ACCRUENT MERIDIAN

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# WHY ENTERPRISE DOCUMENT MANAGEMENT SOFTWARE IS INSUFFICIENT FOR ENGINEERING CONTENT

**The Advantages of Accruent Meridian**



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# ABOUT THIS EBOOK

In the world of document management, there is a wide range of systems available, whether it be for general or more specialized purposes. For many organizations, managing their engineering information with off-the-shelf enterprise document management software can be a big challenge.  Even though these systems are primarily built to manage documents that undergo very little change (e.g., legal and financial information), organizations can end up utilizing a one-size-fits-all strategy for all electronic documentation management, including ever-changing and complex engineering information.

Engineering information is more complex to manage than generic documentation. Often, these files are quite large and have existing relations with other files with particular requirements for managing them. The lifecycle of a file or record consists of a dynamic phase and a static phase. In the dynamic phase, the file is created, approved, updated, and then made available to the organization. The static phase is the process of archiving the file. In the case of production facilities, like oil rigs, power plants, chemical factories, etc., technical documentation must reflect the on-site situation throughout the entire life of revenue-generating assets. Because the technical documentation must reflect the on-site situation, the dynamic phase is typically quite long, while the static phase is relatively short.

The asset information at production facilities is updated frequently. Modifications may be initiated from maintenance activities or optimization projects, resulting in small to medium plant changes to large revamp projects. Some engineering drawings and documents may also be needed in multiple change projects concurrently while at the same time still required for daily operations and maintenance. This means that the document, asset, and project lifecycle are tightly integrated, and a document management system must facilitate the management of all three lifecycles.

This eBook explains the differences between a generic enterprise document management software system and a purpose-built engineering document management system (EDMS). After providing information on the differences between both types of software systems, there will be an overview of the benefits of utilizing Accruent Meridian EDMS throughout the asset lifecycle. Some of the benefits discussed include ensuring compliance, controlling engineering project costs, improving safety, protecting brand reputation, and extending the lifespan of decade-old assets.

# UNIQUE CHARACTERISTICS OF ENGINEERING CONTENT

Enterprise document management software systems have an extremely expansive scope, comprising all documents as electronic files for the entire organization. These types of systems are built for managing unstructured information like:

- Legal documents
- Financial documents
- Marketing collateral
- Scanned posts

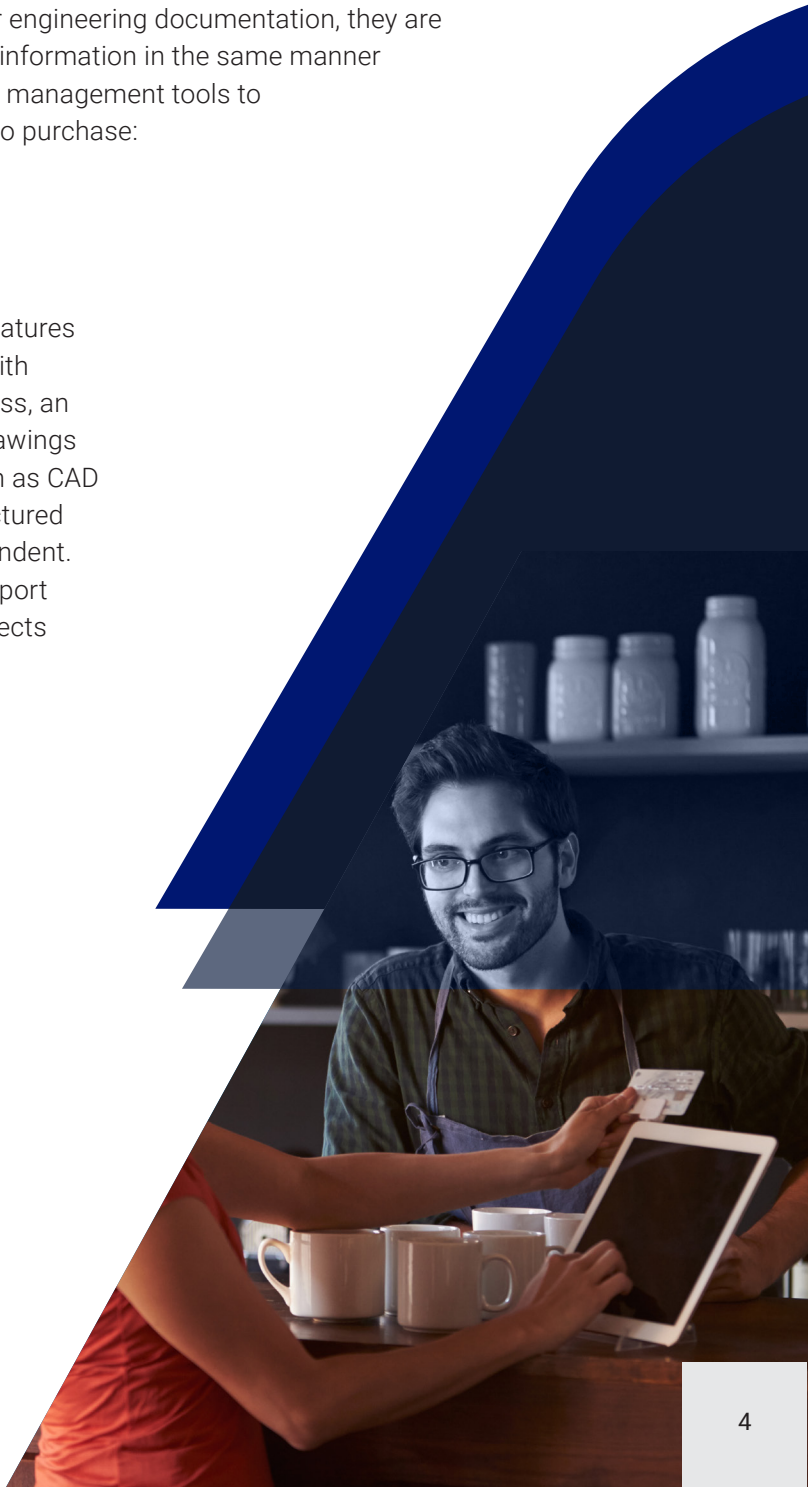
Typically, these documents are single records with metadata to be managed within the organization's business processes. An enterprise solution works best with documents that do not undergo much change and rely primarily on people to keep the system up to date versus automatic updates.

When organizations use an enterprise DMS to manage their engineering documentation, they are attempting to treat their dynamic and complex engineering information in the same manner as any regular office document. By using generic document management tools to manage engineering information, organizations are forced to purchase:

- Costly third-party add-ins
- Timely and cumbersome customizations
- Expensive outside consulting efforts

Since engineering content requires specific management features and needs to support business processes and workflows with internal and external stakeholders participating in the process, an EDMS is a purpose-built solution to manage engineering drawings and technical documentation. Engineering information such as CAD files, BIM models, drawings, and schematics are more structured in nature and can be significantly interrelated and interdependent. Engineering document management software systems support these often complex, interconnected files and the many objects that represent the logical and physical aspects of the plant.

> ***"We're now able to retrieve a relevant drawing quickly and have confidence it's the right version. It's also easy to track and exchange documents for electronic approval and updates with external parties following a clear workflow process."***
>
> – Kurt Lauvring, Project Manager, Sund Baelt



# MULTI-CAD AND BIM INTEGRATION REQUIREMENTS

For most enterprises, content management solutions have significant technical limitations that prevent them from being used as engineering document management solutions. Many of these solutions do not support CAD drawings files, have not invested in CAD authoring tools integrations, or do not support building information management (BIM) systems. These limitations can force companies to purchase costly third-party add-ins that require consulting efforts to determine the cumbersome process to make these add-ins work together. In addition, the majority of these solutions do not support integrations with BIM systems.

With Accruent Meridian EDMS software, users globally can store, maintain, and review CAD drawings as part of the change management process. From its inception, Meridian EDMS has been built with CAD document management in mind so organizations can:

- Utilize a fully CAD-platform solution of their choice for drawings management to easily store, manage, render and visualize both 2-D and 3-D content from major CAD systems
- Keep their master data up-to-date while organizing change processes in isolated work areas with workflows
- Give non-CAD users, such as operations and maintenance, access to engineering drawings to streamline their internal business processes and increase productivity and efficiency
- Reduce time spent searching for drawings and related documents and eliminate delays while accessing large files

The value of a BIM solution extends beyond design and construction and into an asset's operational lifecycle. It delivers information that an owner or operator can use for facilities management, operations, maintenance, refurbishment, and extension, right through to eventual demolition. An EDMS solution can automate and streamline data and document handover from the CAPEX project lifecycle to the OPEX asset lifecycle. At the end of the CAPEX project, enhanced models and documents should be ready to be handed over.

Accruent Meridian's common data environment (CDE) manages and consolidates models, data, and documents gathered during all project lifecycle phases. Meridian CDE oversees models, data, and documents according to BIM Level 2 standards (i.e., IFC, COBie, and 2D PDF).

> ***"By enabling users to easily compare drawing revisions and highlight what has changed, Meridian has improved the efficiency and quality of our engineering projects."***
>
> – Janet Hart, Technical Services Manager, Generation Operations & Engineering, Seattle City Light

## SPECIFICS OF ENGINEERING-RELATED BUSINESS PROCESSES

Generic document management tools usually do not provide out-of-the-box functionality to manage workflow interrelations and cannot manage concurrent updates during an engineering project.

It can be difficult for many organizations to track their mission-critical engineering documents properly. While engineering updates are occurring simultaneously, other departments are continually making changes. This is one example of concurrent engineering, where independent changes from different parts of the organization are performed at the same time.

When these changes overlap, they generally have common interdependencies. This is another example of concurrent engineering, where the same documents, piping, instrumentation designs, general arrangements, process guidelines, etc., must be reformatted as part of two or more separate initiatives. The complexity of multiple changes to engineering documents at the same time can put a strain on engineering teams.

In addition, maintenance teams will often make changes in the field to ensure smooth and efficient plant operations. These changes are typically marked up on engineering drawings that the technicians have printed for reference. Later, these marked-up printouts are handed over to the engineering team to incorporate these changes into the current documentation set.

Accruent's engineering document management system, Meridian, is made to facilitate the information handover process between internal and external stakeholders. Different documents can have different workflows within Meridian. For example, a piping and instrumentation design can have one workflow while a datasheet has another. Within Meridian, users can apply business rules and provide a connection between the project workflow and the documents inside the project. This ensures that users do not get ahead of themselves and waste time and money. Meridian provides a structured workflow process that can be orchestrated to ensure that changes are executed and approved.

# MANAGING COMPLEXITY OF ASSET-DOCUMENT RELATIONS TO PROVE FULL CONTROL

Another critical business challenge is the silo-based setup of engineering and maintenance teams. Although these teams need each other's information, they often use separate systems. These disparate departments usually are not set up to share information in an easy and reliable way. Different systems lead to multiple inputs of similar information, extensive search times, or delays in reviews and approvals. Most enterprise document management software solutions cannot overcome these data silos between these disparate departments because these systems rely on individuals manually keeping each system up-to-date versus automatic updates.

Instead of uploading or linking documents manually against each asset in an enterprise asset management (EAM) solution, integrating with Meridian reduces the effort of managing tag-doc relationships. This way, operations and maintenance always work with up-to-date technical asset information.

Assets, such as pumps, valves, vessels, process lines, etc., are represented on documents and drawings. To ensure that all documents are shown when searching by asset tag number, the tag-doc's relation must be established. This process is simplified through tag extraction. The document is scanned for all tag numbers and checked against existing ones in the database to confirm the reference exists.

Tag extraction can be completed as a background process or by the user. The user interface helps to easily manage all tag-doc relations during plant modification projects.

Meridian manages engineering information for organizations throughout the entire asset lifecycle. All asset-related data is stored and made available to the extended enterprise as a single point of truth. This allows operations and maintenance teams to work safely and efficiently while engineering executes plant modification projects. Collaboration with internal and external stakeholders is managed through the same system to harmonize engineering processes and ensure regulatory compliance.

> ***"The assets and documents in both applications are 100% identical. As a result, our people have a better view of the as-built environment and, therefore, work more efficiently. Consequently, management costs have been reduced."***
>
> – René Baron, Maintenance & Engineering, BASF

# SUMMARY

When an enterprise system attempts to address all the concerns of multiple departmental systems, they often fail because they are trying to be all things to all people. An enterprise document management software solution is best suited to manage documents that undergo very little change. There tends to be negative consequences when organizations attempt to use generic systems to manage their dynamic and complex engineering information. It can become very costly for an organization to spend large amounts of money trying to get enterprise document management software systems to address the specific requirements of a department, such as engineering, for example, finding that the functionality does not exist without customization. Then, schedules are not met, and the original objectives become less clear. Before you know it, too much time and money have been spent without meeting the actual objectives. The engineering project itself may be canceled, with the blame falling on the software.

When an enterprise document management system needs to address the requirements of different workgroups and departments, it dramatically increases the complexity of the data model. Much more information must be tracked that is often only relevant to a particular department and not the enterprise as a whole. This can add overhead to the system and unnecessarily use valuable disk space and network bandwidth. Several designs or versions can be reviewed within a project group before the official documents are released. Enterprise document management software provides little value for organizations relying on engineering drawings and documentation. The software should only store and manage the information critical to the enterprise.

An engineering documentation management tool like Meridian can provide global access to engineering data. For many organizations, more and more projects are extending beyond a specific facility or plant, meaning that engineers must be able to work more closely together and have access to their engineering information across multiple assets. In addition, as engineering work is increasingly outsourced to contractors, an organization must be able to share documents securely with its contractors. Suppose they are using a generic enterprise document management software solution. In that case, there may be a lack of IT support concerning the sharing of documents via email, file share, or Dropbox because of the lack of control and audit capabilities. An EDMS may also be needed to set up naming conventions for their engineering documents.

The lack of enterprise systems can lead to redundant inputs, data stored on personal computers, and an overall lack of data quality.

Accruent realizes that our customers are working with several popular applications and that we must construct our product so that users can interface between multiple applications efficiently. That is why we offer our customers an extensive list of out-of-the-box integrations.

Accruent Meridian manages engineering information throughout the entire asset lifecycle. All mission-critical engineering documentation is stored within a single system which can be made available to the extended organization. Our solution seamlessly connects operations and maintenance departments to engineering to work safely and efficiently. Meridian provides a comprehensive engineering document management solution that ensures 24/7 access to technical documentation, so users can break down information silos, integrate their departments, and increase operational excellence.

## WATCH THE VIDEO TO DISCOVER HOW MERIDIAN CAN HELP YOUR ORGANIZATION


## SPEAK TO A SPECIALIST

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