



## **White Paper**

June 7, 2000





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# IDEA White Paper

## ***The Emergence of the Digital Object***

As we pass into a new millennium, image capture is undergoing a tremendous evolution. Traditionally, the business paradigm has been to capture important business information contained in paper or film documents by imaging those documents and converting them into usable digital information, which can be accessed and shared by all qualified users. This approach, currently widely accepted and practiced in industry and government, represents a monolithic digital imaging approach.

Today, however, the rapid pace of technological advancements is creating massive changes in the way companies and organizations conduct business. Technological advancements -- particularly in the areas of e-mail, digital imagery, video, voice and audio technologies, as well as telecommunication, networking and Internet technologies have matured and become "enablers" that help companies and organizations improve business processes, increase productivity, and reduce costs.

The digital information age is here and it has forever changed the primary means of communicating -- the business document. No longer is paper and film the only medium of exchange for business information. Today, people communicate in real time, online, via their computers. Not only do they share electronic data, but they also share information from video, photographic, and audio sources. As a result, the business document of yesterday has become the digital object of tomorrow.

## ***The Integrated Digital Environment***

To facilitate "digital objects," a new environment is emerging -- the Integrated Digital Environment (IDE). Enabled by the availability of mature technologies and established industry standards, IDE is a dynamic information environment that supports business activities and provides immediate access to information. The critical element of IDE is *access* -- access to any digital object or data from any database within any data warehouse, anywhere on any network including the Internet, from any terminal, workstation or personal computer.

PowerScan, Inc. recognizes the emergence of IDE and understands that tomorrow's image capture systems must support IDE environments. But to support IDE, the traditional monolithic "production pipeline" approach to image capture commonly used must evolve. In a typical



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production pipeline system design, for example, paper or film documents enter the system via a scanner and then the images are further processed or enhanced through stages that address such capabilities as indexing, image enhancement, OCR, and formatting. Additional processing such as forms or item processing is performed separately.

## ***The Best New IDEA in Imaging***

Today, PowerScan has revolutionized its approach to image capture to support IDE. PowerScan has designed the **IDEA** suite of software products to address organization's need for digital object processing in an Integrated Digital Environment. **IDEA** represents a paradigm shift from the current monolithic digital imaging systems to a comprehensive Integrated Digital Environment. With **IDEA**, the capture of digital objects is now information centric as opposed to media centric. Now users will be able to satisfy their processing requirements e.g., forms, item, image, etc, with an integrated system configured for their unique processing requirements as well as utilizing a common set of digital objects.

PowerScan's **IDEA** is a new platform designed to acquire, process, store, and deliver today's advanced digital objects. Whether these objects are paper documents, faxes, forms, e-mail, digital images from cameras or video, or any other digital object, **IDEA's** flexible, modular, open architecture is the platform from which a digital object solution should be built. As with all PowerScan products, **IDEA** is a complete working solution designed for use "out of the box", or easily modified to address unique processing requirements.

## ***Industry Standards***

**IDEA** was designed and developed with widely accepted industry-leading development standards, such as COM, DCOM, and ActiveX, which provide easy access to all parts of the system. It is further differentiated from other available products by its use of standard SQL data sources to store information, allowing users to utilize existing in-house SQL databases or choose from among available SQL databases<sup>1</sup>. Since **IDEA** is fully integrated with Microsoft Windows NT security, user security is handled through the NT environment. In the event the NT security model is not used, **IDEA** provides its own security features.

## ***Easy to Use***

**IDEA** puts control of the application and processing in the hands of the end user. No longer are users bound by what the software can do; **IDEA** is easily configured to create powerful capture

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<sup>1</sup> Currently supports Microsoft Access, Microsoft SQL Server, and Oracle



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solutions. Simply point, click, and order the necessary processes to create an index structure and **IDEA** is ready to capture virtually any type of document. **NO PROGRAMMING NECESSARY!!!** All this power is managed with centralized administration, which equates to improved system control and reduced downtime due to configuration errors.

## ***Robust Scalability***

The scalability of **IDEA** provides a common “look and feel” and the ability to expand from the desktop up through the entire enterprise. Users can start with a desktop package connected to a small database such as MS Access and then move to a departmental system using NT SQL for a mid-size system. As needs expand to the enterprise the system can scale to satisfy enterprise-level requirements. Regardless of the environment, **IDEA** was designed to grow with users’ needs.

## ***Building Blocks of the IDEA System***

**IDEA** is based on a simple building block concept that places the application building into the hands of the user. This elegant and simple building block concept gives the end user full control over how data is captured and processed. It also makes **IDEA** extremely flexible. **IDEA** uses this building block concept to efficiently process digital objects. With most digital objects, there is a requirement to perform a number of distinct actions on the object before it reaches its final destination. These actions occur in a logical sequence as the object travels through the system. **IDEA** wraps these similar actions into **Engines** and provides two distinctively different methods to control and combine actions within the system. Unique to **IDEA**, clients may be configured to run multiple Engines simultaneously within a single application called an **Agent**. The sequence, in which these Engines functions, is called Engine Flow. With virtually limitless combinations of Engines within an Agent, **IDEA** provides the most cost-efficient use of hardware and improved system performance. **IDEA** takes this concept one step further by providing **Job** based Agent Flow. By sequencing Agents within a job, **IDEA** can be configured with a concise set of steps needed to process your digital objects. When used efficiently, this ability to distribute actions presents the user with the most powerful means to process digital objects.

## ***Security***

**IDEA** is fully integrated with Microsoft Windows NT security allowing administrators to utilize either NT security or **IDEA's** own security features. Regardless of which security model is chosen, **IDEA** supports both user level and group level security. Users and Groups rights are assigned to both Agents and Jobs providing powerful control over access to the **IDEA** system.



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## ***Power of Connectivity***

**IDEA** uses the power of [Microsoft's Windows Script Technologies](#) to provide an event driven method for external system connectivity and the format and export captured data and object. By using Windows Script Technologies, **IDEA** provides access to powerful scripting languages like VBScript, Jscript and other compliant script engines. This scripting capability provides almost limitless access third party tools and systems. Example usages of this capability are limitless. Connect to legacy database system for database look up's. Extend **IDEA's** processing power by adding in third party object and data processes. Connect to Microsoft Exchange to store captured data or send email alerts to administrators.

## ***Flexibility of Output***

In addition to connectivity, **IDEA's** scripting capabilities provide powerful format and export capabilities. Captured data and objects can easily be exported directly into target system or formatted into traditional intermediate files. The most powerful example of formatted file output is using export scripts to create HTML and/or XML files for use with the Internet. **IDEA** now becomes a powerful platform to front-end WEB based systems.

## ***User Customizable***

The design of **IDEA** protects a user's investment by providing for future technology changes. **IDEA's** modular architecture permits the introduction of new digital objects through the use of Snap-ins. With Snap-ins, new object processes can be quickly developed and installed without system disruption. This Snap-in concept is applied to the entire system -- from client and server processes to data storage.

## ***IDEA for Imaging***

The first release of **IDEA** is centered on Imaging. It provides a complete capture and processing solution for paper, microfilm, color documents, fax and digital camera input. Subsequent releases will bring sound, full motion video, e-mail and many other types of digital objects, together with these image formats, to provide a single point of entry for all digital objects. **IDEA** is the culmination of many years of experience gained through working with PowerScan's customers and represents the next generation in image and object processing ... the Integrated Digital Environment. With **IDEA**, users can harness available technologies to truly integrate their business documents and processes into the Integrated Digital Environment.



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## **IDEA System Features:**

- Truly scalable from Desktop to Enterprise
- Configure and run multiple job configuration simultaneously
- SQL data storage makes ODBC connection easy for add-ons like Reporting or custom data extraction
- Easy Implementation

### **Management**

- Easy administration
- Central configuration
- Flexible Process Flow definition
- Flexible user defined index structures
- Multiple job definitions
- Security assignment
- Client-side user profiles
- Digital Object manipulation and management
- Real time process monitoring
- No coding or scripting is required to get the system up and running

### **OS Platforms**

- Microsoft Windows 95
- Microsoft Windows 98
- Microsoft NT 4.0
- Microsoft Windows 2000

### **Extendibility**

- ODBC
- COM
- DCOM
- ActiveX
- VBScript, Jscript, and Others

### **Single User**

- Fully functional system designated to run on a single client
- Manual and Automatic Client Process Flow

### **Multi User**

- Distributed multi client system
- Automatic multiple System Process Flow and Client Process Flow



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## **IDEA Client Features:**

- Fully multithreaded 32-bit application
- Easy to use and familiar user interface
- Common User Interface components
- Definable user profiles
- Run any process on any client
- Run multiple Engines simultaneously on a single client
- Multi-function client design reduces hardware requirements

## **General Client Features**

### **Indexing**

- Multi-level hierarchical index structure
- Apply indexing values during any process (Pre Scan, Post Scan)
- Simple, user friendly indexing interface
- Allows customized index field lengths and labels
- Make fields optional or required
- Masked index fields
- Automatically apply data to range of records
- Keyboard oriented to improve keystroke speed

### **Quality Control**

- Quality control features are available in all operator processes
- Verify the quality of any Digital Object in the system
- Mark Objects for Rework
- Ad-hoc cleanup functions
- Multi-Image viewer
- Complete control over images in view
- Easy scroll feature to minimize confusion moving from image to image
- On image annotations and mark up
- Multi-select capable allowing simultaneous operations such as rotate or invert
- Easily identify images marked for deletion, rotation, rework, etc.
- All movement and manipulation achievable through the keyboard
- Zoom, Pan, Zoom Lock one or more images simultaneously

### **Rework**

- Combines Scanning, Indexing and QC features for powerful rescan/rework
- Rework only batches that require attention
- Rescan images of unacceptable quality
- Re-enter incorrect or missing index information
- Insert missing Objects

## **Engines**

### **Scanning**

- Runs supported scanners at full rated speed without accelerator boards
- Control front and rear cameras separately on duplex scanners (Scanner permitting)
- Capture from Paper, Film, or Digital Cameras
- Define and save Job configurations
- Provides image cleanup and barcode processes when not included in the scanner



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- Color scanner support with JPG compression
  - Variable front and rear control to automatically dropout blank or separator pages
  - Common user interface across all supported scanners
  - Rubber band function to determine Page Size (Film Only)
  - Driver Support:
    - PowerScan, Inc.'s proven driver technology
    - TWAIN 1.7 Drivers
    - Kofax Adrenaline Cards (via Kofax provided TWAIN driver)
    - Virtual Rescan Scanners

### **OCR**

- Full page or zone OCR
- Multiple file type output (text, MS Word, Excel, etc.)
- Up to 99 individual zones
- Extract text or images from any defined zone
- Graphical zone definition
- Apply extracted data to fields in a jobs index structure or to external files
- Auto rotate and orient
- User definable dictionaries
- Auto Deskew

### **Image Enhancement**

- Automatic, Batch, or Ad-hoc manipulation
- Deskew
- Despeckle
- Noise removal
- Auto rotate
- Batch Rotate
- Apply filters
- Invert
- Endorse
- Character enhancement
- Character protection

### **Printing**

- Local or network printer
- Standard or high-speed printer
- Batch or single image print
- Send print jobs to the printer according to your index structure e.g. send each document to printer as a print job

### **Barcode Reading**

- Multiple barcode types
- One or many barcodes per page
- Insert value into any index field
- Patch Page emulation

### **Endorsement**

- Brand index data directly onto TIFF image
- Great for Bates Stamp requirements
- Use translate text files to Endorse image based on an index value



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- Choose endorsement font, color, and size
  - Use a barcode font to encode index data directly on the image

### **Scripting**

- Event driven
- Write scripts in VBScript, Jscript or other certified scripting languages
- Access third party application
- Incorporate third party processes
- Create formatted output files

### **IDEA Server Features:**

- Use NT server or Windows 95/98 as your system server
- All server side processes are registered as NT services when using NT system servers
- Server operations and data storage is separated allowing users to choose where locate their database
- Run Server on separate PC or all together on the same PC

### **Open Database**

- ODBC communication
- MS Access
- MS NT SQL
- Oracle

### **Security Model**

- Integrated NT security model
- System provided security model

### **Centralized Administration**

- Job creation and management
- Agent creation and management without programming
- Agent Flow creation and management without programming
- Index Structure creation and management
- Digital Object management
- Batch Control
- Remote administration



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## ***The IDEA Suite of Products:***

**IDEA** comes in single user and multi-user system. Standard **IDEA** features include, Indexing, Quality Control, Rescanning, Multiple Job Configurations, and Multi Image Viewer, along with integrated NT security.

### ***Single User Systems***

#### **IDEA Capture**

Capture is designed as an entry level image capture only product with a single point of entry, the scanner and a single point of export, the IDX file. Capture provides only one Agent that has access to only TWAIN scanner drivers and the ability to enhance image quality at scan time. Data is stored in an ASCII fixed length file (PowerScan's standard IDX file.)

#### **IDEA Capture Plus**

Capture Plus includes everything in Capture and adds the following: access to PowerScan's proven scanner driver technology, access to Microsoft's Windows Script Technologies and database storage of capture data. Capture Plus includes two Agents, the first for scanning, and the second for export. Export scripts are written in standard VBScript or Jscript and can be customized to meet specific requirements. Capture Plus also includes batch queuing capabilities, enabling the user to automatically export queued batches.

#### **IDEA Desktop**

Desktop adds several new functions to the system. First, it includes all available Engines: Scan, Cleanup, OCR, Print, Script, Endorse, and Barcode. Second, it gives the end user the ability to mix and match these engines and create their own Agents. This is achieved simply in the Administration tool with a point and click. For example, users can create OCR Agents for zones, or OCR Agents for full test, or even combine Engines to more complex processing like OCRing a value that is used to do a database look up. As with Capture Plus, Desktop provides automatic batch queuing, allowing the end user to queue up many batched and then processes them all in an automatic fashion.

### ***Multi-User Systems***

#### **IDEA Enterprise Server**

Enterprise Server introduces full automation and multi-user capabilities. With an Enterprise Server, customers can connect multiple users to one **IDEA** system and increase overall throughput. In addition, batches flow through an Enterprise system in a fully automatic



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manner. This means that interactive Agents, such as Indexing, the user selects Run and the next available batch is automatically loaded. For fully automatic Agents, such as OCR, when Run is selected the Agent will continually process batches until the user select stop. A well-configured system can be dispersed throughout the enterprise providing true enterprise wide capture and processing capabilities. In addition to enterprise wide connectivity, Enterprise Server adds a second method for customization. End Users or VARS can use the COM interface of an Engine and create their own engines for specific processing needs.



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## ***About PowerScan, Inc.***

Founded in 1990, PowerScan is a pioneer in image capture and processing. The company is credited with developing the industry's first image capture and processing software, currently available in fourth-generation releases. In 1999, PowerScan is again leading the industry with the development of **IDEA**, Integrated Digital Environment Access, a revolutionary new platform designed to acquire, process, store and deliver today's advanced digital objects – anytime, anywhere. Based on true industry standards, **IDEA** is the most flexible and scalable object capture and processing platform available today. **IDEA** will support all major scanners, as well as input from video, audio and digital sources, including the Internet. Its flexible, open platform allows users to integrate any enabling technologies – whether OCR, forms processing, item processing or any other technologies – they require for efficient operation of their businesses. All input, process and output functionality is accessible at the desktop in response to today's varied office, departmental and enterprise business requirements.

Today, PowerScan, Inc. is helping knowledge workers in more than 500 companies and government organizations improve their business processes, reduce costs and improve productivity. PowerScan is a subsidiary of Star Technologies, Inc. and is located at 7 Pidgeon Hill Dr., Sterling, VA 20165. Telephone: (703) 430-8227. Fax: (703) 430-7920. E-mail: [info@pwrscan.com](mailto:info@pwrscan.com) Internet: [www.pwrscan.com](http://www.pwrscan.com)

