows Vista Service Pack 2 32-bit
Windows 7 Professional 32-bit
Windows Server 2003 Service Pack 1 32-bit
Windows Server 2008 Service Pack 2 32-bit

The 32-bit version is compatible in 64-bit environments.

Running under Virtualization

The ScannerVision™ Processing Engine is supported in virtual hardware environments, such as Microsoft Virtual Server and VMWare.

Hardware Recommendations

The hardware requirements for ScannerVision™ Processing Engine will depend greatly on the operating system selected, desired performance and workload placed onto it. Suggested configurations are as follows:

	Suggested Minimum	Recommended
	Dual Core 2GHz	Quad Core 2.66GHz
CPU	2GB RAM	4GB RAM
Memory	40GB	160GB
Disk	100Mb	1Gb
Space		

Many components in the ScannerVision™ Processing Engine are **multithreaded**, or designed to run as a separate process. Therefore these components may benefit from multicore-enabled operating systems and hardware.

Deployment Considerations

Installing

The ScannerVision™ Processing Engine installation executable contains all pre-requisite runtime libraries. Once configured, it operates as a Windows service and may be left unattended.

Likewise, the ScannerVision™ Desktop client installer is self-contained and can be deployed to each PC as required.

Communications

As standard, multifunctional and desktop clients connect over a TCP socket using port **1983**. This can be changed to a different port from the Settings screen in the Processing Engine and clients, if required.



Using ScannerVision™

Overview

In order to get the best from any document capture and processing system a clear “document policy” should be in place before any software is installed. The complexity and depth of this policy will depend on the size of business. An electronic document policy could be as simple as “store invoices into this directory” to extremely complicated policies defining enterprise data storage, cross-referencing information stored in corporate databases.

ScannerVision™ has been designed in a flexible way so that it may be easily integrated into any environment and enforce and policies whilst insulating the user from the complexities, ensuring it's as simple as possible to operate.

Document Workflow

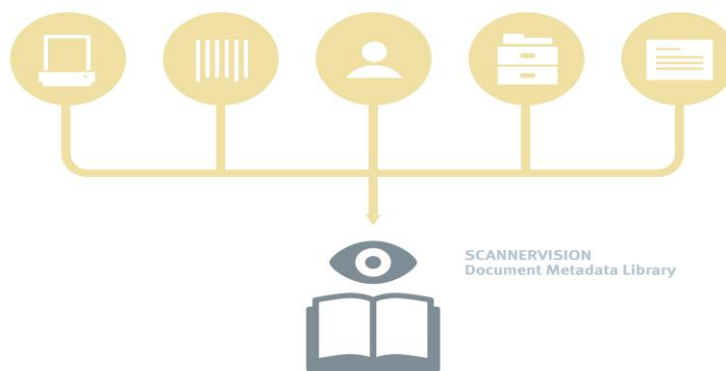
Document workflow *templates* are created at the ScannerVision™ Processing Engine console where they can be automatically deployed to all connected clients, once saved. Templates define the workflow, from capture to storage, and all of the processes in between. Once created, the administrator can decide on which devices and for which users the template is available: this ensures the user can see just the workflows which pertain to their job, or the area in which the multifunctional device is located (e.g. administration or finance).

The primary purpose of ScannerVision™ is to automate as many document processing tasks as possible, reducing human errors and improving efficiency.

Metadata

The process of automation requires in-depth information to make decisions in the filing and routing of documents. This information, or metadata, can come from a variety of sources, such as:

- Date and time of processing and document name
- Name of authenticated user from Desktop or multifunctional client
- 1D or 2D barcodes on the document
- Lookups from databases and results of scripts
- The result of zonal or document OCR text, OMR, ICR and MICR
- Answers to user-prompted questions
- Forms recognition
- Etc.



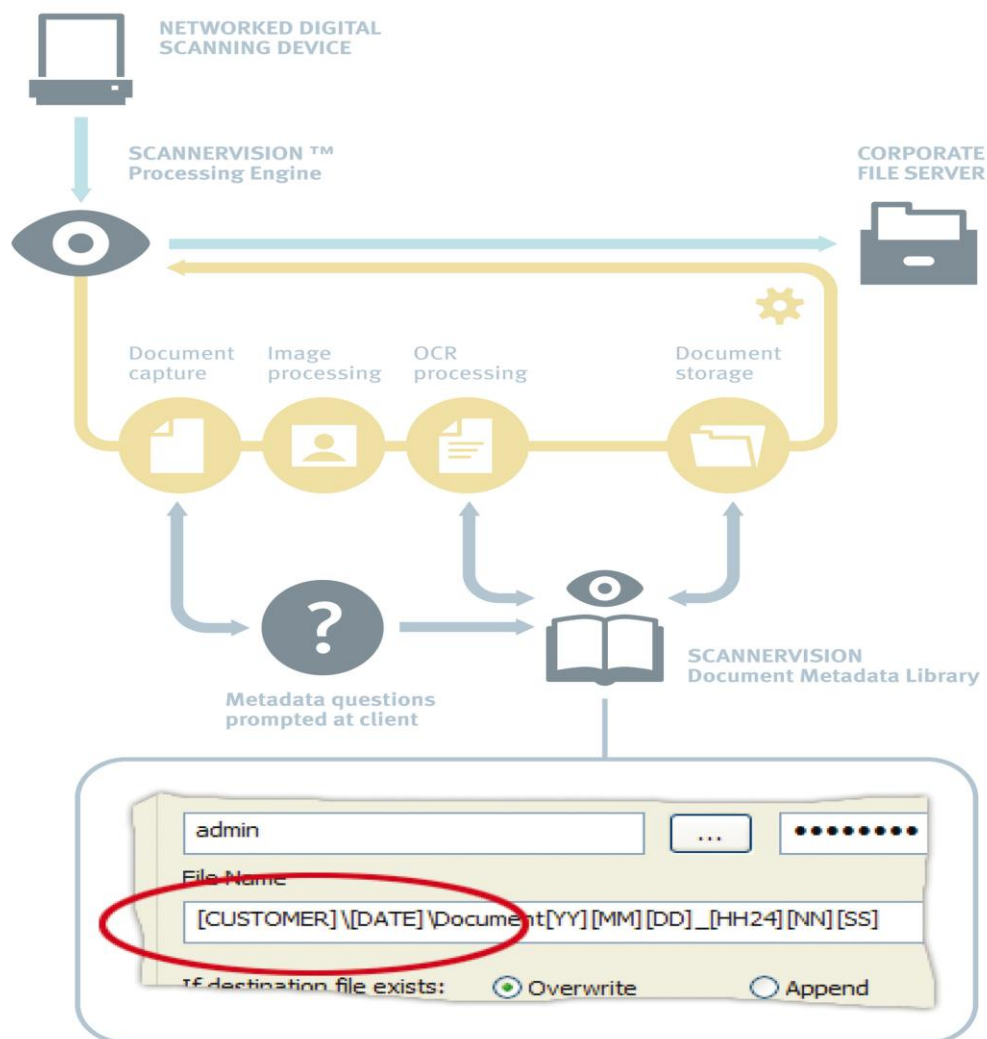
The ScannerVision™ document metadata library is populated from many different sources



When defining the metadata to extract, the administrator may tag this data so that it can be referenced later.

A simple example

An administrator has created a workflow template for scanning customer invoices. The list of customers is automatically populated and updated from an existing enterprise database; the scanner operator simply has to make a selection from the list, for example "ABC Ltd". In the workflow template the administrator uses a tag (for example [CUSTOMER]) to reference this metadata.



Metadata utilised to automatically file documents

The extracted metadata may also be exported, in a variety of formats, for backup or reporting purposes.

Metadata is the cornerstone for accurately automating processing and filing tasks. With such a vast range of information extraction options, Scannervision™ offers unparalleled potential for automation.

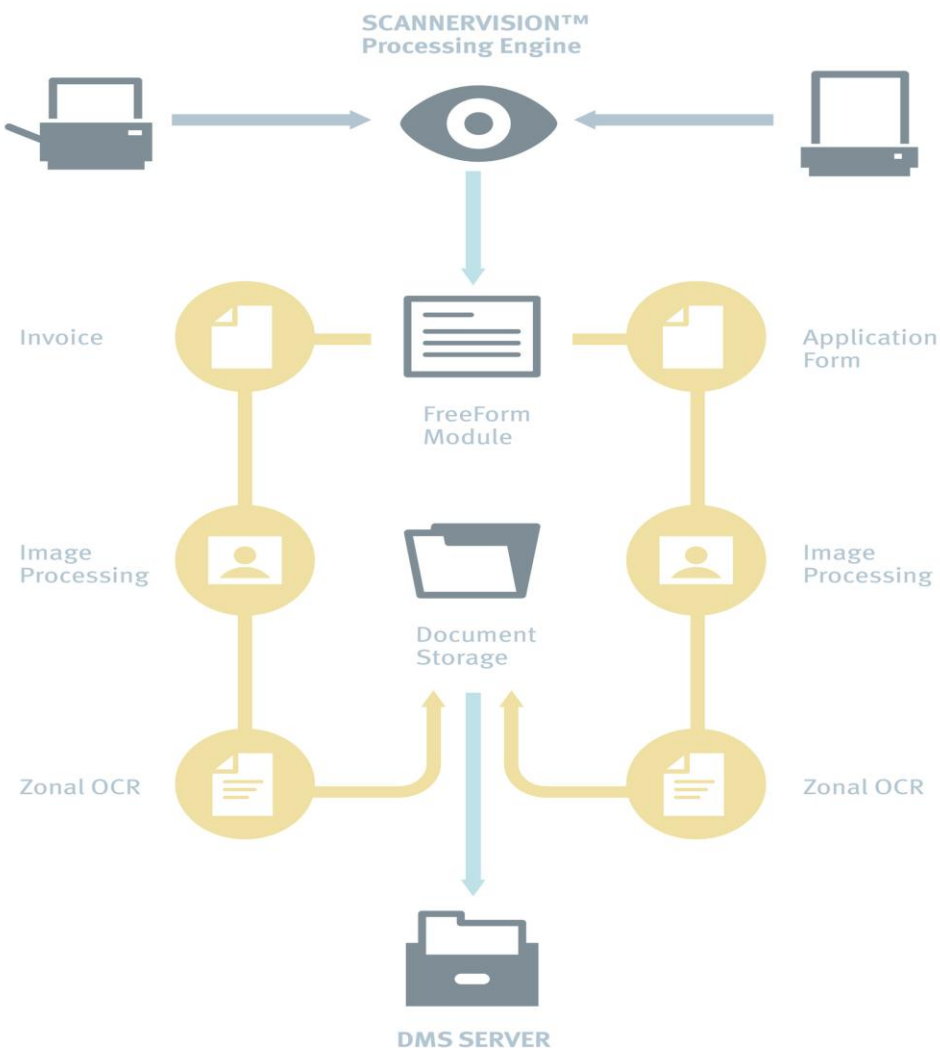


Forms Processing

ScannerVision™ offers significant benefits when capturing and extracting data from forms. Existing technologies, such as barcode detection and zonal optical character recognition, can significantly assist users when it comes to automatically extracting data from forms and filing documents in the correct location. However there is one caveat; the user has to know exactly which type and version of document they are scanning.

With the ScannerVision™ FreeForm module option, this guesswork is a thing of the past. The FreeForm recognition engine can automatically match the scanned document to any one of the form-types registered at the Processing Engine. For each different form-type a separate sub-workflow can be created, defining all of the parameters for zonal recognition and metadata extraction and ensuring the document reaches the correct destination. Forms detection is based on a *confidence* level which can be set by the administrator and calibrated from within the Processing Engine console.

ScannerVision™ can also detect multiple form types within the same document, and process and route each individual form accordingly.





Operation

After the initial configuration at the Processing Engine console, most of the operation of the solution is done via one of the ScannerVision™ clients.

Desktop Client

The Desktop client is a Windows application which connects to the ScannerVision™ Processing Engine and guides the operator through the document capture process. Documents may be acquired by scanning with an installed TWAIN driver, or by importing existing electronic files (e.g. files from a TIFF archive).

Users may browse the document after the acquisition and, if required, may answer any metadata questions defined in the template to complete the process. Some metadata questions can be flagged as requiring an answer before scanning can proceed, ensuring that files with missing information are a thing of the past.



*Pressing the Desktop client's **Store** button finalizes the capture process*

Special Desktop Client Packs

Desktop Client Boost Pack

The Boost version of the Desktop client incorporates advanced bi-tonal compression technology (ABC) inside the client. This has a positive impact on the performance of scanning 1-bit (monochrome) data over long distances as the scanned data is compressed up to 8 times more than standard PDF encryption. The upon reaching the destination Processing Engine the proprietary ABC format is automatically decrypted and converted into whichever format is specified in the workflow template.

Desktop Client Automate Pack

The Automate edition of the Desktop client implements on-the-fly zone OCR into the scanning client. This is of particular use to scanning operators who are required to index large amounts of data using information on the document. With the Automate option the operator simply needs to select the required metadata question and draw a marquee around the area of the document which requires the information. Automate will perform rapid OCR on that document area and put the resulting data into the selected metadata question, negating the need for the operator to type in the data and thus removing the potential for errors and saving time.

Desktop Client Expert Pack

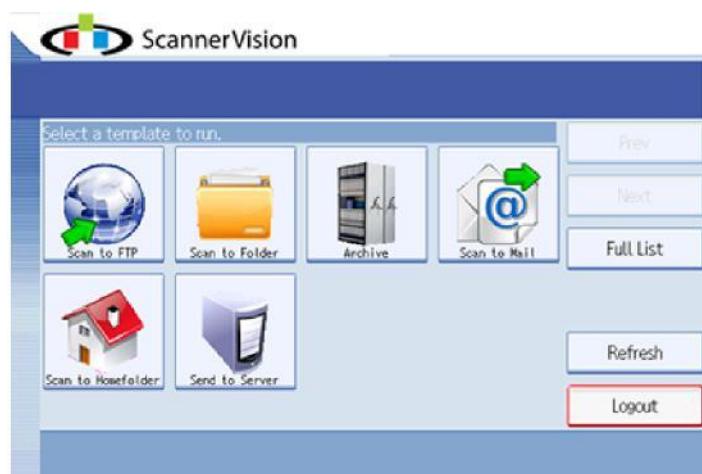
The Expert option combines the Boost and Automate options into one, fully-featured desktop client capable of scanning, indexing and transmitting large volumes of data, directly into document systems.



Embedded Client

ScannerVision™ offers an embedded client for many of today's modern, multifunctional devices. These embedded clients offer an effortless way to access the power of ScannerVision™ in the office, using an interface very similar to that of the Desktop client.

Users are able to scan documents into complex workflows, simply by selecting a pre-made template and answering a few simple questions. Contact the ScannerVision™ marketing department for a list of currently supported multifunctional devices.



The operating panel of a ScannerVision™ 3 enabled multifunctional device

Virtual Ink

ScannerVision™ also offers the Virtual Ink system as a method of submitting files into the workflow. By utilising a digital pen and a unique microscopic pattern of dots, handwriting may be recorded simply and efficiently. Simply dock the pen in its cradle after writing, and you'll be presented with a crystal clear PDF or TIFF copy of the document.

ScannerVision™ VI uses a special printer driver which adds a unique pattern of micro-dots to the document as it is printed, and an image of the document is automatically stored on your computer for reference.

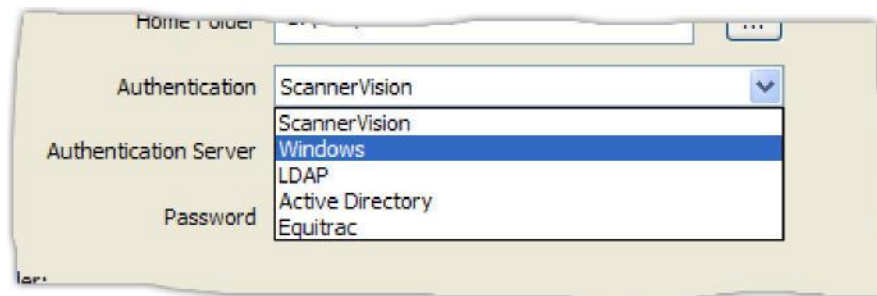
ScannerVision™ VI's special pattern of dots enables the digital pen to automatically sense its location and record handwriting in its memory. When the pen is docked in its cradle, the recorded ink is downloaded and matched with the image of the original document – instantly creating an exact copy of the handwritten document in your desired electronic format.



Security

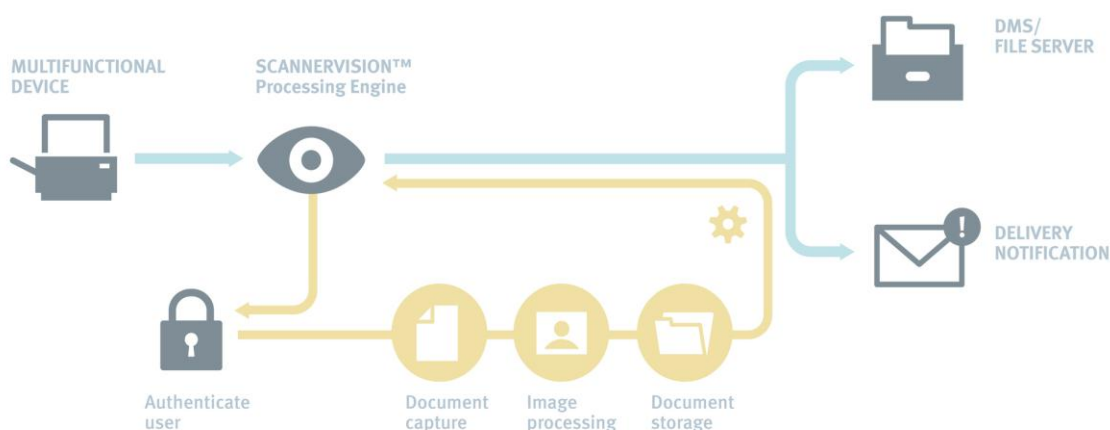
User Authentication

ScannerVision™ has several methods to authenticate users to the system:



- Windows authentication retrieves user account information from the operating system.
- LDAP and Active Directory authentication methods use existing corporate address books to authorize users.
- Equitrac authentication queries an Equitrac server's user account information.
- ScannerVision™ authentication utilizes the Processing Engine's own user account list and is useful for small organizations that have none of the above.

Once authenticated, the user information is made available from the metadata library. This, in turn, can be used to generate automatic email notifications to alert users when a file is delivered to the destination. In addition, each user's actions are monitored and tracked so that billing for document capture time and volume becomes a possibility.



Automatic notification using authenticated user metadata

Although authentication is beneficial in terms of security and activity tracking, it is optional; ScannerVision™ can be configured with or without this option enabled, for standalone devices or small organizations.



Encryption

Communication

Network traffic can be automatically encrypted between ScannerVision™ clients and the Processing Engines, using Advanced Encryption Standard (AES-128).

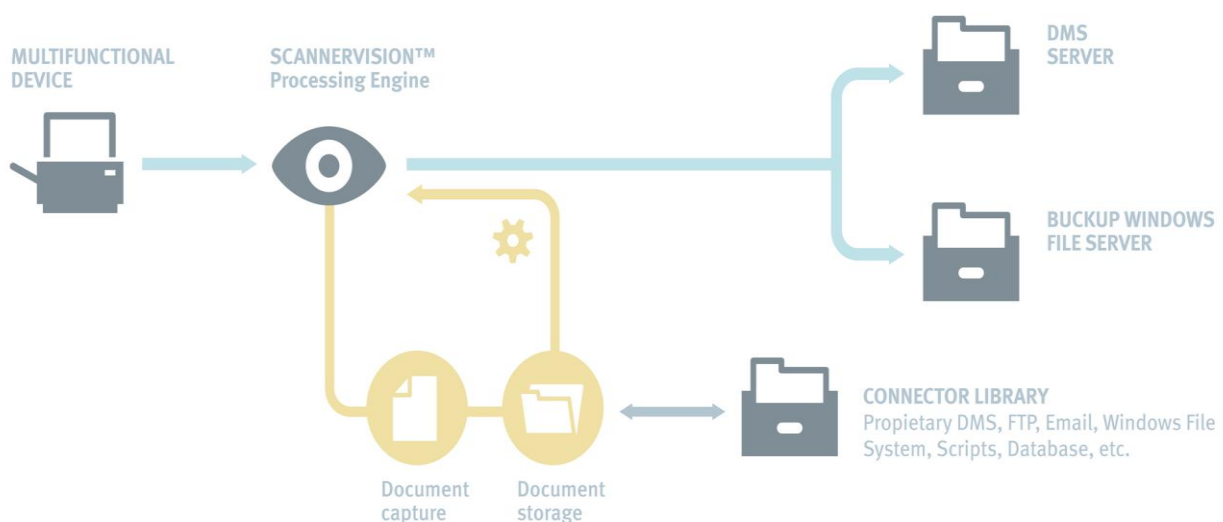
The performance of the encryption process from the multifunctional device is dependent on the hardware available to the embedded client. Therefore this option is user-configurable should a user require greater speed during the scanning process.

Extending ScannerVision™

Connectors

Connectors are used by ScannerVision™ to connect the Processing Engine to proprietary document management systems and file servers. Connectors have full access to the documents metadata library and may perform any file-based task, such as format translation, file transmission and document system communication.

Registered connectors are managed by the Document Storage module, where connectors' settings may be configured and managed. Each document workflow template may have multiple connectors configured, so that a workflow may have multiple destinations for the scanned document.



Multiple document destinations are possible with the Connector library

ScannerVision™ currently has many native connectors for various document management systems, databases and file systems. Please contact the marketing department for an up-to-date list of supported connectors.



Scripting

Having entire control over the automation aspects of document filing is one feature that makes ScannerVision™ so powerful and such a benefit in the office environment.

In order to enhance the automation capabilities, ScannerVision™ supports scripting, in JScript or VBScript, to enable the workflow to make dynamic decision as to where to file documents. These scripts have full access to a document's metadata library and, in turn, can connect to corporate database's or create on-demand file structures to ensure the documents are correctly filed according to the current environment.

This enables an administrator to configure a system to make decisions and file documents in a rapidly changing environment whilst still enjoying the benefits of total automation.

For more information and examples for advanced scripting, and extending ScannerVision™ with extra functionality, please contact the New Dynamic Software marketing department for a copy of the Solutions Cookbook.

SDK

ScannerVision™ Connectors are native Windows dynamic link libraries (DLL's) which are called during the storage phase of the document processing cycle. For developers wishing to understand how to create connectors for ScannerVision™ please contact the marketing department for information on how to register for the developer's kit and training.