

Advantages of BlueCielo Meridian over Enterprise Content Management Systems



Leveraging BlueCielo Meridian within the enterprise

white paper

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1 Purpose of this whitepaper

In the world of document management, there are many systems available either for generic or specialized purposes. In this document we will explain the difference between generic document management systems and specialized systems for managing engineering data.

In this document we will also explain how our Engineering Content Management system BlueCielo Meridian Enterprise can be extended to a full Asset Information Management system. We will give an overview of the benefits of BlueCielo Meridian Enterprise for improving your business processes, your overall revenue, cost savings and regulatory compliance.



2 Introduction

Many content management systems or document management systems are based on the management of single files, or records. 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, perhaps updated and then made available to the organization. Entering the static phase of its life, it needs to be archived. Incidentally, the file might get updated, but in general the dynamic phase is much shorter than the static phase.



Technical documentation is more complex to manage than generic documents, because they are often very large files with many relations to other files and very specific requirements for managing them. So, Engineering Content Management is not the same as Enterprise Content Management, which both can be abbreviated to "ECM" (see next chapter).

In case of production facilities, like oil rigs, power plants, chemical factories, etc., technical documentation must reflect the actual on-site situation throughout the entire life of the revenue-generating assets. This means that the dynamic phase is very long and the static phase relatively short.



Technical documentation of the revenue-generating assets at production facilities is updated very frequently. Modifications may be initiated from maintenance activities or optimization projects, resulting in plant changes, medium change projects, up to large revamp projects. Some documents may be needed in multiple change projects concurrently, while at the same time being needed for daily operations and maintenance. This means that the Document Lifecycle, Asset Lifecycle and Project Lifecycle are tightly integrated and an Asset Information Management must facilitate the management of all three lifecycles.

BlueCielo Meridian Enterprise is a versatile Engineering Content Management solution with a broad range of features. It allows various company types in multiple industries to optimize their business processes related to the creation, collaboration and distribution of engineering data. BlueCielo Meridian Enterprise is used as an Asset Information Management solution for Owner/Operators, as well as an Engineering Content Management solution for Contractors and Equipment Suppliers. This is possible due to the many features, the great flexibility in configuring the system to specific user requirements and the available modules which can be added to address specific business problems.

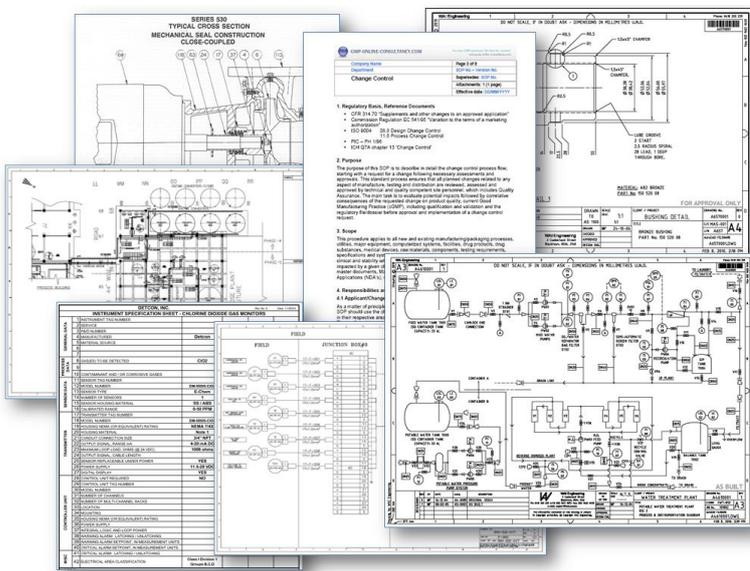
3 Engineering ≠ Enterprise Content Management

In our company name BlueCielo ECM Solutions, you find the abbreviation ECM. ECM has over 250 definitions, including: Electronic Control Module, Electronic Content Management, Engineering Change Management, Enterprise Change Management, Enterprise Configuration Management, Enterprise Compliance Management and many others. Most common is Enterprise Content Management, but BlueCielo utilizes it as the abbreviation of *Engineering* Content Management. As explained in the introduction, engineering content management is not the same as enterprise content management.

The Association for Information and Image Management (AIIM) defines ECM as: *"Enterprise Content Management (ECM) is the strategies, methods and tools used to capture, manage, store, preserve, and deliver content and documents related to organizational processes. ECM tools and strategies allow the management of an organization's unstructured information, wherever that information exists."*

Enterprise Content Management has a very broad scope, comprising all the documents in the form of electronic files for the entire organization. That includes legal documents, financial documents, marketing documents, scanned post, etc. The documents are all single records with meta-data to be managed within the business processes of the organization.

Based on the above definition, Engineering Content Management can be defined as: *"Engineering Content Management (ECM) is the strategies, methods and tools used to capture, manage, store, preserve, and deliver engineering content and technical documents related to all engineering-related organizational processes. ECM tools and strategies allow the management of an organization's unstructured information, wherever that information exists."*



Since engineering content requires specific management features and complex business processes with internal and external resources participating in the process, Engineering Content Management can be seen as a superset of Enterprise Content Management.

Specific engineering content management related topics are:

- Reference management
- CAD application support
- Title block integration
- Assemblies & Where used
- Copy with references
- Document & Project Workflow
- Revision management
- Meta data; dependable lookup lists
- Viewing & Compare
- Role base security
- Navigation views and To-Do lists
- Print/Plot

4 Asset Information Management



By 'assets', we mean all the resources that have a direct and significant impact on your company operations and performance. Examples are pumps, heat-exchange units, drums, valves and process lines, but also buildings, steel structures and electric systems are contributing assets. It is very important that your assets contribute high reliability, both with respect to quality and continuity, while of course complying with the relevant regulations.

BlueCielo Meridian Enterprise is both an Engineering Content Management and an Asset Information Management Solution, which focusses on 5 key areas within the Asset Life Cycle.



The large picture shows that the core of BlueCielo Meridian Enterprise Meridian consists of a "Sustained environment" ①, which holds both the master data (assets and documents) as well as archives, like project archive and the archive of obsolete data), but also regulatory standards. Based on what happens in Operations & Maintenance ② (and through other change initiators) master data can be assigned to change projects ③ (either brown field or green field projects). Within a specific project, collaboration with external contractors and suppliers can be started ④.

Within our Asset Information Management solutions, our view is that after project closing only 15-25% of all project data is of interest in the other phases of the asset lifecycle. We call those documents and assets the master data. So the Sustained Master data is a subset of all project data that needs to be handed over at the end of the change projects ⑤, but for future use and inspections, the entire project will be archived. The master data will be used by Operations and Maintenance ② and can be accessed through Enterprise Asset Management Systems such as IBM Maximo, SAP Plant Maintenance, INFOR (Datastream) as well as Facility Management systems like Archibus, Famis and others or directly by use of our Operations client.

5 Advantages of BlueCielo Meridian Enterprise

As described in the previous chapters, BlueCielo Meridian Enterprise can be used as an Engineering Content Management system as well as a full Asset Information Management System for various types of companies within the Process & Power industries, such as Oil & Gas, Utilities, Pharmaceuticals, (Petro-) Chemicals and related industries.

BlueCielo Meridian Enterprise is very feature rich, highly configurable to meet organization-specific requirements, scalable to implement as a local team solution up to enterprise level and can be extended through various modules to expand the impact on your organization. Over and above these advantages, BlueCielo Meridian Enterprise provides our customers the following benefits over Enterprise Content Management systems:

- Integrate with connecting departments such as Facilities Management and/or Maintenance Management (with its specific applications) and BOM information connected to ERP systems.
- Working with drawings in their native format and/or PDF renditions.
- Robust integration with the authoring engineering applications such as AutoCAD, Inventor and Solidworks, including the ability to synchronize data with the document and the database to keep the data accurate, reduce errors and improve accuracy.
- Managing References and Assembly structures correctly requires the system to know the format of the data it is managing, because the complex relationships this data has, which are often held within the data format itself. The file format changes regularly from one version to another and it is therefore nearly impossible for an Enterprise Content Management System vendor to keep up with this, since this is not their focus. This leads to incompatibility with current versions of authoring applications or inaccurate or corrupt data.
- Ad hoc workflow requirements in an engineering environment to support their work processes, including concurrent engineering practices, batch plotting, creating work packs and engineering change orders, and managing hybrid files correctly.
- Usability is critical to the productivity of engineers and a product like BlueCielo Meridian Enterprise is written specifically for the engineering environment and geared to increase their productivity, which is not considered when developing an enterprise system. Most enterprise systems have 3rd-parties write an add-on to address drawings and they are very limited regarding what they can do because the functionality is not interlaced in the core application but is rather added on top of it. Engineers recognize this easily and become frustrated with using systems that are obviously not meant for them. (BlueCielo Meridian Enterprise can be used as a Windows application or as a web-based solution.)
- Often the entire organization must work with the last released version of technical documentation, while change projects are taking place. The Work-In-Progress drawings are not necessarily needed by the entire enterprise, as long as everybody knows that people are working on improvements. Therefore, there is rarely justification for integrating an engineering system into the enterprise system, except sometimes at the approval/release of a document. It is often suggested that the cost of tying the two systems (the Engineering and the Enterprise Content Management system) together would be high, but this can be avoided through the lightweight integration it typically requires.

- When an enterprise system needs to address the requirements of workgroups and departments, it greatly increases the complexity of the data model. Much more information must be tracked that is mostly only relevant to a particular department and not the enterprise. This adds a lot of overhead to the system and uses valuable disk space and network bandwidth unnecessarily. In a workgroup, there are often several designs/versions before it will be released. Why should this information be managed by the enterprise system when it has no value to the enterprise but it is still consuming valuable resources and increasing administration time to manage the data at the enterprise level? The enterprise system should only store and manage the information that is critical to the enterprise.
- When an enterprise system tries to address all the concerns of a departmental system, this is where they often fail because they are trying to be all things to all people, which is impossible. They should focus on what they are good at in the enterprise because they are best suited for those tasks. This is also true where you start to spend a large amount of money on enterprise systems because people try to get them to address the specific requirements of a department, but the functionality does not exist in the core product without customization. Then schedules aren't met and the original corporate objectives become less clear and before you know it, too much time and money has been spent without the real objectives being met. Then the project is cancelled, with the organization blaming the software for its own failures.

6 Summary

In this document we have explained how Engineering Content Management is different from Enterprise Content Management and provided a clear definition of both. BlueCielo Meridian Enterprise is a complete Engineering Content Management System. The system is extremely feature rich, highly configurable to meet organization-specific requirements, scalable to implement from a local team solution up to enterprise level and further extendable through the addition of various modules to become a full Asset Information Management System.

Area	Benefits
<ul style="list-style-type: none"> ■ Efficiency improvements 	<ul style="list-style-type: none"> ■ Quick set up of controlled projects ■ Full control of the Management of Change process ■ Controlled release to master process ■ Reduce search time
<ul style="list-style-type: none"> ■ Cost reduction 	<ul style="list-style-type: none"> ■ Less rework through controlled workflow process ■ Projects delivered according to project plan ■ Controlled approval process before purchasing or construction starts ■ Seamless hand over of As Built data
<ul style="list-style-type: none"> ■ Quality enhancements 	<ul style="list-style-type: none"> ■ Constant improvement of the set of As Built data ■ Controlled interdisciplinary checks ■ Continuous improvement of design quality
<ul style="list-style-type: none"> ■ Regulatory compliance 	<ul style="list-style-type: none"> ■ Improved compliance to internal quality standards and procedures ■ Full proof of control ■ Legally required documents are maintained as built

The implementation of BlueCielo Meridian Enterprise as a full Asset Information Management system provides many benefits, some of which are listed in the above table. The impact on your organization can be calculated by making the listed benefits measurable, for example in case of "Reduction of search time". The average amount of time spent searching for information can be measured, for example, Operations and Maintenance spend searching for As-Built documentation. (The industry average is 4-8% of the total working hours of all employees in the organization.) By implementing BlueCielo Meridian Enterprise this can be reduced to having the data immediately available with a few clicks!

If you think that business processes within your organization can be optimized with respect to managing asset related engineering content, please contact with our Sales Department. Our contact details can be found on the next page and on our website www.bluecieloecm.com.



Taking ECM to the Enterprise

7 BlueCielo ECM Solutions

BlueCielo ECM Solutions (formerly Cyco Software) provides Engineering Content Management (ECM) solutions for multiple vertical industries, including utilities, oil & gas, (petro-) chemical, pharmaceutical, government, transportation and process and discrete manufacturing. BlueCielo has two decades of industry experience with more than 275,000 users in 50+ countries worldwide. The company has offices in the USA, UK, Russia, Germany, and The Netherlands and an extensive global network of established partners. BlueCielo ensures a high level of service and support on a truly worldwide scale for its leading software solutions BlueCielo Meridian Enterprise and BlueCielo Teamwork (formerly AutoManager Meridian and AutoManager TeamWork).

7.1 Questions?

For further information on this subject or about BlueCielo, please feel free to contact us by phone, email info@bluecieloecm.com or visit our websites.

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