

Preserving the world's knowledge -Available Anytime Anywheresm

Data Enhancement System[™]

(Patent Pending)

System Description and Process Documentation Why Should You Use DES!

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TABLE OF CONTENT

DATA ENHANCEMENT SYSTEM™ (DES™)	. 4
DIRECT DATA SOURCE MONITORING	. 5
INTEGRATION WITH DATA GENERATION SOURCES	. 6
WHY USE DES?	. 7
What can you do with DES?	
DATA ENHANCEMENT SYSTEM™ ARCHITECTURE	. 8
DES [™] IMPLEMENTATION & PROCESSING DESCRIPTION	. 9
DES™ SCALABILITY & HIGH PERFORMANCE ARCHITECTURE	11
DEFINITION OF TERMS	13



Data Enhancement System™

The Data Enhancement System[™] (DES[™]) (Patent Pending) enhances a file's content by assigning automatically generated metadata from its integrated technologies. DES is a middleware software component of CDI's product suite. DES is comprised of novel computer operated methods and systems which simultaneously access varied electronic data files residing in multiple Data Sources or delivered by a Data Generation Source.

DES manages the augmentation process of the electronic content delivered by any Data Generation Source. DES monitors its input queues while simultaneously processing the content of data files received. In one single pass through the DES process, DES will automatically assign metadata to the content received, then (a) update the content at the Data Source or (b) return the metadata assigned to the Data Generation Source. DES can also be configured to take actions on the data file based on the metadata values assigned. Actions may include the migration of the data file, setting values to certain parameters or notify of the existence of the data file being processed.

DES provides a distributed and scalable architecture that enables all of its components to be configured across multiple machines without restriction of location in the network. DES takes into account hardware characteristics that enable DES to execute in the particular hardware architecture of the servers it was installed. DES provides for performance tuning and software architectures such as multithreading.

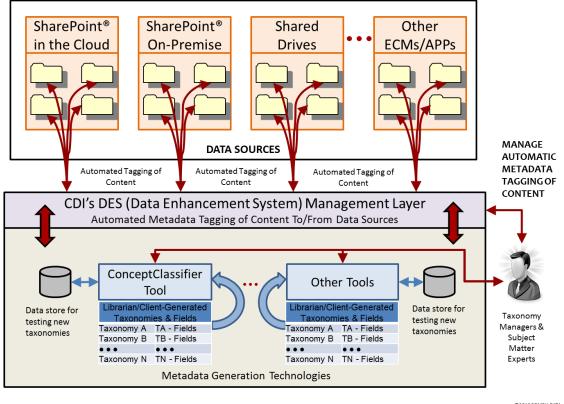
The enhancement of electronic content is managed with rules defined in DES and associated technologies. For On-Premise and Cloud Computing ECMs and specifically for Microsoft® Office 365, and SharePoint® 2013, DES is ideally positioned by providing the flexibility and control normally lost in The Cloud.

DES is designed to integrate with technologies that process text, audio, image and video content.



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Direct Data Source Monitoring



DIRECT DATA SOURCE MONITORING

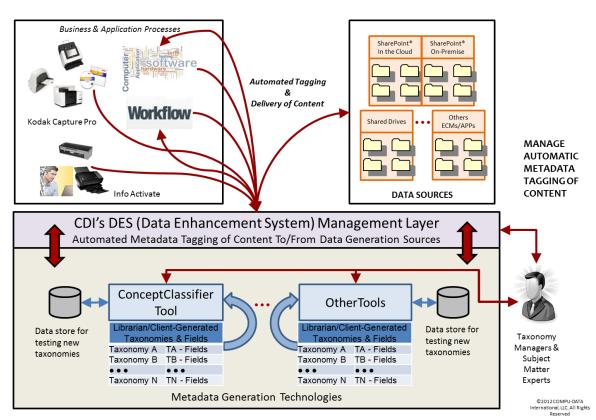
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What does DES do for Data Sources?

DES manages the augmentation process of the electronic content found in the locations of Data Sources being monitored. DES monitors each location simultaneously processing the content using the metadata generation technologies configured. In one single pass of the content through the DES process, DES will automatically assign metadata to the content's file properties as it resides in the Data Source or in the Data Source metadata fields assigned to the content.



Integration with Data Generation Sources



INTEGRATION WITH CAPTURE, PROCESSES & APPLICATIONS

What does DES do for Capture, Automated Processes & Applications?

DES manages the augmentation process of the electronic content delivered by any Data Generation Source. DES monitors requests in real-time simultaneously processing the content received and automatically assigning metadata to the content. In one single pass through the DES process, DES will automatically assign metadata to the content received, then return the metadata assigned to the Data Generation Source.



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Why Use DES?

What can you do with DES?

- Connect to multiple Data Sources simultaneously.
- Apply multiple technologies across multiple Data Sources using one standard interface for all technologies.
- Automatically enforce and apply corporate metadata standards throughout the organization.
- Monitors predefined locations within each Data Source and process new and changed content.
- > Process Batch or Transactional data feeds with automated Data Source updates.
- > Add support for additional Data Sources as needed.
- > Monitor Data Enhancement Performance Metrics.
- > Monitor content that is NOT being enhanced as expected.

What is the value DES brings?

DES' value is in its ability to:

- Remove human errors and subjective decisions associated with content identification which directly affect increased costs and organizational risk.
- Centralize control for the identification and augmentation of content at Corporate and Departmental levels.
- Simultaneously work with multiple Data Sources and Data Generation Sources to assign metadata based on corporate policies.
- Separate the technologies from the management of the augmentation process and rules.
- Eliminate the costs involved in the integration of classification technologies across the enterprise to accomplish what DES delivers out of the box.
- For Records Managers, DES is able to automatically apply Record Retention Schedule codes to any content regardless of its location.
- For Corporate Counsel, DES is able to automatically identify documents associated with e-Discovery requests.

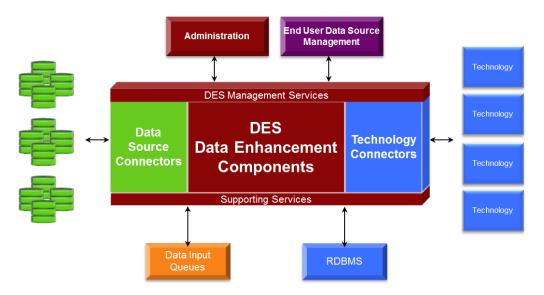


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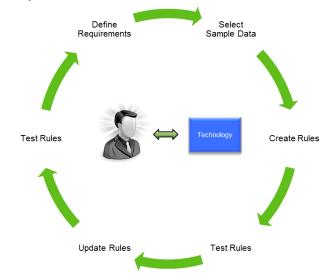
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Data Enhancement System[™] Architecture

- 1. DES processes electronic content transparently and without user intervention.
- 2. DES supports multiple Data Sources and Technologies through standardized connectors.



3. Users work with the Technologies to build the rules which automatically generate the enhancements used by DES.





DES[™] Implementation & Processing Description

Depending on the Data Source, DES will use one of its components to integrate with the Data Source and prepare information used for the retrieval and processing of the content by DES' Data Collector component.

DES receives or retrieves the information created by its components in the Data Sources and creates information records in its own data base in preparation for processing the content selected from the Data Sources. DES then flags the information record created in its data base for processing by the next step in its internal workflow.

The information record stored in the DES data base is then processed and the content plus any related metadata is stored in the DES data base. Once all the information needed for the successful processing of the content is ready, the information record is flagged for processing by the next step in the data enhancement workflow.

The content and metadata associated with each information record in the DES data base are prepared for the technologies to process. The content and metadata preparation tasks vary depending on the content format being processed and the technologies used. Once everything is successfully prepared and stored in the DES data base, the information record is flagged for processing by the next step in the data enhancement workflow.

The necessary content and metadata associated with each information record in the DES data base are now provided, by DES, to the technologies configured to process the content. DES works with each technology by providing all that was prepared and waits for a response from each technology. Once a successful response is received, DES updates the information record in its data base with the enhancements and the information record is flagged for processing by the next step in the data enhancement workflow.

DES now processes the information record in its data base, communicates with the Data Source and causes the necessary updates to happen to the content stored in the Data Source.



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If the "Return Address" (location where the content and/or metadata must be placed) of the electronic content is different from the original Data Source, DES will cause the necessary updates to happen at the Return Address assigned to the electronic content.

DES maintains information and metrics on all of its transactions, performance and/or errors.

DES provides a web based management GUI interface that enables an administrator and Subject Matter Experts to configure and manage the Data Sources and Data Generation Sources with the automatic metadata generation technologies to be used to process the content received. DES provides security and access controls for multiple subject matter experts or administrators. DES provides reporting capability and real-time performance monitoring and management.

DES provides a distributed and scalable architecture that enables all of its components to be distributed across multiple machines <u>without restriction of location</u> in the network. DES takes into account hardware characteristics that enable DES to execute in the particular hardware architecture of the servers it was installed. DES provides for performance tuning and software architectures such as multithreading.



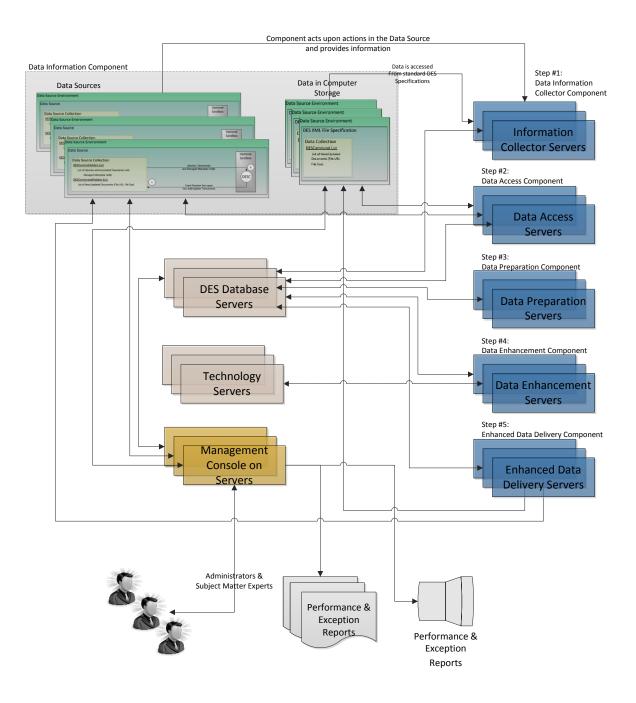
DES[™] Scalability & High Performance Architecture

The drawing in the next page illustrates an embodiment of DES related to the scalability and performance architecture, methods and components. The drawing presents a sample of how each component can be distributed and duplicated across multiple computers and across networks including but not limited to the Internet.



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Data Enhancement System (Patent Pending) Scalability and High Performance Architecture





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Definition of Terms

What is Metadata?

Any information that is added to existing data to further clarify what the data is about or identify particular properties of the content.

What is a Data Source?

The location of the data that needs to be processed by DES such as a Shared Drive, a SharePoint Library or any other data repository that can be configured with DES for automatically monitoring and the automatic assignment of metadata.

What is a Data Generation Source?

The process or application that provides data in the request it sends to DES for automatic metadata generation.

Additionally, DES accomplishes the "Enterprise Data Enhancement" process automatically and transparently to the users.

What is Data Enhancement?

- 1. Clarification of the nature of business data allowing for its accurate retrieval, identification, usage, protection and control.
- 2. Successful "Enterprise Data Enhancement" is ensuring the <u>timely, accurate and automatic</u> application of Metadata in accordance to corporate policies providing for compliance with legal, regulatory, and corporate guidelines.