UFCInc

White Paper: Distributed Data Capture: a
Necessary First Step to ECM for
Oil & Gas Companies

Table of Contents

Industry Perspective

State of the Industry: Oil & Gas Market

According to IDC Energy Insights (Catherine Madden, Aug 2010), there is a significant opportunity for companies in the upstream industry to leverage information technology (IT) to improve and fulfill their business objectives. While the digital oilfield is driving the integration of new and old technology, it has resulted in new challenges for the industry, including an explosion in exploration and production (E&P) data. Of course, the nearly exponential growth in data has been exacerbated by the global structure of oil and gas companies and the human capital challenge within the industry. To achieve competitive advantage, exploration and production companies depend on access to nearly real-time information. For oil and gas companies to secure new reserves and enhance existing reserves, information technology infrastructure needs to be aligned with the business objectives to ensure that data becomes enterprise intelligence without compromising security, speed of access, or the ability to collaborate. As such, information technology is a key pillar for the success of oil and gas companies.

Key IT drivers and their associated areas of value include:

- Information technology that is aligned with the business challenges can improve visibility of operations, increase efficiency, improve the decision-making process, and be a key enabler of improved profits and revenue.
- Demands upon security for upstream information only increase as network sharing grows between domains, geographies, and teams that are built from joint ventures.
- A solid data management foundation that supports sharing of information across domain teams and dispersed geographic resources will lead to better understanding and increased value.
- Enhanced collaboration technologies will reduce boundaries and support integrated operations, as well as enable access to a broader spectrum of knowledge workers.
- Increased standardization of systems architecture and IT support processes needs to be designed in close alignment with key business objectives.

Opportunities provided by IT

The adoption of IT by the oil and gas industry has helped to meet some of the most significant challenges in the industry, such as accessing and managing remote locations, improved insight into complex geological formations and deep-water conditions, and understanding the production potential of the reservoir.

IT has become pervasive across the oil and gas value chain and is integral to business success. It enables business operations and strategies from E&P and refining all the way to the fuel pump. It includes nearly all IT assets such as hardware, networks, instruments, and software that creates, transforms, manages, or delivers information to anywhere within the enterprise.

IT investments are largely motivated by the desire to attain business goals. According to IDC's *2010 Vertical Group Survey* of 144 oil and gas companies conducted in January 2010, investment in IT for the next year will be motivated primarily by increasing company revenue and productivity.

Based on the derived benefits from the opportunities provided by IT, many leading oil and gas companies are leveraging IT for superior performance. IT plays a vital role in creating and supporting a competitive advantage and opportunities in three key areas:

Competitive Advantage and Opportunities	UFC Inc.'s Solution Fit
Managing and integrating IT infrastructures - consisting of three primary focus areas of integration: back office, seismic processing and geological and geophysical (G&G) interpretation.	UFC fits best within the back-office portion of a company's integration plan by helping reduce many of the paper-based processes and automating workflow tasks.
Accelerating business insight - primarily focused on increasing speed of access and reducing non-productive events.	UFC can increase speed to access by enabling remote capture of information, reducing human involvement in manual entry of metadata information - thus eliminating many manual tasks.
Connecting people, partners and business - focused on providing collaboration and access to information between people, partners and across the business locations.	UFC can be best positioned to help address this area by helping with the exchange of documents in a secure environment and the ability to collaborate and solve critical business problems while accessing the same data and information.

Managing Unstructured Data

The exponential growth of structured and unstructured data is fueling the growth of information life-cycle management for upstream. Unstructured data is becoming increasingly difficult to manage, yet these data sources are critical to meet regulatory requirements. Searching unstructured data is often unproductive, and it can consume cycles that could be used for higher-value tasks.

For asset-intensive industries like oil and gas that are continuously involved in large projects, getting multiple parties together to share information has always been a challenge. Then, too, many of the newer sources of oil require more joint ventures. The holy grail is to be able to have a consistent view of up-to-date information across the project life cycle — from design bidding, to design, to construction bidding, to construction, to as built, to operations and maintenance, and, finally, to retirement of the asset. Sharing specifications, drawings, and other documents, while ensuring appropriate approvals, has always been labor intensive and subject to version confusion.

As described in the following sections, UFC's suite of products including ECM functionality can help fulfill the need for a consistent view of information throughout the project lifecycle. Additionally engineering drawings can be better managed with the MuWave Indago Engineering Drawing tracking offering developed by UFC.

Technology Perspective

State of the Industry: ECM

Capture and Business Process

According to AIIM, Market Intelligence, Capture and Business Process 2010, there has been a slow but steady increase in the number of organizations transitioning from basic scanning of paper documents for archive, to the more sophisticated recognition and capture of multi-format content as input to business processes. They have frequently recorded a strong return on investment performance from these scanning and capture projects, but, as evidenced by this year's results, there is a considerable variation in levels of adoption and maturity across this increasingly broad spectrum of activities.

Key Findings of the AIIM Report:

- The strongest driver for scanning and capture is improved searchability and knowledge sharing across the business, followed by productivity improvements, reduced office costs and better customer service.
- 66% of responding organizations have a formal scan-to-archive process, and 47% utilize some form of workflow, but only 16% scan and extract data to a process. When scanning to archive, only half use automatic recognition of metadata for indexing.
- 39% of responding organizations reach positive payback on their investments in scanning, capture and BPM within 12 months, rising to 60% within 18 months. Automatic document classification shows a particularly high return for the 19% of respondents utilizing it.
- Improved process productivity and process quality produce significant financial savings, but respondents were as likely to cite better knowledge sharing and access as providing significant financial return.
- 61% of respondents are processing scanned images, 30% are processing electronic Office files and emails, and 26% are processing faxes for data capture prior to process.
- Only 14% of organizations are using capture and BPM across multiple processes and departments.
- The most popular enterprise systems to be capture-enabled are Finance, Line of Business and HR, followed by Service, Claims and Case Processing. Generally, only half of these systems are enabled and integrated at a process level.
- 60% of respondents have one or more capture and BPM systems. Of these, 80% are looking to converge to a single system.
- Resistance to change and a lack of awareness of the possibilities of BPM were indicated as the most commonly encountered management issues arising in a capture and BPM project. Difficulties of integration with other systems, and time taken to map processes, were the biggest technical issues.

Scan-to-Archive vs. Capture-to-Process

Despite the fact that 82% of our respondents undertake coordinated scanning, only 16% are capturing data for use in a process, rising only to 27% even for the largest organizations. This does not necessarily mean that documents and forms are not being work flowed through processes, but that data is either being manually re-keyed, or is not fundamental to the process. Of the 66% of organizations scanning to archive, half are not using data capture to assist with indexing and are manually applying metadata, although a significant proportion are capturing full text for subsequent blanket searches.
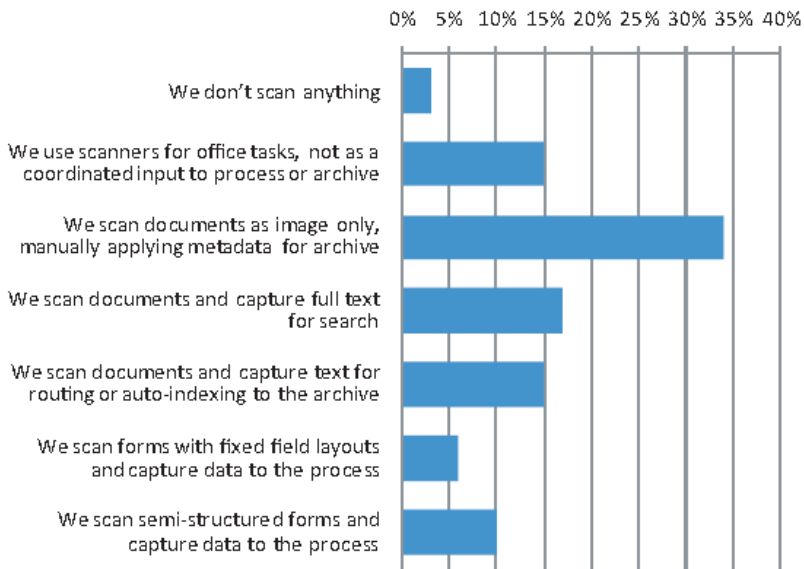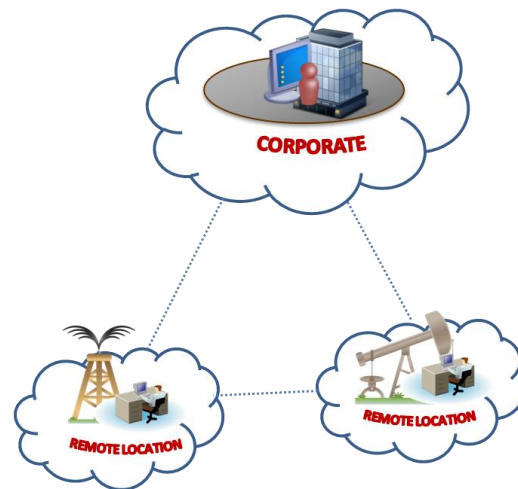
Given the ubiquity of forms used across all sizes of organization, and the potential return on investment there is considerable opportunity for savings, increased knowledge sharing and productivity in the use of data capture and automated forms processing. This is a powerful combination of benefits that UFC is uniquely positioned to provide, as described later in further detail.

The UFC Solution

In today's marketplace, reliable access to information is central in obtaining maximum value from these assets and is key to sustaining competitive advantage. Over the next five years, oil and gas companies will become only more dependent on hardware, software, and IT services to meet the global demand for hydrocarbons. Oil and gas companies need an information architecture that not only supports the diverse upstream environments globally but also provides a platform to drive performance improvements. IT needs to support integration with and access to relevant information, but do so in a way that can be easily deployed to address a departmental need, quickly, cost effectively and with minimal disruption to the organization.

Executives and Line-of-Business professionals recognize the value in a holistic enterprise-wide solution, yet numerous impediments often hinder an organization's ability to accurately assess the undertaking's feasibility, rapidly make a decision and smoothly manage the deployment to successful completion. One thing is certain: success first starts with finding, capturing and managing an enormous amount of relevant content through internal and often external work processes.

The global nature of the document capture environment can be a significant road roadblock in the oil and gas industry. On one hand the centralized content manager server can be located in single geographically strategic location near the central management infrastructure making it a relatively easy to deploy and maintain. On the other hand the document capture requirements for the industry represent a challenge because of the widely separated locations of these locations. Capturing these documents and the time sensitive data contained within them, such as vendor shipping documents or employee expense records, represents a decentralized capture requirement. The nature of oil and gas exploration and production is global and field based. A successful

Remote locations or field operations are often challenged with low bandwidth and lack of technical expertise.

deployment of a distributed document capture system to this wide geographical landscape has to rely on minimal systemic resources at the capture sight and extreme flexibility in the makeup of the document capture process.

UFC, Inc. is uniquely qualified to meet these challenges. UFC is a consulting, integration and solutions development firm preferred by clients in the Oil and Gas Industry for their quality, innovation and integration expertise. UFC provides capture, enterprise content management software, support and integration services - based on a flexible architecture and common set of applications for collecting, classifying, retaining, migrating, securing and accessing information – all at the lowest cost of ownership.

Unlike vendors that deliver generalized ECM products with centralized or consolidated architectures, or support few applications and data types, UFC delivers the most comprehensive solution, specifically

tailored for the Oil and Gas customer. The distributed nature of the solution along with UFC's extensive expertise and unique approach makes it ideal for the Oil and Gas Company with remote offices that have limited storage space, minimal IT infrastructure or technical support. Remote locations realize significant improvement in operational efficiencies, improved collaboration, and a reduction in storage cost - without sacrificing centralized control or visibility of information. From capturing personnel information such as fuel cards and human resource forms to capturing and storing engineering drawings and correspondence, UFC provides the Oil and Gas industry the ability to reduce paper transaction costs while increasing their data processing efficiencies.

Meeting Management Challenges

Many leading companies come to UFC for their expertise in the oil and gas industry, the unique selection of information management technology that they offer, and their innovation and unique approach in solving data management challenges. UFC has been delivering solutions to the oil and gas industry for over 10 years and to some of the biggest names in the industry.

Oil and gas organizations face several ongoing management challenges.

- Knowledge workers are dispersed across divisions, geographies and time zones.
- The data is often inaccessible or stored without any underlying organization, making it difficult and costly to find, retrieve, use and share.
- Much of the content is inconsistent, in different systems or in paper form.
- Adhoc or one-off processes proliferate across the company, generating additional cost while limiting management visibility
- Much legacy information is paper-based, stored in boxes in distributed locations
- An inability to capture content and records greatly increases the risk of regulatory non-compliance

To help overcome these challenges, UFC Inc. offers an integrated set of capabilities as part of a broader Enterprise Content Management Solution including:

Solution	Benefit
Distributed Data Capture	Automates the conversion of paper and other electronic documents from centralized or remote locations into a centralized, business-ready system
Workflow Automation	Easily create complex workflow processes across a geographically distributed environment
Enterprise Content Management	Capture, manage and share all upstream and downstream content in a secure repository supporting all business and IT needs including engineering drawings

These products help accelerate knowledge management, while reducing overall cost and risk to the organization.

Distributed Data Capture

Quillix Capture, a critical component to UFC's portfolio offering, is a distributed document capture process management system that streamlines the process of acquiring and creating documents. Its innovative Web Client provides scanning, importing and indexing of documents easily from anywhere around the world. With Quillix Capture, an organization can:

- Capture documents easily from anywhere around the globe
- Capture and index large volumes of documents securely and efficiently
- Automate complex capture and indexing tasks
- Import and process email and faxes
- Ensure corporate compliance by managing and monitoring incoming documents
- Easily integrate with third-party and legacy systems

Quillix Capture was designed from the very beginning to be a distributed system. This technology was pioneered in late 1999 with a vision of capturing documents from anywhere around the world with an easy to deploy web-based capture client, while other capture companies were focusing on thick clients and proprietary scanning hardware. As browser technology matured and internet bandwidth increased, this thin client capture application became the main capture application. Since then the product focus has been on building advanced production capture features into the thin-client Quillix Capture System.

Remote Office Deployment

The Quillix Capture Client delivers production capture features into a thin browser-based application that is easily deployed to any desktop with an internet connection and a browser. Documents can be scanned with any TWAIN scanner or imported from the desktop. Getting documents from their source into a repository is an easy and straightforward process where documents are securely transmitted from the Quillix Capture Client to the Quillix Server one at a time, or in bulk over an internet connection.
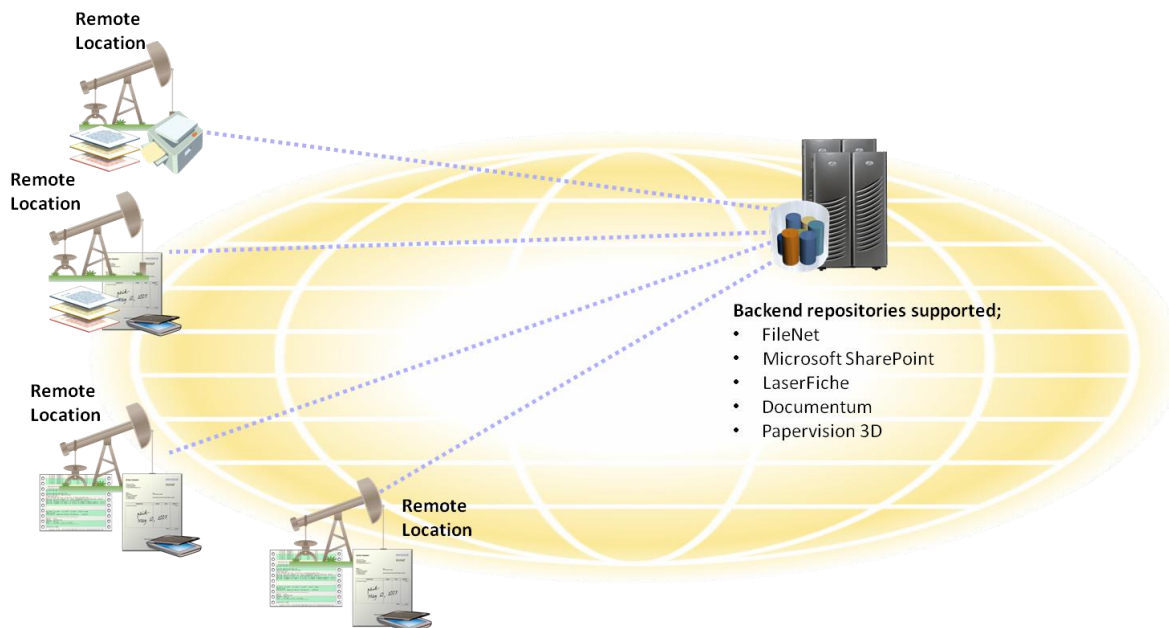
The Quillix Capture Client provides production quality capture, packed into a thin browser-based application that is easily deployed to any desktop application that has an internet connection.

Collaboration Across Locations

Quillix Capture does more than just remote scanning and uploading of documents from distributed locations, it allows people in different locations to work together to accomplish sophisticated capture tasks.

The product uses a unique business process engine complete with a visual workflow designer and flexible processing queues to allow people to work together across locations. Scanning, indexing, approving and storing can all occur in different locations, making Quillix the most flexible and adaptable capture application available.

Powerful Workflow Engine

The power behind the Quillix Capture system is its one-of-a-kind business process engine. Developed by business process automation experts with over 30 years combined workflow and business process automation experience, Quillix Capture addresses document capture automation like no other capture product on the market.

Quillix Capture includes an integrated Visual Process Designer for designing capture processes easily and efficiently. This capability allows analysts and administrators to create business processes visually by simply drawing a map. Powerful and flexible business processing rules are implemented through data-driven wizards and easy to use visual dialogs.

When it comes to automating document capture, Quillix stands alone in its ability to create flexible document capture processes on the fly and with ease. No programming is required. It also includes many Enterprise Class features for managing large sophisticated capture processes, such as process templates and the ability to import and export processes between test, development and production capture systems. In addition, Quillix Capture is integrated with Active Directory Services and LDAP for management of user accounts on a large scale.

Extensibility and Open Architecture

Quillix Capture is completely extensible through its *Quillix Server eXtension* (QSX) architecture, allowing third-party developers and integrators to create fully plug-able processing modules for Quillix. The UFC Quillix Development Team uses this architecture in-house to develop MuWave QSX modules for Quillix including Barcode Recognition, OCR/ICR, PDF Conversion and many others.

Email and Fax Support

Capturing and managing email communications has become a high priority for many organizations. Quillix Capture is a complete capture solution, providing options for capturing all organizational documents and information from a single platform. The MuWave Email Gateway for Quillix Capture is a specialized Input Source that monitors POP3 and IMAP email boxes for incoming mail, and imports email from monitored mailboxes into Quillix Capture for processing.

The MuWave Email Gateway and the Quillix Capture system provide a complete solution for automating Email capture, providing intermediate processing of email and attachments, and archival of email and attachments in a document repository.

MuWave Email Gateway features include:

- Works with POP3 or IMAP servers
- Handles an unlimited number of mailboxes simultaneously
- Captures messages along with attachments and imports them to Quillix for processing
- Handles all email attachments and splits images apart into individual pages
- Rules for rejection of messages from unauthorized addresses
- Rules for rejection of messages with invalid attachments or image DPIs
- Automated reply capability for acknowledgement of processing
- Options for deleting processed messages or moving them to a folder
- Indexing of documents and batches using metadata from each email message
- Provides access to all message metadata such as subject, body, from names and addresses
- Provides built-in advanced Visual Basic scripting

Faxed documents present a capture problem for two reasons. They often arrive in an organization as paper from fax machines. And with multiple fax lines, they arrive in very large volume. Because of these reasons, scanning and indexing paper faxes by traditional means can be costly and time consuming.

Quillix Capture works with leading fax server providers to make capturing faxes easy. The Quillix Fax input source (optional) provides a direct interface with leading fax server software from Captaris and Biscom. The Quillix Fax input source automatically monitors fax mail boxes and imports faxes for processing as soon as they are received by the fax server.

Quillix Fax Features and Benefits:

- Save time and money - stop scanning paper faxes
- Scales to handle any number of fax servers
- Batch-level indexes are created from fax information
- Direct fax server integration for high performance
- Simple and easy to manage with a graphical workflow designer for intuitive configuration of the QSX modules

Using the Quillix Fax input source, faxes can be automatically directed to the appropriate people and processes before being stored in a document repository. Certain fax attributes such as ANI (Caller ID) and Receive Date can be used for indexes or database lookup key fields.

UFC MuWave QSX Quillix Connectors

The Quillix document capture solution is back end independent through the use of the MuWave Quillix QSX Connectors. Documents can be routed to a number of different ECM systems, file system directory or other storage archives. In addition to document control and storage, data from processed documents can be extracted and parked for updating external business systems.

Quillix Connectors Features and Benefits

- Documents can be committed to different content management systems from within a single batch
- Documents can be committed to a file system directory for further processing

- Data can be extracted and parked for additional data entry
- Global or local data capture people use only one system for all document and data capture operations
- Logical configuration through Quillix's graphical workflow engine

Document and data capture needs are different from content management requirements. For stored content to be productive the data capture solution must be intuitive, easy to use and capable of capturing and processing documents and their relevant data automatically and efficiently. The document capture system becomes a key component of the overall content management solution. The key driver behind UFC's capture system is the behind the scenes processing of documents by the QSX module components into valuable and productive enterprise information.

UFC Quillix / MuWave Data Capture System Strengths
- Web Based, Intuitive, Thin Client Capture
- Batch capture, different documents can be in the same batch
- Intuitive work flow design with automated capture processing
- Intelligent document processing features accomplished on the server
- Scalable Structured, Semi structured, Unstructured OCR / ICR through industry partnership with ABBYY
- Independent Content Management / Data Repository Committal

Enterprise Content Management

There is a significant opportunity for companies in both upstream and downstream industry to leverage information technology (IT) to improve and fulfill their business objectives. Of course, the nearly exponential growth in data has been exacerbated by the global structure of oil and gas companies and the human capital challenge within the industry. To achieve competitive advantage, oil and gas companies depend on access to nearly real-time information. For these companies to succeed and compete, information technology infrastructure and access to data needs to be aligned with the business objectives to ensure that data becomes enterprise intelligence without compromising security, speed of access, or the ability to collaborate.

As such, enterprise content management is a key pillar for long-term success of oil and gas companies:

- Information technology that is aligned with the business challenges can improve visibility of operations, increase efficiency, improve the decision-making process, and be a key enabler of improved profits and revenue.
- A solid data management foundation that supports sharing of information across domain teams and dispersed geographic resources will lead to better understanding and increased value.
- Enhanced workflow technologies will reduce boundaries and support integrated operations, as well as enable access to a broader spectrum of knowledge workers.
- Improved efficiency at remote locations and offices by reducing administrative burden and associated resource and storage costs associated paper-based tasks.

UFC's ECM Solution

Laserfiche, a critical component to UFC's portfolio of solutions, is a robust and scalable Enterprise Content Management (ECM) suite of products designed to address complex business requirements by allowing companies to more efficiently and cost effectively capture, manage, store, preserve and deliver content and documents. It enables companies to integrate legacy systems, third-party databases and information from various business applications with paper and electronic documents.   With the platform's comprehensive search and retrieval capabilities, any information a user needs is right on his or the desktop. Full-text index and other precision search features reduce time lost on hard-copy file retrieval, and users can also take advantage of capabilities such as redaction and electronic "sticky" notes.

Unlike most ECM vendors, Laserfiche supports both distributed and centralized capture models and supports both Microsoft and Oracle databases. This modular and extensible platform makes it a preferred solution for companies within the Oil & Gas Industry by helping to create, collect, transform, track, manage and deliver information anywhere within the enterprise - even at remote locations.

Previously scanned images, PDF files, word-processing documents and other electronic files can be imported into a repository, and users can also send documents from Microsoft Office, Outlook and Windows Explorer directly to the Laserfiche repository. When exporting images, users can choose to save in different file formats, including PDF. Users can also password-protect images exported as PDFs and can export images, text, briefcases, electronic documents and search result lists.

To simplify system administration, the Laserfiche product suite is built on top of Microsoft technologies, deploys quickly and easily scales to accommodate both an increasing number of users and high-volume repository growth.

Laserfiche is a global solution, with deployments in the United States, Europe, Latin America, Australia, the Middle East and Africa to name a few, and supports languages including English, Spanish, Portuguese, French, Arabic and Vietnamese.

Capabilities unique to Laserfiche include:

- versatile system accommodates both hard-copy and electronic documents
- support for Microsoft and Oracle database platforms
- support for Microsoft SharePoint
- modular product - pay only for the capabilities needed
- easy to use via client desktop software or web-based interface
- exceptional overall ease of administration
- simple procedures for associating metadata to documents
- robust search capabilities
- simple importing and exporting of files into repository
- intuitive workflow module allows administrators to easily create complex workflows for users
- demonstrates compliance with Sarbanes-Oxley, HIPAA and fully Department of Defense (DoD) compliant. Documents can be erased securely with deletion protocols compatible with DoD 5220.22-M

About UFC Inc.

UFC Inc. is a consulting, integration and solutions firm preferred by clients in the Oil and Gas Industry for our quality, innovation and integration expertise. UFC provides data capture, enterprise content management software, support and integration services - based on a flexible architecture and common set of applications for collecting, classifying, retaining, migrating, securing and accessing information – all at the lowest cost of ownership.

Unlike vendors that deliver generalized ECM products with centralized or consolidated architectures, or support few applications and data types, UFC delivers the most comprehensive solution, specifically tailored for the customer. The distributed nature of the solution along with UFC's extensive expertise and unique approach makes it ideal for the Oil and Gas Company with remote offices that have limited storage space, minimal IT infrastructure or technical support. Remote locations realize significant improvement in operational efficiencies, improved collaboration, and a reduction in storage costs - without sacrificing centralized control or visibility of information. From capturing personnel information such as fuel cards and human resource forms to capturing and storing engineering drawings and correspondence, UFC provides the Oil and Gas industry the ability to reduce paper transaction costs while increasing their data processing efficiencies.

Call us today to find out how we can help your organization at (248) 447-0100 or email us at sales@ufcinc.com.